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**Academic development through teaching - a study
into the experiences of postgraduate and postdoctoral
researchers**

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Academic development through teaching – a study into the experiences of postgraduate and postdoctoral researchers

Abstract

This study aims to develop an understanding of the learning about academic practice that postgraduate and postdoctoral researchers develop through teaching experiences. Three key questions are asked: What is the nature of the teaching roles that postgraduate and postdoctoral researchers undertake? What kinds of processes help postgraduate and postdoctoral researchers engage with teaching roles? What kinds of learning do teaching opportunities provide postgraduate and postdoctoral researchers?

To address these questions a research design using an interpretive approach with 14 postgraduate and postdoctoral researchers at a UK university was undertaken. This involved a visual method of data collection that captured teaching experiences through photo-elicitation.

The study found that the teaching roles that were undertaken varied significantly in their complexity, and that these roles were primarily accessed through ad-hoc and informal means. The study also found five key processes that helped engagement with teaching roles. These processes were identified as informal conversations with colleagues; feedback on teaching performance; observations of other teachers; collaborative working; and training. The outcome of these

processes resulted in the development of new understandings about both academic work and emerging professional identities.

The implications of the findings are twofold. Firstly they contribute to an improved theoretical understanding about the relationship between teaching and academic development for early career researchers, and a new model that conceptualises the nature of this relationship is presented. Secondly, the findings also have implications for professional practice. The study highlighted that the quality of the learning derived from a teaching experience will be greatly enhanced when opportunities for teaching dialogues with more experienced colleagues are present. This provides the rationale for institutions to adopt a peer review of teaching scheme that can offer formative and developmental support for postgraduate and postdoctoral researchers who are undertaking a teaching role.

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Chapter 1: Background and Aims of Thesis

1.1 Introduction

This chapter provides the rationale for the choice of the topic, its aims and why I consider it should be researched. The chapter begins by highlighting the nature of postgraduate and postdoctoral teaching in higher education and situates this activity within policy initiatives to promote researcher and teacher development at UK Universities. This provides the background for the next part of the chapter which outlines my own professional role as an educational developer, a role which has emerged as a product of this policy context. Issues I have in undertaking this role are then highlighted and it is these issues which form the basis for the aims of the study. Three aims are identified and the chapter concludes by outlining the structure for the remainder of the thesis in addressing these aims.

1.2 The research topic

Akerlind (1999) in a study of academics at an Australian University asked the question *what it means to develop as an academic*. Responses ranged from quantitative conceptions of development such as improving the effectiveness of work performance to more qualitative aspects such as becoming well respected in one's field. In a review of macro forces impacting the US Higher Education sector Austin and McDaniels (2006) considered how the nature of work was likely to change for future generations of academics. Changes identified included: the need



for future academics to have the ability to work within greater fiscal constraints; to be productive, entrepreneurial and technologically adept; to be more accountable for the student experience and student learning; be more adept at dealing with a diverse student population; and to be able to undertake new forms of interdisciplinary work. Austin and McDaniels (2006, p.416) noted that:

Within this changing context, faculty members are facing pressures to engage in more work, often different work, and sometimes with fewer resources. These demands require innovative, talented, and creative faculty members.

This view highlights that beginning an academic career for many individuals must seem a daunting prospect. Therefore developing an understanding of how individuals might become 'innovative, talented and creative faculty members' is an important area of academic enquiry. This study makes a contribution to this understanding. It does so by investigating the experiences of one particular group of individuals, postgraduate and postdoctoral researchers, and assesses the value of one particular university activity, teaching, to their career development.

For postgraduate and postdoctoral researchers teaching is often an occasional ad-hoc activity undertaken in addition to normal research responsibilities. Gunn (2007, p.535) has noted that '...in the English-speaking, research-intensive universities of the developed world, there is nothing particularly new about the use of doctoral students as undergraduate tutors and laboratory demonstrators'. In some disciplines, most notably Science, Technology, Engineering and Mathematics (STEM) subjects at traditional research universities, the postgraduate is often contributing to a disciplinary culture by taking the part of a junior

colleague in a research hierarchy. Bryson (2004) estimated that there are some 15,000 contract research staff who teach part-time and a further 15,000 postgraduate students. However such attempts at enumeration should be treated with caution. It was only in 2004-5 that the Higher Education Statistics Agency (HESA) required part-time staff to be included in their annual data collection exercises, and these figures give no indication as to the specific number of postgraduate and postdoctoral researchers undertaking teaching which, given the often casual nature of this type of teaching appointment, will not necessarily be included in institutional returns to HESA. What can best be inferred from HESA statistics is that use of part-time teachers in UK Higher Education is significant, and is indicative of the wider phenomenon of a sector becoming increasingly characterised by the need to have a more flexible labour force (Knight *et al*, 2007).

Moreover, postgraduate and postdoctoral researchers who undertake teaching are likely to be a diverse grouping. For example, Husbands (1998) made the distinction between 1) postgraduate students who are currently registered for a research degree at the employing institution and who teach and are paid on an hourly basis as contract labour, and 2) postgraduate students registered for a degree at the same institution, who receive a stipend or bursary and perhaps some remission of their postgraduate fees in return for performing teaching duties. Husbands estimated that those in the first category significantly exceed in number those in the second. While the literature uses a variety of terms to describe this type of teacher, for the purposes of the study, the term 'Graduate Teaching Assistant' (GTA) will be used. GTA is used generically and encompasses

designations such as Postgraduate Demonstrators (PGDs), Postgraduate Tutors, Teaching Assistants and Postdoctoral Teaching Fellows (Lueddeke, 1997 p.149).

This research therefore set out to contribute to the knowledge base about the GTA phenomenon. It did so by starting from the assumption that the activity of teaching provides postgraduate and postdoctoral researchers with forms of learning which will have considerable value to their future career development. What form this learning might take in relation to an academic career and how this learning is facilitated was the particular focus of the thesis. This focus was considered to have merit for two reasons. Firstly that findings resulting from the research would contribute to new theoretical understandings concerning the nature of researcher and teacher development. Secondly the findings would inform my own professional practice working with GTAs at a UK university. Both these policy and professional contexts within which the study is situated will now be discussed in more detail.

1.3 Researcher development at UK universities

The capability of the UK higher education sector to facilitate the development of research staff has received significant attention from a wide range of stakeholders over the last decade. These stakeholders include universities, research councils, industry and commerce, charities and other relevant organisations with an interest in enhancing the international standing of UK research. Traditionally, preparation for a research career has been located within the environment of disciplinary cultures. As Kogan *et al* (1994, p.72) have noted:

Socialisation into the disciplinary culture occurs in the interaction with the discipline and colleagues through doctoral and postdoctoral study.

In the pure disciplines it is through research study that one obtains a professional identity as physicist, historian or sociologist.

However, the situation in the UK is changing with increasing numbers of individuals now undertaking research training and development of one form or another. For example Research Councils UK (RCUK), the strategic partnership of the UK's seven Research Councils, and the largest funder of research training in the UK, now support more than 30,000 researchers that includes 19000 PhDs, 14,000 research staff and 2,000 research fellows (RCUK, 2012). This has given rise to a wide range of researcher development needs at different stages of the career life cycle. Examples of this include supporting the transition from postgraduate to postdoctoral research and supporting new entrants into research at mid-career, especially in professional areas (Gordon, 2005).

In the case of doctoral students, where the PhD is still the most popular and common form of research training offered by universities in the UK (Park, 2005), development takes place through a pedagogic model which is historically well established. Typically this is through a form of research apprenticeship that is examined by experienced researchers through the supervised production of a thesis (Mullins and Kiley, 2002). However, this model has evolved with a wide range of stakeholders now shaping current practice. For example RCUK now require postgraduates who they fund to work in a research environment that offers courses on research methodologies. This has given rise to preparatory

qualifications such as the MRes which is often undertaken in the first year of registration. Moreover, in response to concerns, for example from employers, the inclusion of skills in areas such as problem solving, communication, personal development and working with others now features prominently in doctoral studies training (Gordon, 2005).

An important driver for these changes was the publication of the influential report *Set for Success* (Roberts, 2002), which reviewed the supply of science and engineering skills in the UK. On the subject of postgraduate and postdoctoral researchers this report made several key recommendations to enhance research capacity. This included raising the value of doctoral stipends and postdoctoral salaries, and, in response to employability concerns, recommended that higher education institutions take responsibility for ensuring that all their postgraduate and postdoctoral researchers should have access to appropriate training opportunities. Significant for universities was the proviso that funding from the Higher Education Funding Council and the Research Councils should be made conditional upon implementing these recommendations in full.

It should be noted that the concerns raised by the Roberts Review were not uniquely a UK issue. For example, Akerlind (2005), in a study that examined the situations of early career researchers in North America, Australasia and the UK, noted that postdoctoral positions are often characterised as being short term and temporary in nature and offer relatively low rates of pay compared to other skilled workers. In the UK the Roberts Review made a series of recommendations for improved salaries, support for academic fellowships (described as a more

attractive and stable pathway into academia), more opportunities for industrial secondments and greater access for researchers to career development planning and training opportunities. Roberts (2002, p.13) stated that:

HEIs take responsibility for ensuring that all their contract researchers have a clear career development plan and have access to appropriate training opportunities – for example, of at least two weeks per year.

Almost a decade on from its publication, the impact of this review on policy and practice in relation to the training and career development of postgraduate and postdoctoral researchers at UK universities has been significant. A key reason for this was that 'all relevant funding from HEFCE and the Research Councils be made conditional on HEIs' implementing these recommendations (Roberts, 2002, p. 11). There has also been substantial activity in embedding the skills agenda through new management structures at universities, such as Graduate Schools (Denicolo *et al*, 2010).

The influence of the Roberts' recommendations can also be seen in current researcher development policy. For postgraduates this was initially done through the UK GRAD Programme (UK GRAD Programme, 2001) and the UK Higher Education researcher network for research staff (UK Concordat to Support the Career Development of Researchers, 2005). Since 2008, this work has been implemented through the Vitae programme, an initiative which aims to champion the personal, professional and career development of researchers in UK higher education. Bray and Boon (2011, p.100) have noted that this now provides the sector with:

A structural framework for on-going development of researcher career development within UK higher education institutions, supporting a range of researchers from postgraduate students to early career researchers (e.g. postdoctoral) and staff researchers (e.g. individuals usually employed on fixed term contracts to undertake specific research) through to traditional academics.

Lee *et al* (2010) have noted that a key initiative as part of this framework has been the launch in 2010 of The Researcher Development Framework (RDF). This is a tool that allows researchers to self assess their perceived attributes against explicit standards. Based on this assessment researchers are then asked to develop their own action plans as a means to aspire to research excellence against the attributes under consideration (Vitae, 2010). For example the attribute *Working with others* presents to the researcher a trajectory of expertise ranging from the less advanced 'listens, gives and receives feedback' to the more advanced criteria of providing an 'exemplar for collegial behaviour' (Vitae, 2012). Such descriptors are therefore designed to act as prompts for structured reflection on knowledge and skills and from this reflection the development of action plans. The process is conceived of as being iterative with individuals able to return to a descriptor at any point in time and to amend their self assessments.

An evaluation of the RDF with 33 users (Bray and Boon, 2011) found that the planner was used in a variety of different ways, particularly the numbers of RDF attributes that each participant engaged with. These ranged from a minimum of 3 to a maximum of 52. Also of interest was the fact that the tool was used in a

holistic fashion with users selecting from the full range of sub-domains. Bray and Boon (2011p.113) concluded that the RDF planner 'can provide a meaningful structure to an otherwise complex and potential chaotic activity' and made recommendations as to the effective use of the planner based on 3 key principles: the importance of individual choice when using the planner; that there should be support and guidance on how to use the planner; the researcher should be allowed ownership of the planner. Bray and Boon (2011 p.114) explain this third principle as follows:

With our use of the term "researcher ownership" we intend to convey our recommendation that the outcomes of the researcher's development plans should remain the exclusive property of the individual researcher and no requirement or structure should be put in place that circumvents this singular ownership without his or her express permission.

This observation about researcher ownership is considered particularly important and does suggest that if used in *the right way* the RDF can provide a useful tool for researchers to guide a self assessment on a wide range of attributes that are considered relevant to career development. Of particular interest to this study is the way in which some of these attributes might be developed through the activity of teaching, the assumption being that engagement in teaching has the potential to provide researchers with a wide range of unique experiences upon which a wide range of attributes could be developed. The next section will therefore review teaching as an aspect of academic practice more fully. It begins by reviewing initiatives to develop the quality of teaching at UK universities and in doing so highlights the ambiguous status of the GTA within this policy agenda.

1.4 Teacher development at UK universities

The recent White Paper published by the coalition Government *Students at the Heart of the System* (Department for Business, Innovation and Skills, 2011), includes an aspiration to increase the number of university staff with teaching qualifications. Such an aspiration comes at a time of great change in University funding arrangements and the introduction of increased tuition fees. In what is likely to become a more market driven sector, these changes have highlighted the importance to the sector of providing a quality student experience of which teaching is an integral part. In a recent conference address the Secretary of State with responsibility for UK Higher Education policy made the following comments:

From this autumn, students arriving at university will be asking what they are getting for the fees of up to £9,000 a year that they will be repaying when they graduate. Students are not just consumers, but they are certainly entitled to an excellent academic education for this funding. Students and their parents will be asking much more pertinent questions about the education they are getting. I understand the argument from universities that students should not be spoon fed and instead must be treated as independent learners. But that cannot be an excuse for low levels of academic engagement or feedback, or just plain inaccessibility. I already hear reports of the cultural change in our universities as the quality of the teaching experience for students comes front and centre. That is good news. I am sure you are all preparing for

a level of scrutiny of the student teaching experience that you have not had before.

David Willetts, Speech: HEFCE Annual Conference, Royal

College of Music, London, 18th April 2012

Such a comment clearly has implications for those with a responsibility for the development of quality teaching at UK universities. Sharpe (2000), for example has noted that professional roles such as teaching have traditionally been thought to demand a substantial specialist knowledge base which requires long periods of formal training to acquire. Eraut (1994, p.6) has noted that typically this may involve a 'a period of internship during which students spend a significant amount of time learning their 'craft' from an expert; a qualifying examination, normally set by a qualifying association for the occupation; a period of relevant study at a college or university leading to a recognised academic qualification; and a collection of evidence of practical competence in the form of a logbook or portfolio.' This approach is grounded in the assumption that relevant knowledge and competencies for teaching is something that can be *acquired* as an outcome of directed or formal processes. The rationale is that relevant learning is relatively stable, can be codified and can be replicated in different settings.

In the UK the notion of higher education teachers acquiring and displaying certain pre-determined competencies found favour with the National Committee of Inquiry into the Future of Higher Education in the UK (Dearing, 1997). This influential inquiry recommended that 'to achieve world class higher education teaching, it should become the norm for all permanent staff with teaching responsibilities to be trained on accredited programmes'. Since 1997 this

recommendation has been implemented by the sector with accredited training to teach programmes now commonplace for new academic appointments with teaching responsibilities and that investment has been an educational counterweight to departmental cultures that did not take teaching seriously (Gibbs and Coffey, 2004).

A key driver of this professionalization was the establishment of a national body to enhance learning and teaching. Originally called the Institute for Learning in Teaching in Higher Education (ILTHE), this body is now known as the Higher Education Academy (HEA). According to its Strategic Plan 2012-2016 (HEA, 2012), the Academy has a mission to use its expertise and resources to support the higher education community. A key aspect of this support is to develop and manage the UK Professional Standards Framework (UKPSF). This is a quality assurance scheme that uses a series of descriptors against which UK Higher Education Institutions can align and benchmark their training and development programmes for those staff who teach at their institutions. Introduced in 2006, the framework was revised in 2011 and now gives national recognition to university teachers at four levels: Associate, Fellow, Senior Fellow or Principal Fellow of the Higher Education Academy. According to Professor Craig Mahoney, Chief Executive of the HEA the UKPSF 'gives academics and other staff who support student learning the opportunity to benchmark their professional development. The Descriptors in the Framework give confidence that people with a critical job to do, supporting students in their learning experience, are appropriately prepared at each stage in their career' (Law, 2011, p.2).

However there remains a question concerning the extent to which relevant knowledge and competencies for teaching at university is something that can be *acquired* as an outcome of directed or formal processes. Zukas (2006) has described this as 'the issue of universality' and is based on doubts she has regarding the extent to which sets of generalised skills can be learnt and which are applicable regardless of the individual teacher or the situations in which they find themselves. This resonates with the observation made by Eraut (2004) that 'we should conceive of competence as a moving target, rather than a universal set of skills'. Indeed the findings from some studies which have used an experimental research design to evaluate whether the 'training' of university teachers does make any difference to teaching practices and students' learning is less than conclusive. For example Gibbs and Coffey (2004) examined the impact of training of university teachers on their approaches to teaching, teaching skills and on student learning. It was found that the training group became more student centred at the end of the training and their teaching skills were judged to have improved as judged by the students using a 'good teaching scale' on a module experience questionnaire. The consequence of this, while small, showed that students took a deeper approach to their learning.

However, another study (Norton *et al*, 2005) found the effect of teacher training in higher education to be questionable. This study used two groups: a group of 50 teachers who had taken a programme on teaching and learning in higher education and another group of 72 teachers who had no training. It was found that there was no significant difference between the two groups on scales measuring teaching beliefs and intentions. In a formative evaluation of 32 teaching and

learning programmes delivered by Higher Education Institutions (HEIs) that had been accredited by the HEA. Prosser *et al* (2006) found evidence that programmes of this kind can have a positive impact in helping participants become more student-focused and less teacher-focused. However this evaluation also noted differences between institutions with staff from post 1992 HEIs perceiving the programmes more positively than those staff from pre 1992 HEIs who valued research higher than teaching. As the researchers noted:

The pressure on new and inexperienced academic staff in establishing their careers is substantial, and whether the time and effort required to complete the programmes at the start of an academic career is appropriate was questioned. (Prosser *et al*, 2006, p.4)

It was also found that some Heads of Department had concerns about the amount of time staff should reasonable expect to undertake programmes in teaching and learning.

This issue of how long teacher training programmes should be has been commented upon by other researchers. For example with reference to short teacher training courses offered to GTAs at the University of Sheffield, Muzaka (2009, p.9) concluded that the 'sessions can hardly prepare GTAs with the pedagogic skills to deal with what awaits them in a classroom situation'. A Finnish study undertaken with 200 university teachers found that pedagogical training had an effect on teaching, both in terms of a conceptual change to a more student centred approach and stronger self-efficacy beliefs. However it was also suggested this type of training 'should be at least a 1 year long process' and that 'short courses may make teachers more uncertain about themselves as teachers'

(Postareff *et al* 2007, p.569). It was noted that prior to attendance at a short course, participants could have beliefs about their teaching practice which they were entirely comfortable with. However, attendance at a short teaching course had the potential to challenge these beliefs and lead to a realisation that the course participant may not be as effective a teacher as he or she had previously thought. What this suggests is that teacher development through training is likely to be a gradual process, and, for it to be effective, development opportunities need to be provided over an extended period of time (rather than a single intervention). Such an approach would be particularly relevant to those who are seeking to learn to be teachers with major opportunities to do so.

In the case of GTAs their situations may be very different. Indeed for many of this group, entering into the role of teacher is likely to be on a part-time and casual basis rather than a major opportunity to learn to be a teacher. Muzaka (2009, p.11) makes the observation that GTAs often have an 'ambiguous status' within their academic department with conflicting rights and responsibilities. For example concerns were expressed that the GTAs were being used as 'scapegoats' (p.7) for unsatisfactory teaching evaluations identified in student surveys. She concluded that:

It is for this reason that an (overdue) dialogue within departments and universities must take place in order to grant a formal and recognised status for GTAs within the UK higher education system as a whole and design a workable framework to sustain it. Only then can individual departments ensure that students are afforded the maximum benefit

from their learning process and that the GTAs do a good and satisfying job.

Unlike North America, where Park (2004) highlighted that the GTA is a long established position with many universities offering highly structured work-based programmes, support for GTAs in the UK is less established.

The UK Review of Postgraduate Education, *The Harris Report* (HEFCE, 1996. p.23) made the observation that:

Employment as a GTA....is a useful source of support for pg study, as long as GTAs - and indeed all other pg students who teach - receive appropriate guidance in teaching, and the institution ensures that duties are commensurate with the pursuit of pg study.

However Lineham (1996), in a study of postgraduates from 35 United Kingdom Geography departments found significant variation in both the quantity and types of teaching undertaken. This variation ranged from a few hours demonstrating to a full teaching load using a full range of teaching techniques (e.g. tutorials, fieldwork, seminars and lectures). The absence of formalised training for postgraduate teachers was identified as a problem for both the postgraduates themselves and for the quality of undergraduate teaching provision. The study concluded with a recommendation that institutional managers 'clarify their strategy towards the use of postgraduate teachers and provide appropriate institutional support structures in order to enhance teaching quality for all concerned' (p.107). In another study Goodlad (1997) analysed pre-workshop questionnaire returns from 282 science and engineering GTAs over a three year

period. These responses reported a number of consistent anxieties in pedagogic techniques and reached similar conclusions to those made by Lineham (1996) regarding the need for formalised training. However, the study also recommended that training should be 'interactive and experiential (rather than expository)' in its focus. The paper concluded that:

In essence, subject knowledge alone, (of physics, chemistry, biology, and so forth) is not enough; to feel comfortable with, and confident in, their roles as tutors, GTAs seek guidance on handling interpersonal situations and in explaining complex concepts, and highly interactive, 'hands-on' workshops seem to meet their perceived needs' (Goodlad, 1997, p.92).

The effectiveness of training support was also considered by Lueddeke (1997). This study found that many Departments had not identified GTA training as a priority for development. Looking beyond his own University, the author speculated as to whether many UK universities would have the resources necessary to conduct comprehensive GTA teaching support programmes of the type proposed in the Harris Review.

It was recommended that:

Universities might consider treating GTA training as a combination of pre-academic teaching preparation to be followed, once employed, by substantive pre/in-service teaching development programmes' (Lueddeke, 1997, p.149).

This theme was explored by Sharpe (2000). She proposed a framework for GTA development which distinguished between interventions with a focus on *survival* and interventions with a focus on *pedagogic processes and values*. With reference to interventions on pedagogic processes and values Sharpe (2000, p.140) argues that:

When starting to teach, GTAs often follow the model by which they themselves had been taught. They are likely to have based their teaching on a taken-for-granted 'theory' of teaching and learning. A major emphasis of this stage is on ensuring that participants adequately and critically reflect upon their teaching and learning experiences and make explicit some of the theoretical underpinnings.

While this observation highlights the significance that GTAs are likely to place on their own experiences as learners in how they understand teaching, it also suggests that GTAs may also benefit from being introduced to other models of learning and teaching with which they are less familiar. For example in critically reflecting on distinctions between teacher and student centred approaches to teaching. Sharpe's framework also resonates with a concern model of teacher development (Fuller, 1969) which conceptualises teacher development as a transition moving between uncertainties as to what to be concerned about (pre-teaching phase) to concerns about the self (early teaching experiences) to concerns about student learning (considered to be a desirable place to be).

From a trades union perspective, both the University and College Union (UCU) and the National Union of Students (NUS) view teaching opportunities of this kind as providing valuable income and experience of

employment. However they have also expressed concern about the casual employment of teaching staff with less favourable employment terms and conditions. For example, writing in the Newsletter of the UCU's Anti-Casualisation Committee, Debbie McVitty, NUS Postgraduate Research and Policy Officer, said:

University employment should be a positive experience for postgraduates, and they should have the level of support they need to carry out the job effectively, while still maintaining sufficient time for their own research. Postgraduate students are particularly vulnerable to unfair employment practice. For example, student teachers may be paid by the contact hour, not according to the hours spent teaching and preparing to teach. (McVitty, 2010, p.5).

This has led to the formulation of a new Charter for Postgraduates Who Teach, an initiative that includes demands for: fair and equal appointment procedures; a fair rate of pay for all hours worked; mentoring or line management by suitably qualified staff; feedback on performance and support for improvement; induction and initial training; support for appropriate continuing professional development; representation within the institution; integration into the professional academic culture; access to the necessary facilities and resources required to undertake the role and a reasonable balance between employment and research. While this initiative can be viewed as a positive development in raising the status of postgraduates who teach, it does have resource implications for universities, a factor which is likely to act as a major barrier to the full implementation of all parts of the Charter.

While the trades unions have raised concerns regarding employment conditions, other commentators have raised concerns regarding the quality of teaching being delivered. For example, Hopwood and Stocks (2008) have noted that the use of doctoral students as teachers may be problematic for the quality of institutional teaching, particularly where the doctoral student is new to teaching in higher education. This problem has been identified as being particularly acute when the individual is working in a new educational culture and teaching in a second language (Yule and Hoffman, 1990; Feezel and Myers, 1997). Park (2004, p.353) makes a similar point in highlighting that communication issues lie at the heart of many GTA concerns, with students, with their peers, and with academic colleagues, noting that these may be of particular concern to international GTAs who may be particularly susceptible to cultural miscues.

In summary, GTAs are, by tradition and often necessity, a key element in teaching provision in most Higher Education systems. In the current policy context of 'the student experience', good training is essential, but as Park (2004) has noted, much of this training is orientated towards generic teaching skills, because this is usually a cost-effective way of delivering training to large groups of aspiring GTAs. It is also based in a belief that every GTA should have a sound grounding in core skills. It is within this context that my own professional practice as an educational developer is located. The next section will provide an overview of what this means for me in respect to GTA development and how this led me to ask a number of questions that provided the basis for the study.

1.5 Professional context

My interest in this topic emerges from my own professional practice. I am employed at a university in the North of England as part of a professional services function in the academic related job of educational developer. This role involves supporting individuals across a wide range of disciplines on practice related to learning, teaching and assessment. In undertaking this role I have a responsibility to support individuals who work as occasional teachers, many of whom are postgraduate and postdoctoral researchers.

The university has approximately 800 research staff and approximately 1500 postgraduate research students and its policy states that these researchers should be allowed and encouraged to undertake a limited amount of teaching and continuous assessment work when appropriate, but should not undertake this without appropriate pedagogic training, some of which is provided by the professional services of which I am a part. As a result I am involved in the design, co-ordination and delivery of training across a diverse range of disciplines using a combination of classroom and online techniques. This support covers two areas of activity.

Firstly, this is through involvement in *GTA statutory training*. This is primarily directed at doctoral students and is designed to develop competencies, clarify roles and responsibilities, build confidence and facilitate networking opportunities. Aspects of teaching covered include: demonstrating in laboratories; assignment marking; giving student feedback; small group teaching; supporting student projects and giving lectures. This training is provided in the form of

workshops (either full-day or half-day) and each academic year (September to June) over 150 doctoral students from a variety of disciplines participate in this support. Participants are asked to fill in workshop evaluation forms at the end of each training session and (in the main) satisfaction with the actual workshop experience (the trainers and the active learning approach) is positive.

The second area of activity involves the co-ordination of a 10 week programme for individuals who wish to obtain a teaching qualification. This qualification is open to both postgraduate and postdoctoral researchers and involves completing a series of assessment tasks that includes micro-teaching, teaching observation, giving feedback and case study analysis. The qualification is accredited by the Higher Education Academy (HEA) and upon successful completion participants are eligible to become Associates of the Academy and use the post nominal AHEA. Since its introduction demand for the course has exceeded places available (there is currently a waiting list). As of February 2012, 135 Research Staff and Postgraduate Research Students have successfully completed the course. Course evaluations suggested that accreditation by a recognised professional body makes it attractive and beneficial to participants' professional development aspirations. Through my professional role therefore, the idea for the study emerged.

Although I am directly involved in the training as part of a central support function, I am in many ways divorced from the various teaching contexts that postgraduate and postdoctoral researchers encounter throughout the university in their respective departments. Prior to undertaking this study I knew very little of what learning of value might be derived from GTA teaching opportunities. As

someone with many years of teaching experience myself I thought this might be considerable offering a valuable 'taster' for many aspects of academic life and influence career aspirations. I also thought it likely that the working environments of the GTAs would vary significantly and that this is an important factor that would shape the quality of this learning. Adding to this understanding therefore provided the starting point for the study, prompted partly by an intellectual curiosity and partly by a motivation to inform an aspect of my professional practice. The aims of the study are therefore as follows:

- To develop an understanding of the learning about academic practice that postgraduate and postdoctoral researchers develop through teaching experiences.
- To develop an understanding of factors that can facilitate or inhibit this learning.
- To consider the implications for my own professional practice based on what I have learned.

The investigation was therefore action orientated, in the sense that a) I studied my own practice in order to improve it, and b) I proposed to use what I was learning to inform institutional policy concerning the development of postgraduate and postdoctoral researchers as teachers. However in doing so, I also recognised the need for conclusions to be drawn from the research which would have implications beyond the bounds of the particular events, customs or people studied and which would contribute to an improved theoretical understanding about the relationship between teaching and academic development for early career researchers.

This aspiration is based on two assumptions. Firstly, that many doctoral students and postdoctoral research staff will have opportunities to undertake some form of university teaching. Secondly, that the work involved in teaching will be the source of *informal learning* that is situated in practice. Informal learning has been characterised by Eraut (2004, p.250) as learning which is 'implicit, unintended, opportunistic and unstructured' and which takes place 'in the absence of a teacher'. However, for a researcher confronted with these characteristics, trying to make sense of informal learning that is situated in practice is likely to be a challenge. As Eraut has noted, 'informal learning is largely invisible because much of it is either taken for granted or not recognised as learning' (2004, p.249).

1.6. Overview of thesis

To address the aims of the study the thesis is organised into the following chapters:

Chapter 2 provides the study with its theoretical underpinning and the establishment of the current knowledge base. This review enabled me to refine the aims of the research into 3 questions.

Chapter 3 provides an account of and justification of the research design that was used to answer the research questions. The design used is interpretive research that involved a visual method which has been referred to in the literature as *photo-elicitation* (Banks, 2007).

Chapter 4 reports on the findings emerging from the interpretive research undertaken. The findings are organised into key themes, with each of these themes being located against the research question which it is addressing. Presented within each theme are my interpretations of what was said to me together with the evidence to support this interpretive claim. This evidence is presented in the form of quotations and presents the reader with a nuanced version of differences as well as similarities in the GTAs' perspectives of their teaching roles.

Chapter 5 interprets the findings from the study. The discussion is organised into 3 parts with teaching conceptualised: as a bridge to the development of disciplinary knowledge; as a bridge to the development of interpersonal skills; and as a bridge to the development of professional attitudes and habits. The second part of the chapter then discusses what was revealed about the factors that could either help or hinder postgraduate and postdoctoral researchers to *cross the bridge* and maximise the full learning potential from their teaching experiences.

Chapter 6 reflects on the achievement of the aims of the study. The chapter is organised into 3 parts. The first part reviews new understandings I have developed as a result of undertaking the study, while the second part considers how this new learning has informed my professional practice at the university where the study was undertaken. The chapter concludes by reflecting on how undertaking a Doctorate in Education has led to my own development as a researcher, the limitations and strengths of the study, and further areas for research.

Chapter 2: Literature Review

2.1 Introduction

Chapter 1 examined policy initiatives to promote researcher and teacher development at UK Universities and situated my own role as an educational developer supporting GTAs as a product of this policy context. It was highlighted that the GTA occupies an ambiguous status within Higher Education systems with many GTAs entering into the role of teacher on a part-time and casual basis. While training is normally provided to GTAs this has tended to be done cost-effectively through generic short courses, the value of which to longer term academic development is likely to be limited. However it was also highlighted that opportunities to teach are likely to provide the GTA with access to another kind of informal learning that is situated in the practice of work. The point was made that much less is known about this type of learning, and how it might shape both an individual's understanding of academic work and their aspirations towards an academic career. Within this context the purpose of this chapter is to provide the study with a theoretical underpinning, the establishment of the current knowledge base and the development of the research questions of the study.

The chapter begins by reviewing a number of theoretical perspectives that can be used to provide insights into how an individual's development may take place in the workplace. These theories highlight the significance of social interactions to workplace learning and are based on a view that human development (e.g.

learning from teaching) develops out of social interaction and that this development cannot be understood by a study of the individual alone.

The theoretical perspectives discussed are:

- Dynamics of role acquisition: Thornton and Nardi (1975)
- Communities of practice: Lave and Wenger (1991)
- Professional identity: Ibarra (1999)
- Expansive and restrictive participation: Fuller and Unwin (2003)
- Professional Learning: Eraut (2007); Knight *et al* (2006, 2007)
- Developmental networks: Higgins and Kram (2001)

Discussion then moves on to consider a number of studies which have investigated this socialisation process in the context of graduate education where opportunities to teach forms part of the experience. This review highlights agents of socialisation and learning outcomes derived from the process. Discussion concludes by identifying gaps in the existing knowledge base. These gaps provide the basis for the research questions of the study.

2.2. Literature search strategy

The literature review was undertaken using libraries at both the Open University and at the university where I work. These gave me access to a wide range of online journals, e-books, research reports and databases, most notably EBSCO Academic Search Complete, a multi-disciplinary full-text database, with nearly 6,000 full-text periodicals, including more than 5,000 peer-reviewed journals. This allowed for searching using key word phrases and enabled me to easily identify

how many times a particular publication had been cited by other literature in the database.

I began searching with the phrases 'Graduate Teaching Assistant' and 'Informal and Non-Formal Learning' and initially narrowed the search to literature published in the last 10 years. From this I was able to identify frequently cited literature which might be of relevance to my study.

I chose literature where the author (s) showed awareness of developments in the field through their own use of literature. This process also helped me refine my own search strategy and directed me to review literature that had been published prior to January 2000. From this I was able to identify key writers and particular theoretical perspectives which I considered would help me develop an understanding of the research topic. In the case of research reports chosen I also based my selection criteria on literature where I had confidence in the validity of the methodology used and the results presented. This literature also provided me with illustrations of the kinds of methodologies that might be appropriate for this study. As part of the literature review process I used *RefWorks*, a web-based reference management package which enabled me to organise, store and retrieve literature in the form of citations and bibliographies.

2.3 Role socialisation

Interest into the ways in which individuals learn about workplace roles is a longstanding area of academic enquiry. For example Merton *et al* (1957, p287) conceptualised role socialisation in the workplace as the:

processes through which [a person] develops [a sense of] professional self, with its characteristic values, attitudes, knowledge, and skills which govern [his or her] behaviour in a wide variety of professional (and extraprofessional) situations.

This perspective views role socialisation as a rational linear process through which newcomers learn about the organisation. However, other researchers have highlighted that the acquisition of workplace roles may not be entirely one-way, but rather dialectical in nature (Thornton and Nardi, 1975). In other words individuals may not necessarily conform passively during the socialisation process but may seek to modify the role and patterns of behaviour they are seeking to acquire. Austin and McDaniels (2006, p.401) have argued, for example, that 'as newcomers learn about the organization, their presence and interactions with members change the organisation as well'.

Considering the process in more detail, Thornton and Nardi (1975) provided a model of the stages individuals go through to acquire social roles. Conceptualising role acquisition as a developmental process, four stages were identified: anticipatory, formal, informal and personal. The anticipatory stage is presented as the stage prior to an individual taking up a role. During this stage it was theorised that an individual has a range of conceptions as to what a role will entail and that an important source of these expectations would be through what they termed 'generalized sources' (Thornton and Nardi, 1975, p.874). Examples of these generalised sources could be located in areas such as the mass media or through an individual's prior learning. The researchers used the example of a future physician's contact with the family doctor to illustrate this point. However, they

also argued that these generalised sources would often only provide individuals with a partial insight into what the role will entail and may lead to idealised versions of roles where 'anticipation may not be congruent with what will actually be experienced' (Thornton and Nardi, 1975, p.875). This is considered significant to the present study as it raises an interesting question as to when these partial insights about the role of teacher might begin.

The formal and informal stages of the Thornton and Nardi (1975) model begin when an individual takes up a role rather than views it from the outside. During the formal stage the individual may be presented with a codified set of expectations, for example documentation for new employees. It is argued that initially an individual will conform to these expectations rather than seek to modify them until they have a better understanding of the role. This observation is based on the earlier theorising of Goffman (1961, p.130) who noted that 'it appears that conformity to the prescriptive aspects of a role often occurs most thoroughly at the neophyte level, when the individual must prove his competence, sincerity, and awareness of his place'. Thornton and Nardi (1975, pp. 877-888) termed this the *period of adjustment* and described it as follows:

Psychologically, adjustment occurs through postponement of reactions to roles and situations, often by playing at roles rather than truly enacting them..... It is only later that one's personal reactions to the role become established and real adjustment and adaptation occurs.

On the other hand, informal processes in role acquisition are those which are not written down and are conveyed through interaction with individuals. The example provided by Thornton and Nardi (1975, p.878) concerns when it is 'safe'

not to comply with formal expectations of the role and uses the following extract to make their point:

It is through informal systems that a new secretary knows how long a coffee break she may take, a college professor knows what unofficial restrictions there may be on what he wears to class, and any new employee learns when company rules may be bent. It is also through these that one learns which co-workers may be treated in certain ways, which attitudes and emotions are to be displayed on which occasions, and, even, which are the 'proper' values to hold.

Moreover, Thornton and Nardi (1975, p.878) theorised that there will be fewer consensuses as to what these role expectations may be, observing that 'various groups and individuals tend to present differing informal expectations, which may be in opposition to formally expressed ones'. This resonates with a similar point made by Eraut (1994, p.68) who argued that attempts to codify workplace learning has limitations as many of the problems encountered in practice are 'inherently messy' and need to make use of what he terms *practical knowledge* in addition to *technical knowledge*. He states 'technical knowledge is capable of written codification; but practical knowledge is expressed in practice and learned through experience with practice'.

The final stage of the model introduces a psychological dimension into the role acquisition process. This is referred to as the personal stage to highlight that an individual will bring to a role his or her personality, past experiences, knowledge and skills, values and beliefs. It is theorised that these personal factors may or may not be congruent to the expectations the role has of the individual. This

adjustment is conceptualised as a form of reconciliation between self and role enactment. As Thornton and Nardi, (1975, p.882) noted:

It is then that individuals, now familiar with new positions and their requirements, modify and mould roles around personality characteristics and the demands of other roles and achieve some balance among conflicting expectations.

This point is developed by Austin and McDaniels (2006, p.404), who argued that, when adjustment or congruence happens, individuals begin to 'act like role incumbents, their personal identity becomes increasingly integrated with their professional identity.'

This notion of identity development as an outcome of role socialisation process will now be considered in more detail and will be done in the first instance by reviewing the work of Lave and Wenger (1991), Lave (1996) and Wenger et al (2002) and their concept of communities of practice.

2.4 Communities of practice

Drawing on ethnographic research into the ways in which working practices developed amongst a range of different occupational groups (midwives, tailors, quartermasters, butchers), Lave and Wenger (1991) developed a conceptual framework to provide an understanding of how learning could develop from participation in practice. The theoretical focus of this work is on the nature of learning as experienced through interaction with others in a particular context. This kind of learning is conceptualised as emerging from a process of legitimate

peripheral participation in communities of practice, the organic nature of which is captured by Fanghanel (2009) when she states:

In a Community of Practice framework, learning is examined as occurring through progressive *legitimate participation* into the activities of the group. This model of learning is akin to a cognitive apprenticeship model where novice learners observe, question, and listen to experienced colleagues to acquire knowledge of a field (p.196).

It is theorised that within these communities there exists a 'living repository of knowledge' that can offer value to community members both in the short and long term, but that access to this knowledge will only be fully achieved when an individual participates fully with other members of the community. Short term benefits identified as part of this knowledge repository include: help with challenges, access to expertise, confidence and a sense of belonging. Long term benefits identified include: the development of networks, enhanced professional reputation and the development of a strong sense of professional identity (Wenger *et al*, 2002, p.16).

Lave and Wenger's idea of a community of practice is of interest to this study as it suggests a kind of knowledge for GTA development that is tacit and which exists only through the practices passed on from senior to junior colleagues. For example, with reference to the ways an individual may learn the skill of assessment, Arnal and Burwood (2003, p.383) have argued that:

Academic assessors do not learn which assessment criteria are appropriate for any given piece of work in any particular context by

looking them or their specific applications up in a book and then mechanically applying them; they have to be acquired by practice.

Similar arguments have been made by Sadler (1989) and Nicol and MacFarlane-Dick (2006) who also highlight the importance of a dialogue between novice and expert to develop a shared understanding of gaps in practice performance. In the case of doctoral education, Boud and Lee (2005) highlight the fact that a student has the potential to access knowledge in multiple and overlapping communities of practice, such as research teams, formal conferences and events, and informal reading and writing groups. They argue that each of these overlapping communities will provide a potentially powerful pedagogic space for peer learning and new identity development. In effect this provides sites of learning where research students can learn to be 'peers of a particular (new) kind' (Boud and Lee, 2005 p.513).

As a consequence of this potential, Lave and Wenger's theorising has therefore proved to be highly popular in shaping constructivist models of instruction (Lea, 2005). Within such a framework the tutor undertakes the role of a facilitator, designing and supporting environments which will engage learners in knowledge construction through collaborative activities. However in evaluating the use of communities of practice as an educational model, Lea (2005) concluded that this has been done in a largely uncritical way and is based on the assumption that communities are somewhat benign in character where the participant's journey from the periphery to full participation is a relatively straightforward endeavour. She argues that such an assumption fails to take into account the possibility that some individuals might not integrate themselves fully into a community of

practice, either through uncertainty or through an unwillingness to embrace the nature of knowledge that is embedded in practice.

This argument is supported by evidence from a number of studies that have sought to understand the acquisition of technical expertise and cultural integration within professional occupations such as medicine (Lyon, 2004) and craft apprenticeships (Fuller and Unwin, 2003; Taylor and Watt-Malcolm, 2007).

In the case of medicine, Lyon (2004) used the model to understand the different experiences of new medical students on clinical placements in the operating theatre. Interestingly it was found that, for many of the trainees, the potential learning to be gained from the placement was not realised with many students disorientated and intimidated by the environment, uncertain of their role and questioning of their legitimacy as part of the surgical team. This raises the possibility that GTAs may experience similar doubts.

In another study, Fuller and Unwin (2003) undertook research into the lived experiences of apprentice steelmakers. This work found that while all the apprentices were on the same national apprenticeship programme, the quality of the learning experienced by apprentices within different communities of practice varied significantly according to the institutional arrangements that were in place. Fuller and Unwin conceptualised this variation as resulting in either expansive (positive) or restrictive (negative) forms of learning opportunities. Of some interest to this study was the observation that, to facilitate expansive learning opportunities, certain enablers provided by the organisation needed to be in place. These enablers included ensuring learners had access to a range of communities of

practice both inside and outside the workplace; that there should be a gradual transition to full participation in these communities; and that this process be supported by a named individual acting as a dedicated support person.

Furthermore a learner should have access to a range of qualifications and that there should be in place a post-apprenticeship vision in terms of progression for a career (2003, p.411).

While these studies therefore illustrate the potential of communities of practice to understand some of the nuances of learning through participation in practice, the extent to which the concept can also be applied as a heuristic to understand the more ill defined, less structured encounters GTAs have with practice is less certain. Unlike the situations confronted by individuals seeking entry into the professions or trades, postgraduate and postdoctoral researchers' encounters with teaching can be characterised as occasional ad-hoc activities, undertaken in addition to normal research responsibilities. While it is possible that these experiences will offer a valuable 'taster' for many aspects of academic life and may influence career aspirations, the situation of a GTA is likely to be different to the world of an individual who has chosen to enter a particular profession or trade.

The concept of communities of practice is also limited by its under theorising into how things might work around the margins of a community with little explanation as to the significance of the role of a GTA's agency to community of practice engagement. Indeed it is reasonable to assume that there may be a lack of consensus between a GTA's own beliefs about teaching and its significance to their development, and those of the particular teaching community a GTA encounters.

In these situations GTAs will need to make sense of the teaching situations that confront them, a process Mendoza (2008) conceptualises as 'an effort to tie beliefs (frames) gained from previous socialisation processes with actions (cues) in the present' (p.106).

This relationship between agency and the situations that confront an individual has also been considered by Trowler (2009) through the concept of a Teaching and Learning Regime (TLR). Building on Lave and Wenger's ideas about learning as participation in practice, this perspective deconstructs the range of cultural influences that may impact on an individual entering into a particular teaching and learning setting. These influences are theorised as comprising a series of disciplinary *moments* that individuals encounter through their lived experiences with practice. For example an encounter with practice that is performed habitually because 'this is what we do around here' (2009, p.189). Trowler argues that these *disciplinary moments* give a particular context 'a unique configuration' that is shaped by forces both at the macro level (e.g. university policy agendas) and at a micro level by the characteristics, biographies, beliefs and behaviours of those individuals who form part of the TLR (2009, p.186). These moments therefore become the basis for directing analysis towards areas of congruence (or lack of) between an individual's beliefs and the situation they encounter. While this approach may have some value in understanding the learning experiences of GTAs, Fanghanel (2009) has noted that TLR theory does not specifically analyse the ways individuals interact with the disciplinary moments or indeed their relative significance.

This theme of situation engagement has been explored by Roxa and Martensson (2009) who make the point that new teachers are likely to be selective in their engagement with practice, and interact with only a limited number of dimensions of a new culture to construct a conception of a particular teaching situation. They argue that 'the teacher will base his or her decisions on this conception, rather than all aspects available.' (2009, p.548). The particular focus of their work was to examine academic communication and, in particular, the conversations teachers have with colleagues about teaching, and to assess the significance these conversations can have in shifting conceptions about teaching. Based on survey data with 106 teachers from 3 disciplines (Engineering, Social Sciences and Humanities), they found that most teachers rely on a relatively small network of colleagues who can shape their conceptual development about teaching. These are conceptualised as *significant conversations* which are characterised by trust, an intellectual dimension (such as problem solving or idea testing), and privacy. Moreover, in addition to shaping conceptual development about teaching, it is theorised that these conversations will have an impact on an individual's perception of their own identity. Roxa and Martensson state:

The individual may expand his or her identity into something which offers new possibilities, both in his or her teaching practice, but possibly also in more official disciplinary and departmental discourse (p.555).

This notion of identity development as a form of learning, and the processes through which it takes place, is considered highly relevant to a study examining the kinds of learning a GTA may derive from their teaching experiences. It is also

a particular feature of the work of Lave (1996) and this will now be explored in more detail in the next section.

2.5 Professional identity

The notion of identity development through participation in communities of practice has been considered at some length in the work of Lave (1996) and is based on a study of apprentice tailors in Liberia and Timothy Mitchell's anthropological study of legal learning in Egyptian mosques (Mitchell, 1988). Drawing on her own study and Mitchell's work, Lave (1996, p.155) came to the conclusion that participation in these traditional apprenticeships offered more than simply a means to replicate an existing practice such as trouser-making, but also provided the context where a particular identity was formed which in the case of her own study (becoming a tailor) was considered a desirable aspiration amongst the apprentices studied. She noted:

The result, for very poor people who might be expected to experience their lives and themselves as miserable in all senses of that word, was a strong sense of their worth and self-respect.....Eighty-five percent or more who started as tailors' apprentices finished, and continued their practice as tailors.

From this observation Lave highlighted the importance to study specific aspects of practice (using ethnographic approaches) to understand what is being learned (with a particular emphasis on identity construction) and how this is learned.

The idea of identity construction as being an important outcome of the socialisation process is explored further in the research of Ibarra (1999). In a

different context Ibarra (1999) examined the identity development of business professionals. In this work professional identity is defined as 'the relatively stable and enduring constellation of attributes, beliefs, values, motives and experiences in terms of which people define themselves in a professional role' (Ibarra, 1999, pp.764-765). She argued that a strong professional identity is beneficial for future career development, particularly during the early stages, as it enhances self knowledge and awareness. However, Ibarra also noted that identity construction is a fluid process and that identities may not be fully formed, particularly during periods of career transition and theorises this as individuals having provisional selves. Ibarra (1999, p.765) describes these as 'images that serve as trials for possible but not yet fully elaborated professional identities'. Moreover it is argued that the formation of these images is an iterative process based on 'varied experiences and meaningful feedback that allow people to gain insight about their central and enduring preferences, talents and values'. Ibarra (1999, p.774) refers to this process as role prototyping and role matching and explains the process as follows:

By role prototyping, people add ingredients to their repertoires for possible selves that are defined externally, by the organisation and role incumbents. By identity matching they personalise their repertoire i.e. select certain models as exemplars or desirable or undesirable possible selves and mark certain routines for more or less likely successful adoption.

Ibarra theorizes that having built up a repertoire of possible selves, individuals then go on to try out and evaluate these possible selves (she uses the term experiment). Drawing on her grounded theory study of career transition in

professional service work, four aspects of this process are highlighted: the observation of others, experimentation with practice, external feedback and what Ibarra (1999, p.765) termed 'their own affective reactions e.g. did I act like the person I want to become?' All were identified as key agents of professional identity construction. The reaction of others in validation endorsing or not endorsing the new identity is of particular interest as this resonates with other models of professional learning in the workplace which have as their focus the ways in which people might learn from other people in the workplace. These models will now be reviewed.

2.6 Professional learning

The ways in which professionals might gain insight about their preferences, talents and values from other people in the workplace can be located in research undertaken by Michael Eraut, a synthesis of which is provided in Eraut (2007). This research was based on a three year longitudinal study of early career professional learning at work with newly qualified nurses, graduate engineers seeking chartered status and trainee chartered accountants. Using an ethnographic methodology which used observation of practice followed by interviews, a detailed typology of process and activities through which early career learning in the workplace could be constructed. Eraut (2007, p.409) identified three categories of processes and activities. First, what he termed '*work processes with learning as a by-product*'. This included: participation in group processes; working alongside others; consultation; tackling challenging tasks and roles; problem solving; and working with clients. Second, what he termed '*learning activities located within work or learning processes*'. This included: asking questions; locating resource people;

listening and observing; reflecting; learning from mistakes; giving and receiving feedback; and the use of mediating artefacts. Third, what he termed '*learning processes at or near the workplace*'. This included: being supervised, coached or mentored; shadowing; visiting other sites; conferences; short courses; working for a qualification and independent study.

Having developed this typology, Eraut (2007, p.415) theorises that many of these activities will take place in 'short opportunistic episodes' which will result in learning of a variable quality. For example with reference to the activity of listening and observing he noted that:

Activities are very dependent on what the observer/listener is able to grasp and comprehend; and comprehension depends on awareness of the significance of what has been said and/or done. Such awareness and understanding is developed through discussion and *reflection*.

Drawing on the ideas of Schutz (1967), he argues that something needs to happen to the continuous flow of experience lived by individuals in the workplace to induce something we can think of as learning. Schön (1983) has argued that reflection is the process through which tacit knowledge can be made explicit, a position that has made popular the idea of the professional learner as a reflective practitioner. Such a view subscribes to the cognitive theory of learning in its advocacy that an individuals' knowledge of the world is primarily the product of thinking activity. For example teachers can be encouraged to evaluate their own classroom performance in conjunction with student behaviours, performance and achievements as a way of improving the quality and effectiveness of their work. Sharpe (2004, p.139) likened this to a form of '*professional artistry*' with individuals

considering both what is happening at the time of a work-based experience (reflection-in-action) and considering the experience of it after the event (reflection-on-action). However inherent in this approach is the assumption that there will be some form of conscious activity on the part of the learner to engage in reflective practice. While this may be more likely with learners who are undertaking formalised learning, where some form of structured reflection on practice is often encouraged, reflection on experience may be less likely for those who are not directed to make such a conscious effort.

A further point is made by Zukas (2006) (based on her research with schoolteachers). She argued that putting the focus on the individual as 'the location for learning' who is 'able overcome any problems' may not be the most appropriate approach for many individuals. Eraut (2007) therefore recommends taking a more holistic approach and identifies a series of factors which can affect the quality of workplace learning. Two categories are identified: *Learning Factors* (challenge and value of the work, feedback and support, confidence and personal agency) and *Context Factors* (allocation and structuring of work, encounters and relationships with people at work, individual participation and expectations of their performance and progress). It is argued that managers need to exert influence over these factors to enhance learning to develop what Eraut (2007, p.420) calls a 'learning organisation'. He argues:

The quantity and quality of learning can be enhanced by increasing opportunities for consulting with and working alongside others in teams or temporary groups. Both being over-challenged, like some of the nurses in the first few months, and being under-challenged, like

several engineers, is detrimental to learning and bad for morale. Both issues can be tackled by giving greater attention to the allocation and structuring of appropriate work.

While the work of Eraut was undertaken with engineers, nurses and accountants, another study into the experiences of teachers (Knight *et al*, 2006, 2007) provides further helpful insights in learning in the workplace. This research suggested that role development extends beyond simply providing an infrastructure of support, important as this may be. Effectiveness in the role is also influenced by how the individual identify with the role they are undertaking. This theory was developed from two studies into the professional formation of part-time university teachers. The first of these was a study of 2401 tutors working for the Open University where it was found that the main influence on professional formation as a teacher was through social and non-formal practices in the workplace. This finding was supported by a second qualitative study of 33 part-time teachers from different universities. In this study two important themes emerged with regards to professional formation. The first of these was the importance of the respondent's academic environment, and in particular their 'engagement with other colleagues' (Knight *et al*, 2007, p.421). The second was the part-time teachers' own histories as learners. It was noted that 'much of the informants' practice (and the learning behind it) was derived from their own experiences as students'. These were identified as 'powerful' influences on practice, and potentially more influential than any learning likely to be embedded within current teaching roles.

Drawing on these findings the researchers conceptualised professional learning as an *ecological process* which emphasised the part played by the everyday workplace experiences in the part-time teachers' academic environment and on the own histories and identities that they bring to these environments. From this perspective four possible trajectories for part-time teachers were identified and these were offered as a framework for institutional and department managers to reflect upon regarding the way they utilise this category of staff. These trajectories were identified as follows:

- *Slotting in* – there are few opportunities for interaction and the part-time teacher simply fills a teaching slot in the programme for a fee
- *Assimilation* – the emphasis is on the practitioner adopting departmental or team practices
- *Accommodation* – the academic workplace incorporates the practitioner's special expertise
- *Reciprocity* – there is explicit negotiation over the part-timer's anticipated contribution, role and the support available.

Knight *et al* (2007, p.432) concluded that 'those wishing to influence professional formation and secure greatest benefit for the university have an interest in considering how environments can favour the third and fourth trajectories'. This recommendation is considered to be particularly relevant to the current study as entering into the role of teacher is likely to be on a part-time and casual basis rather than to be a major opportunity to learn to be a teacher. This research also highlights the significance of professional learning arising out of everyday practice, irrespective of formal training provision. As Knight *et al* (2007, p.421-422)

have noted, 'this learning is pre-dominantly non-formal, often non-intentional, largely social and very much practice based'. A similar point was made much earlier by Darling and Dewey (1990, p.315), who argued that 'learning to teach at university level is a process of trial and error learned largely through the shared knowledge and experimental base of experienced teachers, as well as through personal experience in the role' (p.315).

The next section will now consider this process of sharing knowledge in more detail by examining the role of mentoring and networks to an individual's development in the workplace.

2.7 From mentoring to developmental networks

The contribution of mentoring to an individual's development at work, particularly during the early stages of a career, is prominent in the literature. Traditionally viewed as a dyadic relationship, Ehrich et al, (2004, p.519) define a mentor as a 'figure who sponsors, guides, and develops a younger person'. In a study of 18 mentor/mentee relationships in a corporate setting, Kram (1983, p.608) found that a mentor 'can significantly enhance development in early adulthood'. In this study a number of developmental functions were identified which were distinguished as being either career or psychosocial focused. Career functions were identified as aspects of the mentor-mentee relationship that were about enhanced career advancement, and included activities such as mentee sponsorship, protection, and coaching. Psychosocial functions were identified as aspects of the mentor-mentee relationship that were about enhancing a sense of competence, clarity of identity, and effectiveness in the role. Activities identified

as supporting this function included role modelling, confirmation and friendship (Kram, 1983, p.614).

Kram (1983, p.622) conceptualises this as a linear model following four stages: initiation, cultivation, separation and redefinition, which is defined as 'an indefinite period after the separation phase, during which time the relationship is ended or takes on significantly different characteristics, making it more peer like friendship'. However, when examining the extent to which mentoring as an activity fulfils its developmental potential the literature suggest that formal mentoring programmes have both positive and problematic outcomes for both mentor and mentee. For example, in a review of some 300 research studies that examined formal mentoring programmes in education, Ehrich *et al* (2004, p.536) came to the conclusion that mentoring was not 'without its dark side' and that that in some cases 'poor mentoring can be worse than no mentoring at all'. Moreover, it was argued that formal mentoring programmes should not be 'the consequence of some chance event' and should be planned (using the literature), resources and evaluated.

This resonated with the conclusions of an earlier study by Wood (2001) which found that the success of a formal mentoring programme depends on how well prepared the mentors are to undertake their role. This research conceptualised three different types of mentor (induction mentor, subject mentor and career mentor) with each type requiring a different set of skills to help protégés understand the institution, develop their professional practice or take responsibility for their own development. It was argued that the successful

enactment of these skills required the training and development of mentors to be adapted accordingly. Cunningham (2007, p.86) also identified the importance of mentors in supporting the development of new teachers but argued that 'for mentors to be effective within an organisation, the individuals involved need to be working within a certain architecture that supports rather than constrains their role'. Three components of this architecture were identified: the ability of an institution adequately to motivate staff to undertake mentoring; the necessity to put in place effective induction and support systems for mentors; and necessity to put in place mechanisms for evaluating the outcomes of mentoring, so that it can be ascertained where a system is succeeding and where it needs further refinement. Mathias (2005) makes a related point in a study of mentoring at a research-led university where it is argued that formalizing the mentor role gives it status. In this example the mentors studied had roles which went beyond those of a critical friend and served to act as a formal assessor for new lecturers undertaking a teacher development programme as part of their probation. He concluded that this resulted in a 'positive backwash of increased ownership and responsibility in disciplinary communities of practice in the initial development of new university teachers' (Mathias, 2005 p.104).

However, other researchers have identified problems with formal mentoring programmes. For example, Angelique *et al* (2002, p.196-198) argued that traditional mentoring often leads to the preservation of the status quo, particularly in relation to power dynamics of working relationships. The characteristics of the relationship are described as follows:

The mentees are generally mentored by the more powerful faculty of the institution. The mentor retains control of the power until the mentee is able to stand on his/her own, generally upon receiving tenure. Then the process begins again: the former protégé becomes a mentor for a new faculty member.

The researchers recommended an alternative approach based on creating peer communities of naturally occurring relationships (a process they term 'musing'). They argued that individuals supported this way had a better chance to 'develop as change agents in the institution, instead of assimilating into the existing systems'.

Another less traditional collective approach, termed mentoring circles, is reviewed by Darwin and Palmer (2009). This approach involved a mentor working with a group of mentees or groups of people mentoring each other (the circle).

Evaluating a mentoring circle programme over a 6 month period it was found that this approach offered the particular benefit of addressing any feelings of isolation that a mentee may be experiencing. As the researchers noted:

What they said post-programme was that the greatest benefits came from interacting with others and sharing experiences.....a major theme from participants was the growing isolation that occurred at the University and there was a nostalgia from some for 'the good old days' when academics used to interact with each other more often. Senior managers need to take this finding into account' (Darwin and Palmer, 2009, p.134).

Informal mentoring arrangements where the mentor and mentee establish a relationship naturally without any guidance has been highlighted by a number of researchers. For example, Cross and Armstrong (2008, p.608), in a study examining the role networks of 20 female managers, found that finding a mentor informally is important to career development and that such a strategy is often learned incidentally 'to and by other women in their informal female networks'. Moreover the importance of these informal arrangements forms the basis of an important concept in the mentoring literature: developmental networks. This has been defined by Higgins and Kram (2001,p.268) as 'the set of people a protégé names as taking an active interest in and action to advance the protégé's career by providing developmental assistance'. It is argued that individuals will receive developmental support (career/ psychosocial) from a range of people at different points in time, none of whom will be conventionally defined as mentors. Examples include family, friends, peers, as well as colleagues at work. Two important dimensions of a developmental network are identified: network diversity (the number of different social systems that are important to a protégé) and relationship strength. This is conceptualised as the emotional and communication ties between protégée and developer. Higgins and Kram (2001, p.269) theorise that 'relationships with strong interpersonal bonds will be characterised by reciprocity, mutuality, and interdependence.....and tend to be highly motivated to help each other'.

Dobrow and Higgins (2005) theorised that developmental networks provide a meaningful resource to provide insights into professional identity exploration, particularly during the early stages of a career, as an individual's network can

enhance self knowledge and awareness. Certainly the findings from their own longitudinal study into the developmental networks of 136 MBA students over a 5 year period support this point of view. Dobrow and Higgins (2005 p.567) concluded that 'people might be able to improve their careers through changing their developmental networks, particularly during their early-career years'.

In an appraisal of the developmental network perspective, Baker and Lattuca (2010, pp.812-818) noted that the approach may be particularly applicable to the study of doctoral students given the variety of relationships they are likely to have and the mediating role that more skilled individuals play in their learning and development. They make this point as follows:

A developmental network view will explore a graduate student's interactions with many individuals, both in personal networks and in the educational community. They may examine, for instance, interactions among peers in the cohort, in the academic department, with faculty in courses and outside formal educational settings, and even with family and friends who are outside of the academic discourse community but who are important to the individual.

This point is of particular interest as it highlights the likely influence of a range of groups (colleagues, student peers, family and friends) all of whom have the potential to contribute to the individual's acquisition of professional knowledge and help them develop a professional identity.

Discussion will now explore this theme more fully by reviewing a number of studies which have investigated the socialisation process in the context of

graduate education where opportunities to teach forms part of the experience.

This review highlights what is known about the different agents of socialisation and the potential learning about academic work that may be outcome from the process.

2.8 Graduate education: agents of socialisation

Writing about the purpose of graduate education Austin and McDaniels (2006, p.415) have noted that it:

Must simultaneously teach prospective faculty about the expectations they face, the responsibilities they must assume, and the traditions in which they will participate, while also inviting into the academic profession the perspectives, habits, and ideas of a wide diversity of individuals.

This process has been modelled by Clark and Corcoran (1986) who placed the graduate experience as part of a 3 stage model of academic socialisation. The first stage *anticipatory socialisation* involves the recruitment of an individual who chooses an area of study, and will gradually assume the values of the group to which he/she aspires. The second stage *entry* is characterised by individuals participating in *formal schooling* for chosen academics roles through mediated activities such as publishing, presenting at conferences, submitting a dissertation. Clark and Corcoran (1986, p.26) place particular emphasis during this stage on the strategy of sponsorship (similar to mentoring), where there is at play an 'advancement of a favoured protégé... through the informal norms of the workplace and/or discipline' This stage also provides socialisation for subsequent

academic roles, leading to stage three which is termed *role continuance*. As Clark and Corcoran (1986, p.23) have noted:

If all proceeds well, the third stage of role continuance is achieved. The new member has a set of internalized role specifications, a sense of satisfaction with work, and a high degree of job involvement and commitment. She or he is carried along within the structure of the career to later stages, which may involve the maturing, more independent professional in sponsoring, socialization, or other organizational leadership roles and generative activities.

The second stage of the Clark and Corcoran model is of particular relevance to this study and a number of studies have examined the mediating activity of teaching as part of the socialisation process. For example, Kirk and Todd-Mancillas (1991) considered what they termed 'turning points' that would encourage graduate students who were undertaking teaching to pursue an academic career. Turning points were identified as experiences that positively or negatively impacted on socialisation to a role, for example feedback from students or colleagues. Based on data from 29 GTAs three categories of turning point were identified. These were:

- *Intellectual identity* – experiences that signalled to the GTA their intellectual competence and compatibility to the academic community where they were located.
- *Socio-emotional identity* – there were experiences that signalled the presence of support, friendship and acceptance

- *Occupational identity* – experiences that signalled occupational status, structural support and cooperation. For example access to office space, administrative support, and receiving a mailbox.

Structural support in the form of formal preparation for the role was highlighted as being particularly important. As Kirk and Todd-Mancillas (1991, p.417) observed:

One of the most important turning point types identified as strengthening occupational identity was receiving information from the department on how to successfully fulfil the department's required procedures (how and when to complete forms, construct exams, and submit grades, etc.). Because this information reduces uncertainty and strengthens identification, departments should frequently and clearly disseminate information about performance policies and standards.

This study emphasise socialisation as a rational process taking place during graduate study. However, other researchers (Weidman *et al*, 2001, Gunn 2007) have argued that the notion of socialisation as a linear process, coinciding with the period of doctoral study is an oversimplification. For example Weidman *et al* (2001, p.40) have argued that graduate socialisation for academic roles 'is dynamic and ongoing, without a definitive beginning or end.' These researchers identify four main influences on the process of socialisation; professional communities, personal communities, novice professional practitioners and the prospective students themselves, noting that individuals will bring to a period of graduate study their previous educational experiences, values, aspirations and learning styles.

Research undertaken by Gunn (2007) highlights the significance of pedagogic histories in the anticipatory socialisation stage during a stage she calls 'pre-graduate'. Using a qualitative study that asked GTAs to write individual written statements about their teaching philosophies together with personal interviews, her findings revealed that: beliefs and values about pedagogy had already started to be formed during a period of undergraduate education; that these values and beliefs were in many cases quite limited; and perhaps most significantly she theorised that that these beliefs and values may be difficult to shift during any subsequent socialisation during graduate study. As Gunn (2007, p.546-547) noted:

Of course, for undergraduates the workplace is only partly revealed and some of the broader educational and organizational issues remain unexposed. Their beliefs possibly reflect the limitations of undergraduate exposure, their developing dispositions to pedagogy being an effect of this. This might in part explain the tenacity of the beliefs, for it is clear that there is an interaction between departmental cultures, institutional constraints and training that does not necessarily expand them in the postgraduate years.

The influence of pedagogic histories in the shaping of beliefs about teaching has also been identified as a source of GTA tension. For example, Branstetter and Handelsman (2000, p.46), in a study into ethical beliefs and practices with 265 psychology GTAs, found that the majority had the belief that it was unethical to teach without adequate preparation, but did so nonetheless as a result of pressures from the situation they found themselves in. The authors observed that the

students 'may find themselves as part of an educational environment that makes it difficult to sustain congruence between belief and behaviour'.

A review of the literature also reveals a wide range of studies which have sought to understand specific agents of graduate socialisation. An early study was undertaken by Darling and Dewey (1990, p.316) who examined the influence of more experienced GTAs on less experienced GTAs and found that the more experienced acted as 'interpretive guides' for the newcomers, helping them to recognize and interpret operative values, attitudes, beliefs and skills in the department. Moreover it was found that the new GTAs were more accepting (i.e. did not challenge) the discourses of learning and teaching that were presented to them. A similar conclusion was reached by Austin (2002), based on a longitudinal study of 79 GTAs over a four year period. This study identified the importance of GTAs making use of their peers to help them make sense of their experience through observation, listening and sharing concerns. Austin also highlighted the importance of family members and personal friends to the socialisation process. She commented:

Spouses, parents, uncles, a professor whom one participant had dated at another university – had been or were current confidantes for many participants. Surprisingly, some participants saw these individuals as their primary reference group despite being outside the immediate academic environment (Austin, 2002, p.105).

The influence of another agent of socialisation, the supervisor, has also been identified by Knottenbelt *et al* (2009). In a study of 23 GTA across two discipline areas (Economics and Biosciences) it was found that the supervisor had a

particularly strong influence on the postgraduates' commitment to a teaching role and in the sharing of a belief that research should take priority over teaching.

However, it was also found (Knottenbelt *et al*, 2009, p.3) that 'where the teaching was going well, and where the particular demands and stage of the progression of the research being pursued made it possible to accommodate teaching commitments, the relationship had clear mutual benefits'.

The contribution of pedagogic training to the socialisation process has been examined in a number of studies. For example Prieto and Meyers, (1999) in a large study across 116 psychology departments in the US, found that formal training had a positive statistically significant effect on GTAs self-efficacy towards teaching. Training covered observing teaching, attending workshops and supervision, and practice which Prieto and Meyers (1999, p.265) described as 'the co-occurrence of training and supervision'. In analysing the nature of the training the researchers noted that GTAs spent more time in theory based activities, with what they termed 'observational or didactic activities' (described as 'indirect method of influencing self-efficacy) as opposed to teaching-based activities such as delivering practice lectures and receiving feedback more (described as direct methods of influencing efficacy).

These findings are considered significant as self efficacy, a future-oriented belief about the level of competence a person expects he or she will display in a given situation, has been demonstrated to be a strong mediating variable in teaching effectiveness and consequent student achievement (Tschannen-Moran *et al* 1998).

A further study (Prieto *et al*, 2007) with 149 GTAs at a single US University found

that training and ongoing supervision helped in building teacher self-efficacy beliefs in the areas of planning course material, evaluating student learning, handling multi-cultural issues and dealing with ethical issues such as relationships with students. A more recent study, Cho *et al* (2011) with 228 GTAs at a large North American University discovered a relationship between different forms of intervention (practical and theoretical) and thinking which focused on the self (deficiency concerns) and thinking which focused on student learning (growth concerns). The results suggested that gaining teaching experience is a factor in potentially reducing GTAs self-related concerns while participation in professional development activities and the value they place on teaching practices were shown to be significant predictors of impact concerns. As Cho *et al* (2011 p.278) noted:

The more GTAs participate in teaching workshops or conferences related to the scholarship of teaching and learning, and the more they valued teaching practices, the more likely they were to be concerned about the impact on student learning.....GTA professional developers should be aware of unique links between GTA characteristics and their concern to make informed decisions facilitating movement from 'deficiency' concerns towards 'growth' concerns

Other research has examined the value of feedback on teaching effectiveness and access to support networks. Mills (2011), in a qualitative study with GTAs teaching English Literature, found that both the quality and quantity of feedback on teaching performance played a key role in the participants' perceptions of teaching efficacy. This supported the findings of an earlier study by Mills and

Allen (2007) which found that participants who had claimed to have received constructive feedback about their teaching, had undertaken teacher training programmes and had participated in teaching observations, and who had a variety of contacts in their support network, possessed a moderately higher level of teaching self efficacy. This finding resonates with earlier work (Boyle and Boice, 1998, p.177) which identified the significance of the collegial environment and made the case for 'systematic mentoring' to support GTA development.

This practice of guided support is also highlighted by Austin (2009) who advocates cognitive apprenticeship for those who work with GTAs, a practice that it is argued will strengthen the socialization of future scholars and which comprises of more systematic preparation, more focused guidance and scaffolding, more explicit feedback, and enhanced preparation for participating in a collaborative way in communities of scholars. One such example is provided by Regan and Besemer (2009) who reported on the successful use of action learning groups to develop the teaching practice of GTAs with evidence of positive professional development in participants teaching practice.

These studies therefore highlight a wide range of potential agents of socialisation that may exert an influence over what a GTA may learn during a teaching opportunity. However a further question needs to be asked concerning what learning that *underpins academic development* might this socialisation leads towards. This question was considered by Austin and McDaniels (2006) and is reviewed in the next section

2.9 Academic learning and graduate socialisation

Drawing on a review of the North American literature and their own research into this area, Austin and McDaniels (2006) identified 4 categories of learning that are considered to be of value for an academic career and which have the potential to emerge during the graduate socialisation process. These categories of learning were:

Conceptual understanding

Potential learning of value identified in this category includes: developing a 'big picture' awareness of the societal purposes of higher education and of different types of higher education institution; what it means to assume the professional identity of a scholarly academic with associated expectations to develop knowledge and contribute to relevant professional communities; knowledge of the discipline and an awareness of how it may connect with other disciplines.

Commenting on specific areas of disciplinary knowledge Austin and McDaniels (2006, p.421), identified the following as being important:

The methods valued, the criteria of excellence, the typical patterns of work (e.g., alone or with colleagues), the type of products (e.g., books, monographs, articles, technical products), and the pace of scholarly productivity vary across disciplinary cultures.

Knowledge and skills in key areas of faculty work

Potential learning of value identified in this category includes developing an understanding of both research and teaching and learning processes. Of particular interest to this study is what is referred to as the development of pedagogic

content knowledge. This type of knowledge was defined by Austin and McDaniels (2006, p.423) as acquiring:

An understanding of how students learn about their specific disciplines, what key problems often frustrate learners, how concepts or other discipline-specific ideas can be best explained, and what pedagogical strategies are most effective within the disciplinary context

Other knowledge and skills identified under this category include developing an awareness of how academic governance works and what is termed engagement and service, which the researcher equate to aspiring academics developing an awareness and exploring ways of how to transfer their knowledge for the public good.

Interpersonal Skills

Potential learning of value identified in this category includes: being able to communicate verbally and in writing to different audiences; developing the ability to give and receive feedback; being able to work in teams and collaborate; and to develop an appreciation of diversity, which is identified as a particular characteristic of many academic settings. Highlighting the importance of this skill

Austin and McDaniels (2006, p.428) make the point that:

Graduate students aspiring to faculty roles must learn to be comfortable and effectively work with people of different genders, races and ethnicities, sexual orientations, and religious commitments. They also must be comfortable interacting with colleagues from other disciplines.

Professional attitudes and habits

Potential learning of value identified in this category includes: developing professional networks; a commitment to professional development; learning how to balance professional and personal commitments and developing a capacity to accept, value and implement an ethical framework for all aspects of academic practice. This is conceptualised as learning professional self regulation and is underpinned by the principles of deterrence, detection and sanctioning and regulation. The learning of these principles is explained by Austin and McDaniels, 2006, p.429) as follows:

They [future academics] should learn research standards, conventions, and ethics, including how to replicate research, the importance of engaging in full disclosure of their research methods, and the important task of retaining and sharing research data. They should develop skills of detection, including learning to recognize problems of misconduct, learning to serve as peer reviewers of manuscripts, and gaining an awareness of how their own biases can inadvertently enter the review process. Additionally, future faculty should learn about sanctions that operate in the research arena. Specifically, they should know what actions to take when faced with improprieties, and the importance of maintaining confidentiality in relation to any concerns about misconduct.

I consider that the categories identified by Austin and McDaniels from their review of the North American literature does provide this study with a helpful framework which can be used to help understand the types of learning that GTAs

may derive from their teaching experiences and which may contribute to their academic development. However, with the exception of work undertaken by Harland and Plangger (2004) and Hopwood (2010a, 2010b), this is a largely under-researched area outside of a North American context.

Harland and Plangger (2004) undertook a qualitative study using in-depth interviews with 25 GTAs in New Zealand. This research found that opportunities for teaching experience were valued and 'helped develop their professional identity as they broadened their subject knowledge and practiced a disciplinary research discourse in the relatively safe environment of the classroom' (2004, p.73). However it also found that the PhD students who participated in the study received less support and autonomy with their teaching than with their research.

In the UK Hopwood's (2010) qualitative research using in-depth interviews with 33 doctoral students sought to understand the value (learning) that was derived from a range of academic activities that included teaching and the processes that facilitated this. (The other academic activities were journal editing and career mentoring and teaching). In assessing what was learnt from these activities Hopwood made the distinction between activities which cause individuals to change their understanding or interpretation of the world and activities which cause individuals to make a change in action or practice in the world. In both cases the research reports on significant learning arising '*in situ* out of the challenges associated with engagement in different forms of practice or social interaction' (Hopwood, 2010a, p. 840). Benefits derived from participants through their experiences included being in a more informed position to self assess their own

developmental needs, feeling more secure in the academic role and knowing how to develop relationships with colleagues. Hopwood concludes his study with the observation that:

What students learn may be unanticipated, indirectly related or even tangential to what was intended. Efforts to improve teaching practices led students to learn about their own learning practices, develop critical approaches to research and administration, and re-engage with the disciplinary context of their research (2010, p. 840).

While this research is considered to provide valuable insights the conceptualisation of doctoral students learning from teaching in terms of *changed understandings* and *changed actions* lacks the more specific learning outcomes focus of the Austin and McDaniels model. Moreover Austin and McDaniels develop their model by highlighting that many of the potential learning outcomes may not be realised due to institutional factors beyond the graduate students' control. Again by making use of a range of studies undertaken in North America these factors include:

Lack of Systematic and Developmentally Organised Preparation:

Here it was highlighted that systematic preparation for an academic career was not the norm in US graduate schools. The research revealed that conversations between faculty and graduate students about academic career paths or the skills and abilities they should develop to pursue different career pathways were not 'extensive' with graduates requesting more guidance in these areas. Neither was there significant evidence of extensive discussions about other aspects of university work beyond teaching and research or higher education issues more

generally. With respect to graduate students undertaking teaching it was noted that typically practice was based around institutional requirements to service teaching rather than as part of a systematic preparation for an academic career. As Austin and McDaniels(2006, p.433) noted:

Most students are unlikely to have opportunities to move in systematic paths through progressively more demanding and more autonomous teaching assignments with careful and specific developmentally orientated guidance from supervising faculty.

Lack of explicit expectations and feedback

Here the research highlighted the importance of and in many cases lack of graduate student receiving clear information and guidance about what they should do to progress successfully followed by regular feedback on their performance. Indeed the importance of the relationship between an individual's development and feedback as part of a task-performance-external feedback cycle is highlighted elsewhere in the literature. For example, research undertaken by Nicol and MacFarlane-Dick (2006) reveals that once an individual becomes clearer as to what is expected of them, they can then develop the ability to self regulate their own learning and become less dependent on an external expert. However, commenting on what is known about the graduate experience of explicit expectations and feedback, Austin and McDaniels(2006, p.433) observed that:

Data from various studies indicate that doctoral students do not talk regularly with faculty members about the students' professional goals, their areas of focus, and the relationship of their career aspirations with employment opportunities available.

Little Opportunity for Guided Reflection

In addition to concerns about lack of explicit expectations and feedback the research reviewed also highlighted the issue that many graduate students had limited opportunities for guided reflection to make sense of the diverse range of experiences and their observations during graduate socialisation. Commenting on this finding Austin and McDaniels (2006, p.438) noted that:

Students report that they are typically left on their own to work through their observations and questions, usually without benefit of in-depth discussions with interested and trusted faculty mentors.

Furthermore it was observed that the absence of such discussion can lead to perceptions of academic life which are not necessarily favourable. For example the finding from several studies that highlighted 'isolation and competition, rather than community' as a perceived characteristic of academic life (p.437).

Insufficient sense of community

A final issue highlighted by Austin and McDaniels in their review of factors likely to impact on learning during graduate socialisation was graduate experience of community, or rather lack of. It was highlighted from the research that there was often a 'lack of attention to the creation of community among peers and faculty during the graduate experience hinders students' progress and interest in staying in [graduate] school' (p.436). Interestingly the evidence also highlighted the value of teaching to making connections and developing communities and suggests that those graduate students with access to teaching opportunities are more likely to have a sense of community than those graduate students without teaching

opportunities. Austin and McDaniels (2006, p.435) argue that connections made in these communities:

Contribute to students' ability to integrate into the academic and social community, gain information, and develop cognitive maps about graduate education that enable them to succeed.

2.10 Summary of literature review and research questions

This chapter has reviewed a range of literature with the purpose of providing the study with a theoretical framework and establishing what is known about the research topic.

With regards to providing the study with a theoretical basis from which to understand learning from teaching a number of key ideas from the literature have been identified. The work of Thornton and Nardi (1975) highlighted that the adoption of a role such as teaching can be conceptualised as a developmental process of which informal experiences can make an important contribution to how individuals learn about workplace roles. This conceptualisation was supported by other researchers identified in the review. Firstly, through the work of Eraut (1994, 2004) and his ideas about non codified practical knowledge that is situated in practice and that is learned through experience of practice. Secondly, through the theorising of Lave and Wenger (1991), Lave (1996) and Wenger *et al* (2002) and their arguments about learning that is situated in communities of practice. This body of work highlighted to me the kinds of knowledge that might exist, and I found the idea that communities of practice had the potential to provide a source of learning that involved the development of a professional identity particularly

insightful. The significance of identity construction as a form of learning was also highlighted in the work of Ibarra (1999) and its theorising that a strong professional identity can benefit future career development. This work also suggested that identity construction is a fluid process and that identities may not be fully formed during periods of career transition. Mentoring, and in particular the idea of developmental networks (Higgins and Kram, 2001) was then identified as a particular perspective for examining the career transition of graduate students given the variety of relationships they are likely to have and the mediating role that more skilled individuals may play in their development.

Further theoretical insights emerging from the review were identified in the work of Fuller and Unwin (2003) and Knight *et al* (2007). Fuller and Unwin's research into the experiences of individuals on a contemporary apprenticeship scheme in the UK highlighted the significance of the ways in which organisational arrangements (conceptualised as being on an expansive- restrictive continuum) could influence the quality of workplace learning. To this perspective I have added the work of Knight *et al* (2007). These researchers argued that role development extends beyond simply providing an infrastructure of support, important as this may be. Effectiveness in the role also relies on how individuals engage with a role they are undertaking. The work of Knight and his colleagues with part-time teachers highlighted the significance of the life histories that individuals bring with them to a role in shaping how they might identify with that role. However with a few exceptions (Knottenbelt *et al*, 2009, Hopwood, 2010) the review revealed limited empirical work in a UK higher education context which

has focused on understanding the kinds of processes that might help postgraduate and postdoctoral researchers engage with different kinds of teaching roles.

The literature reviewed on graduate education did provide some 'clues' as to possible agents of GTA socialisation towards teaching roles. This suggested the likely importance of other GTAs, peers, research supervisors, the availability of training opportunities, and feedback on teaching performance. However there is a gap in the existing knowledge base of this question, particularly in a UK higher education context. This therefore provides the basis for the research questions 1 and 2 of the study. These are identified as follows:

- 1) What is the nature of the teaching roles that postgraduate and postdoctoral researchers undertake?**
- 2) What kinds of processes help postgraduate and postdoctoral researchers engage with teaching roles?**

The review of the literature on graduate socialisation also provided some insights into what kinds of learning postgraduate and postdoctoral researchers might derive from their teaching experiences and which has the potential to contribute towards academic development. As was noted in Chapter 1 a researcher trying to investigate informal learning that is situated in practice is confronted with the challenge of trying to make sense of something that is either taken for granted or not recognised as learning. In this context the 4 categories of learning framework development by Austin and McDaniels (2006) is considered a particularly helpful starting point to address this challenge. Moreover this work also identifies some

possible barriers to realisation of the categories of learning identified. As has been noted previously these findings are grounded in the North American literature on graduate socialisation. However, there is no evidence of research which has made use of this framework in a UK higher education context that has investigated the teaching experiences of postgraduate and postdoctoral researchers. This therefore provides the basis for research question 3 of the study. This is identified as follows:

3) What kinds of learning do teaching opportunities provide postgraduate and postdoctoral researchers?

In setting the 3 research questions my goal was to therefore to contribute to the aims of the study by developing a qualitative understanding of how postgraduate and postdoctoral researchers could make sense of the situations that involved some form of teaching activity. This led me to adopt a particular kind of research design and the nature and rationale of this will be discussed in detail in the next chapter.

Chapter 3: Research Design

3.1. Introduction

The discussion so far has examined the rationale for choosing the research topic, presented a theoretical framework as a way of understanding the topic, reviewed what is known about the topic and identified gaps in the knowledge base. These gaps formed the basis of the 3 research questions identified at the end of Chapter

2. These questions were:

- 1) What is the nature of the teaching roles that postgraduate and postdoctoral researchers undertake?
- 2) What kinds of processes help postgraduate and postdoctoral researchers engage with teaching roles?
- 3) What kinds of learning do teaching opportunities provide postgraduate and postdoctoral researchers?

This chapter presents an account of the research design that the study used to address these questions.

The chapter begins by discussing the methodological framework within which the research design sits. This framework provides the rationale for the interpretive research design chosen. Discussion then considers reflexively each of the key decisions I made in respect to the implementation of the chosen design. These key decisions involved choice of research setting, research participant selection,

methods of data collection and analysis. The final part of the chapter discusses a number of the ethical issues that I had to consider during this process.

3.2 Methodological framework

Wellington *et al* (2005, p.97) note that methodology 'refers to the theory of acquiring knowledge and the activity of considering, reflecting upon and justifying the best methods'. Cousin (2009, p.1) highlights the distinction between methodology and methods, commenting that 'methodology is the framework within which methods are situated' and makes the important point that 'methods are never neutral tools and good research requires an engagement with their theoretical underpinning'. In developing the methodological framework for this study I began by considering two theoretical questions, firstly about the nature of being in the world (ontological considerations) and secondly about the nature of knowledge (epistemology). It was through these considerations that the research design for my study developed. As Clough and Nutbrown (2002, p.30) have noted:

If we examine any piece of empirical research, it is clear that there is at work a great many assumptions about what the world is, how it works and how we can claim to know these things.

Ontology is concerned with the philosophical question of *what is knowable* or as Cousin (2009, p.6) has expressed it 'what can we see from where we stand?' When considering this question in relation to a study which would deal with human subjects, my ontological position is that it is not possible to see an objective reality. What I mean by this is that it is not possible to see

how someone really feels about or experiences something. Rather, what is knowable is a *socially constructed version of reality*. This version will be a product of the mind through individual thinking (cognition) and will be knowable through the medium of social interaction, primarily through the language that is used. As Radnor (2001, p.21) has argued:

Although it is not possible to get inside someone else's head, or ever to really know how someone else feels, through empathetic understanding, gained by the sharing of a common language, we can dialogue, converse and share experiences.

The outcome of such a position is therefore the creation of knowledge which is not value free, but rather shaped by what I already know and believe and have experienced and which has been co-constructed through my involvement with the research subjects. Medawar (1963, p.230), in a seminal article about the fraudulent nature of the scientific paper, makes the point that 'every act of observation we make is biased. What we see or otherwise sense is a function of what we have seen or sensed in the past'. In other words, as researchers we come to the task not as neutral, unprejudiced observers but rather as individuals with ideas about aspects of the social world. I am therefore not an objective outsider taking a detached observer role, but rather consider myself to be part of the research process itself. This position is embodied in the metaphor of the researcher as a *traveller* embarking:

On a journey that leads to a tale to be told upon returning home. The interviewer-traveller wanders through the landscape and enters into conversations with the people encountered. The traveller explores the many domains of the country, as unknown territory or with maps,

roaming freely around the territory.....What the travelling reporter hears and sees is described qualitatively and reconstructed as stories to be told to the people of the interviewer's own country, and possibly also to those with whom the interviewer wandered. The potentialities of meanings in the original stories are differentiated and unfolded through the traveller's interpretations. (Kvale, 1996, p.4-5).

This notion of the researcher as an integral part of the research process has a number of implications, implications which I consider beneficial to the study. The first of these is that I bring to the study personal, experiential knowledge of education which I have acquired over many years. This provides the new knowledge that is being created with a 'major source of insights' (Maxwell, 1996 p.28) and which I have drawn upon reflexively as part of my interpretive framework. Radnor (2001, p.30) has observed that 'educational research is generally undertaken by people who have a history of involvement in the field of education in a capacity other than that of researcher'. I am a case in point. I have chosen to undertake the research as a way to have a better understanding of the issues relevant to my professional practice. Cousin (2009, p.8) has noted that research of this type 'handles subjectivity in the research process by owning up to it'. This point is captured eloquently by Peshkin who argued:

The subjectivity that originally I had taken as an affliction, something to bear because it could not be foregone, could, to the contrary, be taken as 'virtuous'. My subjectivity is the basis for the story that I am able to tell. It is a strength on which I build. It makes me who I am as a person and as a researcher, equipping me, from the selection of topics clear through

to the emphases I make in my writing. Seen as virtuous, subjectivity is something to be capitalised on, rather than to exorcise. (Glesne and Peshkin, 1992, p.104).

The key point to highlight here is the notion that as the researcher I am also 'the instrument of research' (Radnor, 2001, p. 30) as a way of getting 'closer' to the subjects I am seeking to find about. It has been noted that:

Researchers in this framework aim for some measure of closeness with subjects because rapport building and respondent disclosure are seen to be interdependent. They argue that people will not tell you what is happening unless they trust you and trust cannot be built by keeping one's distance. (Cousin, 2009, p.8).

However with this aspiration of getting *close to participants* comes with it a responsibility to treat participants with dignity and respect. This point is made by Radnor when she states:

The researcher as instrument transacting in the field is qualitatively dependent on the relationships initiated and developed by the researcher with the research participants (Radnor, 2001, p.34).

As a consequence a guiding methodological principle that shaped the research design was the belief that I should show respect for research participants and which minimizes the impact of their involvement in ways that might cause research undue intrusion into their lives. Radnor (2001, p.34) describes this as practising 'ethics in action' and is discussed more fully in 3.9.

A final assumption underpinning the methodological framework concerned a belief I hold about human nature and in particular the relationship between individuals as autonomous beings (their agency) and the influence of environmental factors in shaping their individual actions (structural conditions).

As Cohen *et al* (2007, p.6) have noted:

Two images of human beings emerge from such assumptions – the one portrays them as responding mechanically to their environment (determinism); the other, as initiators of their own actions (voluntarism).

My own view is that these are extreme positions and that most forms of human nature lies somewhere in between. In other words, on the one hand, individuals do have ‘minds of their own’ to initiate their own actions, while on the other hand, their behaviour is shaped, to a greater or lesser degree by the ways they interpret the different situations that they encounter.

3.3 Research design

In order to address the research questions of the study and guided by the methodological framework discussed in section 3.2 a research design using an interpretive approach was used. As Radnor (2001, p.4) has noted, ‘the purpose of interpretive research is to clarify how interpretations and understandings are formulated, implemented and given meaning in lived situations’. A design was therefore created that enabled me to capture the teaching experiences of a group of postgraduate and postdoctoral researchers within particular settings and from these experiences I was then able to make my own interpretations in a way that helped me make sense of the research

questions I had set. As Radnor (2001, p.4) has noted 'the interpretive approach rests on the premise that in social life there is only interpretation'.

As such the research design employed in his study:

- Captured the routine and normal practices of a particular group of teachers in a way that emphasised how this group understood their situations as teachers.
- Gave prominence to research participants' versions of reality and my interpretation of this reality.
- Created a distinctive kind of knowledge comprising of detailed descriptions in naturally occurring situations.
- Gave prominence to the position that as the researcher I was also an integral part of the research process.
- Recognised that it would be possible for me to develop an empathetic understanding of how someone else might feel through the sharing of a common language.
- Recognised the need for conclusions to be drawn from the research which would have implications beyond the bounds of the particular events, customs or people studied.

With regard to this last point I was influenced by the arguments of Hammersley (1990), who writing in the context of ethnographic research undertaken in classrooms noted that 'descriptions must remain close to the concrete reality of particular events, but at the same time reveal general features of human social life' (p.598). I therefore took the pragmatic view that an idiographic research design (understanding the particular nuances of

events and situations) and a nomothetic research design (one which seeks to theorise and reveal general features of social life) are not mutually exclusive. As such I set out to discover knowledge that provided a rich and intensive description while at the same time used this knowledge as the basis for making generalisations, however tentative. This perspective is based on the belief that generalisation is possible through a process of comparison with the findings of other similar studies, and by considering how findings might resonate with existing relevant theories of social behaviour. This process is undertaken in Chapter 5 (Discussion).

In formulating the research design I was also influenced by pragmatic considerations concerning the available time and other resources I had at my disposal to undertake the study and by established guidelines concerning ethical practice for educational researchers (BERA, 2004). The constituent parts of the research design will now be discussed.

3.4 Research setting

The choice of research setting was a university in the North of England. This organisation was considered typical of an organisation with significant numbers of postgraduate and post-doctoral researchers who may have opportunities to teach. The university described itself as research focused and was a member of *The Russell Group*, a consortium of universities in the UK which accounts for 67% of research grant and contract income and 57% of all doctorates awarded in the UK (Russell Group 2011). During the period of the study the university had

approximately 1500 and 800 postgraduate and postdoctoral researchers respectively (university website, 2011).

The university policy framework both allowed and encouraged this group of researchers to undertake a limited amount of teaching when appropriate. In the case of postgraduate researchers this should not exceed more than fifteen hours per week on teaching or assessment activity, including preparation time. This teaching should be subject to a contractual agreement and should not be undertaken without appropriate training and initial supervision. In the case of postdoctoral research staff the University's policy specified that they should not be required to carry out teaching activities unless at the time of their appointment or subsequently it has been agreed with them that such activities should form part of their duties and complied with the terms of any external sponsorship or research grant funding for the individual relating to teaching activity.

While the university had a research focus it also delivered teaching programmes both at undergraduate and postgraduate levels across a range of academic disciplines covering Health and Life Sciences, Arts, Humanities, Social Sciences and Science and Engineering. The setting therefore provided me with an appropriate context where I could generate new knowledge about my topic of interest. The intention was not to study the University *per se*, but rather to study examples of postgraduates and postdoctoral researchers who undertook occasional teaching that existed at this setting. The setting was also my place of employment. This provided me with the additional benefits of ease of access to

potential participants and knowledge of the University's academic departments prior to beginning the study. Moreover as an employee based at the research setting, I had an office plus administrative, library and IT support.

3.5 Sample selection

In choosing who to include in the study, purposive sampling was used. Cousin (2009, p.79) defines this as 'recruiting people on the basis of a shared characteristic which will help you in your inquiry'. Such help, according to Plummer (2001, p.133) will be derived from 'people with relevant experiences, fascinating insights and stories to tell'. The objective therefore was to obtain a cross section of participants from the research setting who, in Plummer's words, would 'be revealing and informative' (p.133). However in doing so, I also wanted to open up the possibility for conclusions to be drawn from the research which would have implications beyond the experiences of the particular people selected. In this respect I subscribed to the arguments of Hammersley (1990). He has argued that it is possible for the researcher to reveal particular nuances of events and situations while at the same time use these discoveries to reveal general features of social life. This is achieved through a process of comparison with the findings of other similar studies, and by considering how these findings resonate or contradict with existing theories of social behaviour.

A similar point is made by Stake (1995, p.3) who makes the distinction between cases which are either intrinsic or instrumental in their purpose. In the former, the case is studied 'not because by studying it we learn about other cases or about some general problem, but because we need to learn about that particular case'.

However if the need is to develop a more general understanding beyond that particular case, then the case moves beyond its intrinsic purpose and functions at another level. Here the case is serving as a means to an end, or in Stake's language, it is used instrumentally. In this study participants were selected with this instrumental purpose in mind. There was also the practical consideration regarding whether participants would be easy to access and whether they would be amenable to a request to participate in the study.

Sample selection then proceeded by identifying key sources of variation that would capture the essence of the phenomenon under investigation and provide me with a plausible basis for analysis. To do this I examined university records of centrally delivered training events in learning and teaching which had been undertaken by postgraduate and postdoctoral teachers. This information was used as a proxy for identifying those researchers at the university who were likely to either be teaching or had the opportunity to teach at university level. As I coordinated the training the information was readily accessible. Examination of these records revealed a distinction between events. The first type of training event was directed towards supporting teachers in laboratory settings. These were primarily in Science, Technology, Engineering and Mathematical (STEM) disciplines. The second type of training event was directed towards supporting researchers with more discursive forms of teaching such as seminars and tutorials. These were primarily attended by individuals from the Humanities, Arts and Social Science (HASS) disciplines. This observation led me to conclude that within the research setting disciplinary context was important and that I should include participants from both STEM and HASS subjects. This observation resonated to

some extent with Shuman's notion of *signature pedagogies*. This idea contends that within certain disciplines (and Shulman's work focused primarily on professions such as Law, Medicine and Engineering) there is 'a deep structure, a set of assumptions about how best to impart a certain body of knowledge and know-how' (Shulman 2005, p.54).

Having made the decision to recruit a mix of participants from STEM and HASS disciplines I then made the decision to include another dimension of variation, namely that I should include participants in the sample who were at different stages in their research careers. This would cover new researchers such as those undertaking the first year of doctoral studies to more experienced researchers who were now employed in a postdoctoral research position. My rationale here was this would open up the possibility of the sample revealing whether different things were learnt about academic work through teaching (and if so what and how) at different stages of a research career. In defining the sample in this way, it is acknowledged that other categories of researcher who may undertake occasional teaching at the university were excluded. For example researcher staff employed at a university who have not undertaken doctoral study.

Recruitment itself was undertaken by email. Disciplines were identified using the training attendance records and emails obtained using the University 'people' search facility. The email request for participation also contained the participant information sheet and consent form which are presented in Appendix 2. In total 14 participants were selected for the study. While I was not aiming for a representative sample in a statistical sense, I did consider that this number gave

me sufficient variation for the purposes of the study. A summary profile of participants is presented in Table 3.1. Although no gender related issues were evident it should be noted that eight of the sample were female and six were male. How data were collected from this sample through the use of semi-structured interviews will now be discussed.

3.6 Data collection

The data collection method chosen for the study was guided by two objectives. Firstly, I wanted to utilize a method that could capture how a particular group of individuals made sense of the situations that involved some form of teaching activity.¹ Secondly I wanted to use a method that would allow me to explore possible linkages between the histories of participants, their teaching and their work as researchers. For these reasons the data collection method of the semi-structured interview was chosen.

According to Cousin (2009, p.71-72) 'semi-structured interviews are so called because the interview is structured around a set of themes which serve as a guide to facilitate interview talk.' This has been likened to a 'conversation' (Radnor, 2001, p.59) that is taking place between the researcher and the researched with the purpose of identifying qualitative understandings about the topic under discussion. Moreover these conversations are not neutral events in the sense that the interview is a tool to prospect for information that is 'out there' waiting to be

¹ For example at the end of one of the interviews the participant said to me (after the recorder had been switched off) that she did not realise that she undertook as much teaching as she did, and that she now considered supporting students informally in her office with their final year projects as a form of teaching.

discovered. Semi-structured interviews, as Alldred and Gilles (2002, p.146) have noted, are a 'joint production of an account' between two participants. This is

Gender	Status	Teaching	Discipline	Pseudonym
F	PhD (1 st year)	Seminars	Irish Studies	Sabine
F	PhD (1 st year)	Seminars Tutorials	English	Marie
M	PhD (2 nd year)	Tutorials	Archaeology	Ian
M	PhD (2 nd year)	Lectures Tutorials	Electronics	Raul
F	PhD (2 nd year)	None	Philosophy	Ruth
M	PhD (2 nd year)	Lectures Seminars	Philosophy	Brian
F	PhD (2 nd year)	Lectures Lab demonstrating Fieldwork Marking	Environmental Science	Flora
M	PhD (2 nd year)	Seminars	History	David
F	PhD (3 rd Year)	Seminars	Politics	Susan
M	PhD (3 rd Year)	Lab demonstrating	Engineering	Rick
F	PhD (4 th Year)	Seminars	History	Barbara
M	Post Doc	Project supervision	Chemistry	Karl
F	Post Doc	Seminars Lab demonstrating Problem based learning Marking	Bio-Science	Claire
F	Post Doc	Seminars Lab demonstrating Marking	Bio-Science	Victoria

Table 3.1 Characteristics of Sample

captured by the notion of interviews as 'meaning making events' (Cousin, 2009, p.73). Holstein and Gubrium (1997, p. 146) elaborated on this point when they wrote 'meaning is not merely elicited by apt questioning nor simply transported through respondent replies; it is actively and communicatively assembled in the interview encounter' This assembly, as Cousin (2009, p.81) has noted 'acknowledges that people do not always have a consciously worked out reason for why they do certain things'. In such instances the interview encounter becomes the forum where this new understanding is revealed. Therefore in designing an interview that sought to be developmental (rather than simply information seeking) I followed the advice of Marton (1994) when he stated that:

This type of interview should not have too many questions made up in advance, and nor should there be too many details determined in advance. Most questions follow from what the subject says. The point is to establish the phenomenon as experienced and to explore its different aspects jointly and as fully as possible.

However to facilitate this discovery I incorporated an additional pre-interview task involving the use of photography. The rationale for this approach will now be explained.

Pre-interview phase

Cousin (2009, p.84) has argued that the characteristic of a well-executed, semi-structured interview is the creation of a 'developmental space'. This is conceptualised as a place where a good exploratory conversation takes place.

According to Hammersley and Atkinson (2007, p.101) the purpose of being non-directive is to 'minimize, as far as possible, the influence of the researcher on what

is said, and thus to facilitate open expression of the informant's perspective on the world'. Such a view highlights the need to allow participants to talk on their 'own terms, as opposed to more directive questioning' (Hammersley and Atkinson, p.101). Such a philosophy, it has been argued, (Prosser 2009), has the potential to turn the interview into an empowering event for the interviewee. To facilitate this objective I therefore decided to introduce a creative task prior to the commencement of an interview. This task required participants to take some photographs that revealed something about the kinds of teaching activity *they themselves felt* they undertook whilst undertaking their research. The idea was that these photographs could then be referred to in the interview situation when exploring the research questions identified at the end of Chapter 2.

This approach had its origins in an event I had attended on visual research methods. This was part of an ESRC initiative to build researcher capacity and had included sessions on respondent created data using visual methods such as drawings, video and photography. It was argued that visual methods offered the social scientist, amongst other things, the potential for a more participatory approach to data collection that made the researcher-researched divide less distinct (ESRC, 2009). This argument led me to use an approach, which has been referred to in the literature as *photo-elicitation*. This has been defined as 'using photographs to invoke comments, memory and discussion in the course of a semi-structured interview' (Banks, 2007, p.65). I explained this to participants on the *participant information sheet* (Appendix 2) as follows:

You will be given a camera and, in your own time, are invited to take some photographs which convey *something about the kinds of teaching you*

are undertaking at the university. What you take photographs of (people, objects, places, etc) and how many photographs you take will be entirely at your discretion. Do not worry if you feel you have either taken too many or not enough photographs. There is no right or wrong way to undertake this task. When you feel you have completed the activity, return the camera to the researcher in order that prints of the photographs can be made. These photographs will then be used to stimulate a conversation at a one-to-one interview.

Gauntlett (2009) has argued that the use of creative visual tasks may unlock a different kind of response than those derived from a traditional face to face dialogue and subsequently may provide an aide memoire when used in combination with a personal interaction. He also argues that such an approach has the potential to create a more trustworthy data set as 'participants are given time to reflect on the research questions and are therefore not required to produce instant descriptions of their views in language (which is not easy for everyone)' (Gauntlett, 2009, p.1). According to Collier and Collier (1986) an additional benefit is that the awkwardness that an interviewee may feel from being put on the spot and questioned by the interviewer can be lessened by the presence of photographs to discuss: direct eye contact need not be obtained, but instead interviewee and interviewer can both turn to the photos as a kind of neutral third party. A similar point is made by Prosser (2009, p.3) when he likens the use of photographs in this way to having a 'third person in the room' when undertaking a one to one interview. He also argues that providing participants with the opportunity to construct the interview agenda in this way is an empowering act that signals that

the researcher values what the respondent has to say. Prosser (2009, p.3) argued that:

Social scientists increasingly emphasise a participatory approach in their work making the researcher-researched divide less distinct. This approach empowers respondents by emphasising the meanings they give to images, space and material objects.

It has also been argued (Samuels, 2007) that such emphasising may go some way to reducing consequential power asymmetries between researcher and participants.

While convinced by these arguments I was nervous about adopting such an approach. It could go badly wrong and result in unforeseen consequences. I therefore decided to pilot the approach with two colleagues who agreed to undertake the photographic task I was proposing and participate in a *mock* interview using the photographs they had taken. This was a success and the feedback I received from colleagues was encouraging. The following email communication illustrates this point:

Hello Stuart - just some after-thoughts on the visual interview:

I think allowing people to talk from images is empowering, one of the process[es] they go through is selecting the images - so them going / talking through what they selected is important because it will reveal something about the topic given through their selection process. (I remember a good start of conversation was - why you selected the images.) (E-mail communication with colleague 30/3/10)

The pilot also suggested that when implementing the activity, I should provide to participants (in addition to the camera) a small 'aide-memoire' of the task in the form of a 'credit card' size card with guidance on the activity. This recommendation was adopted. It was also suggested that I give some guidance on approximately the number of photographs to take. Therefore each participant was notified prior to undertaking the activity that on average eight photographs were taken during the piloting with colleagues. I wanted to give participants some guidance, but not to be overtly prescriptive.

Such an approach however did raise an interesting ethical issue which emerged when seeking additional approval for this activity. An issue was raised concerning who was responsible for gaining consent from an individual who may be photographed. In response to this concern I decided to incorporate explicit guidance to research participants to cover such situations. This guidance stated that should the participant wish to take a photograph of a person or persons then in such situations the photographer should ask for permission from that person that it would be acceptable to take their picture. This is considered normal social practice and it is considered that verbal consent is appropriate in this instance. Should this involve more than one person then the photographer should ask for permission from all persons. The participants were also asked to respect the right of any persons who wished to decline having their photograph taken. In such a case the photographer should make a note of who they wanted to take a photograph of and this would provide the trigger for the conversation. This also applied to other people the photographer wished to take a photograph of, but was unable to do so for whatever reason e.g. they are in a different geographic

location, they are incapacitated. As it transpired only four images taken were of people. Two were images of large lecture theatres, one was of a staff notice board scene, and one was a photograph of a photograph of an 18th century scientist. No issues concerning using these photographs to elicit conversation in an interview setting were identified.

It should also be highlighted that it was not my intention to use the photographs as data per se, but that the photographs would be used for the sole purpose of stimulating an interview conversation. This is an important distinction. It was the interview conversations that would be recorded, transcribed and subsequently analysed and not the photographs. I also made it known to participants that should I wish to use a photographic image for dissemination purposes (such as inclusion in a thesis, conference presentation, publication) then I would obtain their permission. This information was conveyed through the participant information sheet (Appendix 2).

Following a face to face meeting where the activity and operation of the camera was explained I asked participants to email me when they had completed the task. This was usually within 1 to 2 weeks of this meeting. On one occasion an email reminder was sent to a participant who had not responded on account of being overseas. I then collected the camera and made photographic prints prior to the interview.

Interview phase

An interview schedule was prepared which comprised a series of main topics and key word probes that were based on my research questions. The schedule is presented in Figure 3.1.

Interview Schedule

The purpose of this interview is to help me understand your teaching role at the University of XXXXXXXXXXXX

I have asked you to take some photographs which convey something about your teaching at the university. I will ask you to tell me about what the images in the photographs mean to you and use what you say to explore

- Teaching activities undertaken (nature/occurrence/motivation)
- Feelings about teaching (likes/dislikes/aspirations)
- Learning from teaching (skills/knowledge/other)
- Factors helping your teaching role (people/resources/other)
- Factors hindering your teaching role (people/resources/other)

5 minutes preparation time

Figure 3.1: Semi-structured interview Schedule

This schedule was designed to provide me with flexibility while collecting data and to be able to listen actively for new and unexpected accounts of specific situations and to probe further based on what was being said. It also facilitated the notion of *giving voice* to both parties in the research process, the researcher and the researched. As Mitchell (1993, p.55) has noted 'the informed researcher's voice no longer provides an authoritarian monologue but contributes to part of the dialogue'. This dialogue is considered important for helping both parties (researcher and researched) to reveal to each other something about their

qualitative understandings about the topic under consideration, and through this process new understandings may emerge. This is consistent with the notion of the interview as a meaning making event.

At the interview (with the photographic prints numbered and laid out on a table) I began the conversation by asking participants to spend some time (5 minutes) reflecting on the photographs they had taken and the questions I was interested in exploring with them. I then began the interview by asking interviewees to explain why they had chosen certain photographs, before covering each of the questions in the interview schedule. Throughout I was sensitive to listen to what each participant had to say and developed the conversation accordingly. The approach used was therefore neither strictly structured with standardised questions, nor entirely 'non-directive', in the sense that there was no control exhibited by the interviewer. This method resulted in a degree of consistency in the type of information that was collected as the same topics were covered with all interviewees, although not necessarily in the same order. This was dependent on the flow of the conversation and the nature of the teaching experiences that were elicited which I could then use to talk through in some depth with the interviewee.

As Marton (1994) has noted:

Most often, however, a concrete case makes up the point of departure: a text to be read, a well known situation to be discussed, or a problem to be solved. The experimenter then tries to encourage the subjects to reflect on the text, the situation of the problem, and also on their way of dealing with it.

The interviews were held in a teaching room which was a quiet venue where there would be a minimal likelihood of interruptions. Interviews were recorded using a dicta-phone.

Reflecting on the process the majority of the participants appeared to be genuinely interested and engaged in the data collection process. The fact that the participants were researchers themselves may be one explanation. However the number of photographs taken (range 3-18; mean 9) did indicate a degree of engagement with the task. I was also surprised by the degree of variation in the photographic images taken. These included anticipated images such as workplace settings and objects but also unexpected metaphoric images such as nature. I also developed an impression that by having the photographic evidence on a table during the interview (the *third person* in the room) not only helped the participants to articulate their answers to my questions, but also helped me to articulate some of my own questions. In particular for those who had taken images of the setting where they undertook teaching I was able to see some of the reality of the situations that were being described. My reflection on these encounters therefore suggested a greater trustworthiness in the accounts that were being constructed, albeit that they may still have been influenced by an interviewer effect, that is, participants could still have taken photographs of what they thought I wanted to see.

The following two images (my words are in bold) illustrate the ways in which the participants' accounts were constructed using this method. In each case the

photograph provides the stimulus for the discussion. Both photographs are used with permission.

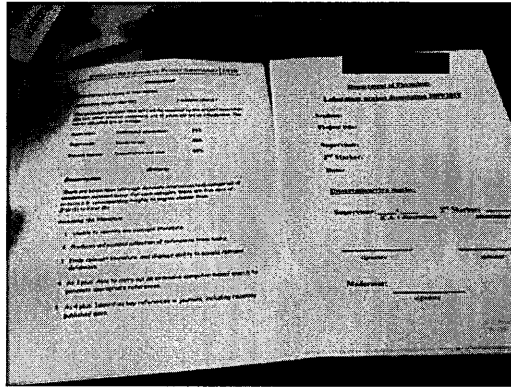
Image 1



Okay, we'll start from number one here. Number one here is the door of the lab. Usually my teaching role is in the lab. This is the first moment when I try to access the lab. When you try to access the lab now you have to switch your mode from researcher into lecturer. You have to deliver something to people. I start-, it's a Psychological attack! I have to prepare myself; I should be prepared already having read everything required that I will deliver. It's a tough moment for me, people are waiting for me and they are expecting something. It's very difficult to satisfy all of them. It's like a challenge. I have to be very ready before I open the door.

So this door is very significant?

Image 2



This is a picture of?

That's an assessment criteria or one page of it and this is just a mark sheet where we fill in the marks. Usually myself and my supervisor will come to an agreement on the marks for student dissertations and then they get marked within their department again.

Right, so this is undergraduate?

Honours project.

Honours project. How long are they?

Usually from January till about now, we've just finished with them. They probably finished in the lab just after Easter. I think it's ten or twelve weeks.

So how many of these do you have to mark?

This year it was only two. Well usually it's only two or three, not really many because usually we spread them between the various Postdocs in the lab so nobody has a massive amount to do. Usually my supervisor asks me to read them and come up with my mark. Because she's their main supervisor she has to agree the mark. I'm not actually a named supervisor although I do most of the supervision

On both occasions the photograph helped me understand the possible meanings of what was being said, both explicitly and implicitly. This implicit understanding I considered to be of particular value which I thought of as a process akin to reading between the lines with the aid of a photograph. For example images 1 and 2 triggered thoughts in my mind about teacher status and shifting identities respectively, concepts I developed further during data interpretation.

I used one further method during data collection. This was the keeping of analytical memos which will now be discussed.

Analytical memos

Hammersley and Atkinson (2007, p.21) observe that research 'is a reflexive process that operates throughout every stage of the project' This observation puts forward the idea that as a researcher you are constantly thinking about what you are doing as you are doing it. This reflexive dimension of the research process was particularly apparent during the data collection phase of the study. During this phase I was making analytical memos, or notes to myself, as a way of making sense of what was being said to me as it was being said. It has been argued that:

Memos are one of the most important techniques you have for developing your own ideas. You should therefore think of memos as a way to help you understand your topic, setting or study, not just as a way of recording or presenting an understanding you've already reached. Memos should include reflections on your reading and ideas,

as well as your fieldwork. Write memos as a way of working on a problem you have in making sense of your topic, setting or study. Write memos whenever you have an idea that you want to develop further, or simply to record the idea for later development. Write lots of memos, throughout the course of your research project. (Maxwell, 1996, p.12)

Radnor makes the point that interpretive researchers do not collect their data in a 'theoretical vacuum' (2002, p.34) but do so in the context of emerging theoretical perspectives. Therefore, as part of a strategy to capture developing ideas I made a series of analytical memos (9 in total) during the data collection process. These were made usually on the same day as one of the semi-structured interviews and were designed to contribute to the development of myself as 'an instrument of the research'. The following are extracts from some of the memos I took during the data collection phase:

- 1) After the session [interview] _____ told me she had sat in on the lecture that accompanied the seminar earlier that week. This formed the basis for her preparation which she did over a relatively short period (2 days) prior to meeting the students. (I was surprised by this). _____ had complete autonomy over choices of music, questions to ask and what activities to use. She had spoken to a fellow PhD student briefly about this, but these decisions were all her choices.
- 2) _____ described her position as being 'in limbo'. Thinks (note she thinks) that she will be teaching the same group again the next semester.

- 3) Email received after the interview (on the same day) with positive response to method. She said [in email]: *I find that my 'intuitive approach' to many things in life and work crystallises (sic) into 'conscious' and clearer concepts once I'm put on the spot, which happened today. ☺*
- 4) She came across as frustrated in current teaching role. Can't go to the next stage without experience. Unable to get experience. Lives on a succession of short term contracts. Teaching glass ceiling?
- 5) She used the word 'we' a lot (teaching as shared experience). Also used the phrase 'not allowed' several times - suggests lack of power - link to theory.

Burgess *et al* (2006, p.92) recommended the value of keeping a research journal as part of the research process, arguing that 'it will contain what is happening in your thoughts as you conceptualize ideas and confide your feelings to the journal page'. While I did not keep a journal or diary *per se* I did find the process of writing some analytical memos during the data collection phase helpful in two regards. Firstly, it provided reassurance that the methodological approach I was adopting was sound. Secondly, I found the process of writing analytical memos highly reflective and helped me to crystallise possible theoretical explanations in my mind. For example the explanation that there are factors beyond the participants' control which induce a particular state of mind and form of learning.

3.7 Thematic analysis of data

Analysis at its most rudimentary level means 'taking something apart' (Stake, 1995, p.71). This according to Cousin (2009, p.115) involves 'critically considering

the explanatory capacity' of data that has been gathered. Such analysis will involve thinking about data, the intuitive nature of which is captured by Stake when he says:

There is much art and much intuitive processing to the search for meaning.....In my analysis, I do not seek to describe the world or even to describe fully the case. I seek to make sense of certain observations of the case by watching as closely as I can and by thinking about it as closely as I can (Stake, 1995, pp.72-77).

In this study, I was faced with the challenge of making sense of the words as spoken to me by the 14 research participants. These words had been prompted by a series of questions and photographs during a semi-structured interview the outcome of which had been recorded. My purpose was now to make sense of what had been said in a way that would inform the research questions of the study. To achieve this I subjected my data to thematic analysis based on a series of stages recommended by Radnor (2001, pp.68-91). The objective of this approach was to identify a limited number of themes which adequately reflected the content of the semi-structured interviews.

Stage 1: Data preparation

The first stage in this process was to prepare the data into a manageable form. I did this initially by converting the audio recordings of the interviews into text based transcripts. This conversion was done using what Oliver et al (2005) refers to as denaturalized transcription. This meant that involuntary vocalizations (such as pauses and stutters) were removed and grammar was corrected. The objective here was to capture the informational content of the interview as distinct from the

intricacies of the spoken language where much too much detail would obfuscate substance. As has been noted:

Denaturalism has less to do with depicting accents or involuntary vocalization. Rather, accuracy concerns the substance of the interview, that is, the meanings and perceptions shared during a conversation (Oliver *et al*, 2005, p.4).

I transcribed four interviews and a third party transcriber did a further ten. Gibbs (2007) has argued that a researcher who transcribes his or her own interviews results in a more nuanced interpretation. However my own experience of transcribing the four interviews I undertook did not reveal this to be case. I found that during transcription, rather than listening for interpretation, I was listening for language accuracy, and that even with a small sample, I was spending a disproportionate amount of time on the process. This created a situation where I was transcribing under pressure and several weeks after the interview had taken place. I came to the conclusion little real interpretive benefit was being gained. Therefore, to allow me more time to engage in more meaningful interpretation the decision was taken to use a third party, an approved supplier of transcription services. As a consequence I had the opportunity to read the transcript of an interview relatively soon after it had occurred. I would receive a professionally prepared transcript (usually within 5 working days from the date it was supplied to the transcriber). Upon receipt of the transcript I would then read while listening to the original recording checking for informational content and substance and redact any words that would compromise anonymity. I was therefore able to do this relatively soon after the interview while it was still fresh in my mind. This was

considered an advantage in capturing the substance of meaning and added trustworthiness to the research design.

Stage 2: Generation of coded transcripts

The second stage of the analysis involved the generation of coded transcripts. The objective here was to reorganise data in a way that would facilitate interpretation. This involved reading the interview transcripts and preparing a list of main topics that were covered while collecting data. These topics were shaped by the research questions of the study and gave me an overview structure or holding areas under which I could further view and organise data. Three topic names were identified and each given an abbreviation as follows:

- The nature of teaching roles (TR)
- Engagement processes (EP)
- Learning outcomes (LO)

Within this organising structure I then read the transcripts again and wrote down sub-headings (themes) which were both explicit in the data but also based on my interpretation as to the meanings behind what was being said. These themes were then given a number and a definition and organised under each of the three topics. The coding sheet developed as a result of this process is presented in Table 3.2.

Topic	Code	Theme	Definition
The nature of teaching roles	TR	1.Access to roles	Evidence which identifies how a GTA obtains a teaching role
		2.Complexity of roles	Evidence which identifies variation in the teaching roles a GTA is undertaking
Engagement processes	EP	1.Informal dialogue	Evidence which identifies a GTA engaging in conversations about teaching practice
		2.Feedback on performance	Evidence which identifies a GTA receiving feedback on their teaching performance
		3.Observation	Evidence which identifies a GTA making a connection to the observed teaching practice of another individual
		4.Collaborative working	Evidence which identifies a GTA undertaking a teaching task with another colleague(s)
		5.Training	Evidence which identifies a GTA experiencing a formal training intervention
Learning outcomes	LO	1.Changed understandings	Evidence of a GTA demonstrating new understandings as a result of a teaching experience
		2.Changed actions	Evidence of a GTA demonstrating a new way of behaving as a result of a teaching experience

Table 3.2: Coding sheet used to analyse data

Having prepared the coding sheet I then read and coded each interview transcript to identify the comments which aligned themselves to each of the themes I had defined, and gave each of these comments a letter (A-Z) to differentiate it from

other pieces of text. For example: TR1A, TR1B and TR1C. This was not considered a mechanistic process but relied on interpretive judgment in applying the coding framework in a rigorous but thoughtful way. To facilitate this process I put all transcripts into a computer software package, NVivo9, designed to support researchers working with qualitative data. The advantages of using this software was that it allowed me to code data from the same source to more than one theme therefore reducing the need to copy and paste using multiple files. Using the software I was also able to print off copies of generated coded transcripts prior to interpretation. Re-ordering of data in this way therefore facilitated the process of looking for connections, making comparisons across data and looking for similarities, contradictions and subtleties of meaning.

Stage 3: Interpreting the data

Having prepared data in this way, I then moved to the next stage of analysis by providing an account of what I considered the data to be saying. As Radnor (2001, p.88) has noted 'this is where the interpretive process takes over from the descriptive'. I therefore read the coded transcripts for subtleties of meaning undertaking what Gibbs (2007, p.41) has described as 'intensive reading and thinking' about data. I also read for evidence that resonated with the theoretical framework that I was using to understand learning in workplace settings. Hence the approach adopted was not purely inductive, allowing insights to emerge from data, nor was it purely theoretically driven, testing out a predetermined framework. Rather, certain findings were anticipated and hence *looked for*, while others were identified as important to the questions posed, but not necessarily anticipated. The findings are presented as a series of interpretive statements with

data providing the evidence for making the statement. The following example illustrates this approach:

Interpretive statement

Taking on the identity of a teacher can lead to GTAs moving beyond their comfort zone as the following participant recalled when about to enter the classroom.

Evidence

It's a Psychological attack! I have to prepare myself; I should be prepared already having read everything required that I will deliver. It's a tough moment for me, people are waiting for me and they are expecting something. It's very difficult to satisfy all of them. It's like a challenge. I have to be very ready before I open the door (Raul)

Radnor (2001, p.89) makes the point that 'it would be impossible, unwieldy and a very long read if you included every piece of data to support each statement you made'. Therefore I used the coded transcripts selectively choosing those words that substantiated the interpretive statement I was making.

In summary, the intention of my analytical approach was not to provide thick rich descriptions of the role of each participant as a teacher, but rather to identify something important about data collected from the interviews in relation to each of the research questions. In doing so, I avoided selecting evidence which Shank (2002) has characterised as 'idiosyncratic' and 'voluminous' (p.75-76) but rather

sought to use data that made reference to the questions the study was seeking to address.

3.8 Trust in data collection and analysis

In sections 3.6 and 3.7 I have provided an honest and explicit description of the methods I used in collecting and analysing the data for the study. I have done this with integrity by demonstrating how I have engaged reflexively with the key decisions made during the research process.

In relation to data collection I have shared my thinking about using the pre-interview task of photo elicitation as a method to enhance the validity of the semi-structured interview accounts. I have shared the origins of this approach and my reflections as to the success of its implementation. I have also shared how I made use of analytical memos during the data collection stage to capture my thinking about what I was doing, while I was doing it.

In respect to data analysis I have provided a detailed account of how I went about preparing and making sense of the data collected. I have shared my experience of interview transcription and how through it revised my approach to this activity. I have also presented a detailed account of how I critically considered the explanatory capacity of the teaching situations that were communicated to me and have represented these faithfully and accurately through the actual words spoken.

Radnor (2001, p.38) makes the point that when considering trust in data collection and analysis 'the reader should be able to catch sight of how the research was

done.' By providing an account for myself as an integral part of the research process in the ways described I believe I have achieved this. Radnor (2001) also makes the point that trust in data collection and analysis is furthered strengthened when the researcher has situated their choice of research methods within a sound ethical framework. The chapter will now conclude with a discussion of the ethical framework that was employed in this study.

3.9 Ethical framework

Shank (2002, p.97) has stated that 'a good researcher is an ethical researcher' and should develop a sound ethical framework to guide their work. Cousin (2009, p.17) identifies two key reasons why this should be the case. The first reason is that a sound ethical framework will protect both the researcher and the researched from any consequences which are not desirable (for example economic loss or the prospect of legal action). The second reason is 'facilitative' where it is argued 'an ethical orientation supports the thoughtful conduct of the research process and the eventual credibility of the report'.

In developing my own ethical framework I was guided by four principles (Denscombe, 2010, p.331). He proposed that the social researcher should seek to: 1) Protect the interests of participants; 2) ensure that participation is voluntary and based on informed consent; 3) avoid deception and operate with scientific integrity and 4) comply with the laws of the land. In respect to the first principle the question I asked myself was whether any of the research methods I was proposing would cause any harm to participants in the research, be that physical, psychological or personal harm. As

Denscombe argues 'research subjects should be no worse off at the end of their participation than they were when they started'. While a study of this type was not considered to involve vulnerable people or sensitive issues, I was mindful that there would be differences between my beliefs and the beliefs those taking part and that I should respect these differences when conducting and reporting the research.

I was also mindful of the need to minimize the impact of the research on participant's time and avoid undue intrusion into their normal working practices. To ensure that participation in the study would avoid any possible embarrassment, and that confidentiality would be respected, all documents and publications arising from the study have been anonymised. Moreover the combination of these factors contributed to participants trusting me as a researcher. This was considered vital to the methodological approach as it was reliant to a large extent on trust as I entered the settings of others to gather data.

Another way of ensuring this strong ethos of trust was created was adopting the principle of informed consent. According to guidelines produced by the British Educational Research Association (BERA, 2004, p.5) this means ensuring that 'participants understand and agree to their participation without any duress, prior to the research getting underway'. To achieve this it was necessary to provide participants with sufficient information in the form of a *participant information sheet* and a *consent form*. These were drawn up following guidelines recommended by Denscombe (2010, pp. 333-334).

The documentation helped clarify what commitment I was expecting from participants and enabled them to make an informed decision about participating in the study. This also protected me from claims that I was not being truthful about the nature of the investigation, and is consistent with the principle that research should avoid deception and operate with scientific integrity. Denscombe makes the point that the researcher should report on their research in an open and honest way. Such an endeavour should not be misleading and is strengthened by the researcher demonstrating reflexivity. The importance of this point is highlighted in the following observation:

Usually the researcher has sole access to and total control over the tape or transcripts. No one else oversees which parts she selects as of significance....each researcher is left on trust to draw the difficult line between interpreting the data in terms of relevance to her research questions as opposed to twisting it in a way that amounts to misrepresentation of what was said. (Glucksman, 1994, p.163).

Therefore, mindful of misrepresenting what had been said by research participants I put in place a chain of evidence that corroborates the version of findings presented in this thesis. The point to emphasize here is that while only some of the evidence I gathered has been incorporated, I considered it important to make available for scrutiny by a relevant people (e.g. my employer, supervisor, examiner) an annotated, systematically organised compilation of raw data upon which the research report is written.

A further aspect of operating with scientific integrity concerned acknowledging the contribution of others through following appropriate academic conventions

and, in accordance with guidelines, to present the 'practical significance of the research in a clear, straightforward fashion and in a language judged appropriate to the intended audience' (BERA 2004, p.11). In doing so I have also avoided criticising other researchers' work in a defamatory manner and have chosen to write in the first person to acknowledge my own place in the research and demonstrate reflexivity.

The final area of my ethical framework concerned ensuring that I complied with legal and regulatory requirements. Three areas were considered: 1) that I had complied with the law of copyright. This applied on one occasion where copyright permission was sought and received from Vitae for the use of the graphic illustrating the Researcher Development Framework (Appendix 1); 2) that I had complied with data protection legislation. Participants were allowed access to the information which will be kept private and secure for a period of 5 years from the conclusion of the research. I also notified participants that data would not be disclosed to any third parties and would only be used for the purposes originally specified at the time of the research; 3) I secured relevant ethical clearance and advice from the university where the research was undertaken. This process was particularly valuable in the case of the data collection method which involved the use of photographic activity.

Chapter 4: Findings

4.1 Introduction

This chapter presents the findings that emerged from the interviews with the 14 research postgraduate and postdoctoral researchers at the research setting and which were analysed using the process described in Section 3.7. The findings are organised into key themes, with each of these themes being located against the research question which it is addressing. Presented within each theme are my interpretations of what was said to me together with the evidence to support this interpretive claim. This evidence is presented in the form of quotations and presents the reader with a nuanced version of differences as well as similarities in the GTAs' perspectives of their teaching roles. An overview grid which shows the alignment of interviewees to coding is presented in Table 4.1. To protect the anonymity of research participants a pseudonym for each of the GTAs was used.

Coding Sheet	The nature of teaching roles (TR)		Engagement processes (EP)					Learning Outcomes (LO)	
	Access to roles (1)	Complexity of roles (2)	Informal dialogue (1)	Feedback on performance (2)	Observation (3)	Collaborative working (4)	Training (5)	Changed understandings (1)	Changed actions (2)
Interviewee									
Sabine	TR1A;		EP1A; EP1B				EP5A		
Marie		TR2A; TR2B	EP1C; EP1D; EP1E; EP1F; EP1G		EP3A	EP4A	EP5B; EP5C; EP5D	LO1A; LO1B; LO1C; LO1D	LO2A; LO2B
Ian	TR1B	TR2C	EP1H				EP5E		LO2C
Raul		TR2D; TR2E		EP2A	EP3B; EP3C			LO1E	LO2D
Ruth	TR1C; TR1D						EP5F		
Brian	TR1E	TR2F					EP5G	LO1F	LO2E; LO2F
Flora		TR2G; TR2H	EP1I; EP1J	EP2B	EP3D	EP4B; EP4C	EP5H	LO1G; LO1H; LO1I	
David	TR1F; TR1G; TR1H				EP3E		EP5I	LO1J	
Susan		TR2I; TR2J	EP1K; EP1L	EP2C		EP4D	EP5J	LO1K	LO2G; LO2H
Rick			EP1M				EP5K		
Barbara						EP4E	EP5L		
Karl					EP3F; EP3G				
Claire	TR1I; TR1J	TR2K			EP3H; EP3I	EP4F		LO1L	
Victoria	TR1K			EP2D	EP3J	EP4G	EP5M		

Table 4.1: Alignment of interviewees to coding

4.2 Findings: research question 1

What is the nature of teaching roles that postgraduate and postdoctoral researchers undertake?

Access to Roles

The study found that gaining access to the role of teacher was primarily achieved through ad-hoc and informal means. Indeed a clear message from the interviews was the importance of GTAs obtaining access to teaching opportunities as a consequence of who they knew. The case of Brian illustrates this phenomenon through his recollection of how he obtained some teaching work. He said:

So originally there was a student here before, who regularly taught courses so he was doing 'Introduction to Philosophy' so he was leaving so basically the issue was does anyone want to volunteer and take over the course, so that's how I came into that. (TR1E)

Moreover gaining access to a teaching role through this kind of ad-hoc arrangement could be further enhanced when a GTA adopted a proactive approach and instigated enquiries about teaching opportunities. For example David recalled asking his School Office 'I asked them. I said hey, what's going on, how do you go about getting teaching experience?' (TR1G) while Ian asked 'informally to another member of staff, if there was any sort of teaching experience' and remarked:

And then, I don't know, I think he had a word with someone else, I think, and this other member of staff asked me. (TR1B)

In the case of the postgraduate students interviewed the research supervisor was identified as a key intermediary in helping GTAs gain access to teaching

opportunities. This was clearly illustrated in case of David. Referring to his supervisor he said:

At that time, she was the head of postgraduate studies. Now, she's the Head of the entire school. And she asked me do you want to teach? I said yeah I'd love to. Yeah, so that's how it happened. It was all informal; it wasn't like I filled out forms or went before a committee or anything like that. (TR1H)

The importance of the supervisor was also clearly in evidence in the case of Marie, where discussions about teaching had begun prior to her arrival at the University.

She said that:

One of the reasons that made me crave to come to [name of the University] was my supervisor when we were talking things out, when we were getting things sorted and fixed, he also let me know that yes we always tend to give our postgraduate students opportunity to teach. (EP1C)

Another clear finding which emerged from the interview data was that some GTAs found it easier to access teaching roles the others and that this ease of access was influenced by prior knowledge and size of department, expertise that the individual could bring to a teaching role and status of the individual. The case of Susan provides a good illustration of how prior knowledge of a department had had been helpful to her in accessing a teaching role. In her case she had studied in the department as an undergraduate and had undertaken two research projects in the same department before starting her doctorate. Describing herself as 'quite

established' she described how her departmental network provided her with a variety of teaching opportunities. She said:

This will be the third time I will have done this module, and I've done other little bits and bobs for other first year communication studies, and I've done a couple of guest lectures as well on the 'Iraq War Project' we were doing before. (TR21)

Other participants in the study were not so fortunate. Ruth, for example a self funding doctoral student, who was a relative newcomer to her department, found this newcomer status to be an issue in gaining access to teaching opportunities.

Reflecting on her experiences she said:

I've moved across from politics to philosophy..... So basically, the areas of Philosophy I can teach in are narrower than perhaps somebody who'd done a philosophy undergraduate degree. (TR1C)

Susan and Ruth's contrasting experiences with accessing teaching opportunities also illustrate how their respective developmental networks will be different. In the case of Susan the teaching opportunities on offer were providing her with access to a social system where development could take place. In the case of Ruth the opposite was the case. This is not to say that Ruth did not have access to other developmental networks at the time of the interview, rather a 'new' network that would present itself from teaching opportunities was currently not available.

A relationship between access to teaching and a GTA's particular area of expertise was also found in the data. For example Sabine felt confident of being offered teaching on account of her area of research expertise. She said:

There's one module that is about the Irish revival, and since my PhD is about this period, and one particular writer within it, I will probably be offered the opportunity to give a lecture on one or two of these. (TR1A)

Moreover opportunities of this kind were shown to exist beyond a single department. For example Brian, used his expertise to secure teaching in two departments. He stated:

I've taught Introduction to Philosophy twice for Continuing Education and I've run some Logic seminars for the Philosophy Department.

(TR2F)

Sabine knew of a fellow PhD student who was 'giving a module about Irish memoirs, like a 10-week course' to Adult Education. She considered this desirable and wanted to know 'How can you do that? Do you have to apply for it?' (EP1B). This uncertainty about how to access teaching opportunities that is captured here highlights the importance of understanding the effectiveness of the communicating strategies used to inform GTAs about the teaching opportunities available and the application process they should follow.

A related issue which emerged during the interviews concerned the finding that GTAs on a doctoral scholarship had a preferential status when it came to accessing teaching opportunities. For example David, a self funding international student talked about 'priority' given to 'doctoral students on a scholarship' (TR1F). This can be contrasted with the experience of Marie (on a scholarship) who was 'pleased to see that teaching was integrated as part of the training for your doctorate' an arrangement which she thought was 'absolutely brilliant' (EP5B). Ruth on the other hand (a self funding PhD student) had not been so fortunate in

securing any teaching, describing her situation as 'it's kind of wait and see at the moment' (TR1D). These contrasting experiences showed a significant variation in opportunity operating at the same university.

The availability of teaching opportunities was also shown to be related to the size of the department or school where the GTA was based. Ruth who was struggling to find teaching was based in a relatively small university department [Philosophy]. While Victoria (a post doc) found herself in a situation where teaching in the form of Problem Based Learning (PBL) was readily available. She said:

This was offered to us because they constantly need tutors. They have 300 medical students in each year and they have PBL from first to third year. You can imagine if you have groups of eight or nine students how many tutors they need. It's two hours every week and sometimes twice. They needed tutors and they borrow them from the School of Clinical Sciences. (TR1K)

However, while PBL teaching may have been readily available, gaining access to other forms of teaching experience was more problematic. Claire, who worked in the same Department as Victoria, noted that limited access to other kinds of teaching opportunities was related to both to her status as a postdoctoral researcher and to the characteristics of the department where she was based. Revealing some frustration with her current situation she stated:

I really enjoy it. I would like to do more teaching but the department we're in isn't necessarily a teaching department. There's not as much chance as I would like to do proper lectures to bigger groups or more

structured lecturing....until you get an academic post then there's a line at which you're not allowed to do things. (TR1I)

And to emphasize the importance of the 'right kind' of teaching opportunities she then added:

Yes I'd like to do more. It's very difficult to get a permanent post without teaching experience. It's Catch 22. You can't get the experience till you get the post but you can't get the permanent post without experience. (TR1J)

Complexity of roles

Another clear message that emerged from the interviews was the finding that the teaching roles that GTAs were asked to undertake varied significantly in their complexity. Some GTAs could access autonomous teaching roles that were both complex and challenging in nature while for other GTAs the opposite was the case.

Examples of GTAs whose teaching roles were more complex included Susan who was in her third year of teaching a second year undergraduate politics module and acted as the tutor for a group of 54 undergraduate students. Victoria, one of the post docs, had recently run a 'problem based learning' class with medical students while both Flora and Raul had been provided with the opportunity to give lectures to undergraduate and postgraduate students respectively. Raul was teaching some MSc sessions which were three hours in duration. He described the teaching he had to do as 'very sophisticated' and it carried a high degree of teacher responsibility. He said:

They have a lot of assignments so they don't want to waste time on certain work and leave others. We have to move them very fast and help them cover the whole required material in a certain time. (TR2E)

The degree of challenge varied according to the nature of the teaching tasks that the GTAs were asked to undertake. Some tasks such as lectures were perceived to involve considerable amount of responsibility. For example Flora described her lecturing experience as:

Thrown in at the deep end....even though I found it [giving lectures] probably the most terrifying thing I've ever done this year, I was really excited to be doing it. (TR2H)

Interestingly, the degree of challenge perceived to be inherent in the task could impart notions of status onto different forms of teaching activity. In particular several respondents viewed lectures to represent a higher form of teaching with opportunities to lecture being highly desirable and sought after. For example, Marie made reference to a teaching hierarchy and considered her teaching opportunities located at a different (lower) level from lecturing. She said:

I'm teaching on the second level of teaching, tutorials are the second level, I perceive it as the second level, it's the exercises, it's not the primary information. It's going through the information and making sure that we have grasped it, and digested it, it's not the lecture. I'm not on the level of being able to lecture. (TR2B)

Task autonomy also varied considerably between GTAs with some having a high degree of autonomy over what was taught to students with others having no control and influence. For example Brian was able to write his own lectures in the teaching of Philosophy while Rick was part of a team of several demonstrators

that delivered a set laboratory experiment that had been prepared for him in advance. The experiences of Susan fitted somewhere in between. In the Politics module that she was teaching topics had been set for her but she had some degree of freedom in deciding how best to cover this material. She said:

So even though we will have the questions to work through that John [the module co-ordinator] sets, I try to make it very topical and because it is media and politics it is a very easy subject to engage with something that has happened recently in the news so I will often have an article. So if I find we have worked through the questions and they are not saying very much or getting somewhere, I will have a short bit of reading that I can hand out and then I'll have some questions based on that reading as well. (EP4D)

Having autonomy in the design of teaching opportunities could also carry forward into have some autonomy in the design of assessment tasks. This is illustrated by Victoria when she said:

With him [a fellow doctoral student] we came up with essay titles and questions for a multiple choice questionnaire. They had a big one so we had to provide the section about our teaching..... Yes, it was entirely up to me and my colleague to decide how we want to do it and what we would like to cover. It was interesting because it was a new experience. (EP4G)

While some of the interviewees had opportunities that could be described as complex and challenging and where personal autonomy could be exercised, other GTAs revealed a different kind of teaching experience. For example Marie described her teaching in matter of fact sort of way. She said:

Just tutorials to introductory courses. (TR2A)

A similar choice of words was used by Claire when describing her work with postgraduate masters students in the laboratory. She said:

Just show them practically how to use it [the equipment]. (TR2K)

Ian's limited autonomy in deciding what he was required to teach and how that could be taught was a factor in explaining his view that he was not engaged in 'proper teaching'. He said:

We were given the work.... And she sort of said [the academic] what things she sort of wanted us to raise, what sort of things she was expecting. (EP1H)

This variation in the kinds of teaching role experienced by GTAs is considered significant and provides a possible explanation for different levels of GTA engagement with teaching roles that may exist. For example it is possible to hypothesise that complex tasks are more likely to increase engagement with teaching, while less complex, routine tasks will have the opposite effect. While not explored in this study this question does provide a further avenue of research.

4.3 Findings: research question 2

What kinds of processes help postgraduate and postdoctoral researchers engage with teaching roles?

Informal dialogues

A key process in helping postgraduate and postdoctoral researchers engage with their teaching roles was through informal conversations with colleagues. While

this finding is not unsurprising the frequency with which informal dialogues about teaching is appears in the data is worthy of note. For example, Flora described an aspect of her department culture which provided an important forum where opinions about learning and teaching could be expressed. She said:

Every day at 11 o'clock, everybody, if they're not teaching, goes and has a coffee. So it's a great way for everybody to kind of generally chat about what they're doing and what's going on. And again, you pick up little hints and tips. (EP1J)

Karl one of the postdoctoral researchers clearly recognised the influence of his research manager on his practice. He said:

There are certain things that I really like about my current supervisor and how he treats my reports, how he asks me questions and how he facilitates this knowledge transfer. I try to do the same thing. (EP3F)

A similar illustration was provided by Marie, who had learned some techniques on how to manage her marking practice from an experienced colleague. She remarked:

Most help, I must say, I got from a full time member of staff who has been doing marking for ages now, and he helped me manage to find a way to reduce the time I spent marking. (EP4A)

Conversations with fellow postgraduates were also found to be an important source of guidance. Susan stated that she had 'a good friend who is a postgrad, who was doing a lot of teaching last year so we would talk about it [teaching] a lot'. When asked what aspects of teaching she talked about, she said:

How to get the students to participate, what kind of material to use in the seminar, how long you would want to give them on a certain exercise, whether you would split them into groups, what you would split them into groups for. (EP1K)

Marie in a different Department revealed a similar type of conversations with other GTAs. She said:

We compare our experiences with the students. We compare what kind of answers we get. What kinds of questions we get. What kind of bewilderment we get on the part of the student with regards to the material. We discuss marking. We discuss gaps in our own knowledge and how to get over them. (EP1F)

Flora sums up the cumulative effect of this advice and help from colleagues how it interacts with the knowledge and skills the GTAs can bring to their teaching situation. She said:

It's advice of your supervisors, it's advice of other colleagues, it's advice from other PhD students, who've been through that as well. And you try and pick up what they're telling you and you try and put your own spin on a bit. (EP1I)

Moreover the spacial proximity of colleagues to each other in their respective work areas was also shown to facilitate conversations about teaching. Shared offices or postgraduate common rooms were particularly useful in this respect. For example, Sabine shared a room with four other people observing that:

They have a genuine, you know, knowledge of Irish history, and then you can just bounce an idea off them.....basically telling me that it's really about getting them to talk and engage with the subject.....and

give them sort of provocative questions, rather than sometimes the old fashioned ones from the teachers. (EP1A)

Marie also revealed something about the context of these conversations, indicating they were more open than they may have been with more senior colleagues, noting that:

It's far easier with other PhD students who do tutoring. We're on the same level with them, completely on the same level. Discussions are completely free. (EP1E)

While this was not raised as an issue by any of the other participants in the study it does raise an interesting area for further research to examine in more detail the dynamics of the different types of informal and formal relationships about that a GTA is likely to encounter and how this might influence practice.

Feedback on performance

Another key process that was identified in helping postgraduate and postdoctoral researchers engage with their teaching roles was through feedback from colleagues and students on teaching performance. Where feedback on performance occurred it provided an important source of self belief in the GTAs' ability to perform their teaching responsibilities effectively. This finding is aptly illustrated by the case of Flora who identified herself as well supported in her teaching responsibilities. In describing how helpful feedback on her teaching performance had been she said:

He [the module co-ordinator] actually came along to one of my first sessions, I think, just to make sure that I was okay when I was doing it, and said you sounded fine, you were explaining it well to them, you'd

planned, you'd prepared, that kind of thing. And it kind of settled me in, I thought well, I've done one tutorial, I can do like the next 12 that I've got left to do. (EP2B)

This had provided an important source of confidence in her abilities. She said:

Makes you believe a bit more that, in actual fact, I can do this if I stand there and I just take a breath and just do it. So I think more of that type of feedback was kind of vitally important. (LO1H)

The feedback received from students of teaching performance was also shown to be an important source of teaching confidence. For example, Susan received both formalised feedback (teaching assessment forms) and informal feedback (student reactions in class). Taken in combination with how she felt about her subject expertise this feedback provided her with a strong indication that she was performing her teaching role effectively. She said:

I guess feeling that I know the subject very well, and I've had quite good feedback from students on the teaching assessment forms and most of the time I do feel that the students are engaging well and I come out and feel it's been a good seminar and I do get a real kick.....

I'm quite aware of those sorts of things. (EP2C)

However, not all GTAs received feedback on their teaching performance. For example Raul had received limited feedback on his teaching performance which made the demands on what he was being asked to do difficult. Indeed Raul's experiences illustrated how taking on the identity of a teacher can lead to a GTA moving beyond their comfort zone. Faced with the prospect of facing 32 masters

students for a three-hour lab session Raul described his emotions prior to going through the door into the lab as follows:

This is the first moment when I try to access the lab. When you try to access the lab now you have to switch your mode from researcher into lecturer. You have to deliver something to people. I start-, it's a Psychological attack! I have to prepare myself; I should be prepared already having read everything required that I will deliver. It's a tough moment for me, people are waiting for me and they are expecting something. It's very difficult to satisfy all of them. It's like a challenge. I have to be very ready before I open the door. (TR2D)

However, despite the challenging nature of the teaching task that confronted Raul the on-going feedback that he received from either the students or the module coordinator was limited. Indeed Raul empathised what he saw as the random nature of receiving any feedback from either students or colleagues when he said 'if I'm lucky they will give this feedback directly to me'. (EP2A)

Observation

GTAs' engagement with their teaching roles was found to be influenced by their observations of other teachers. A variety of observations were used for this purpose including the GTAs own formative experiences and memories as learners. As preparation for their roles observing the performance of other teachers in their department was mentioned by a number of participants in the study. For example Marie said:

During the first semester, the first course I took was 'From Words to Text', it was grammar based. There I just attended the lectures to get to

know what the students get to hear, so as to be on level with them and to have a common basis with my students to be better able to better estimate what they need when they ask something or when they don't react to questions, things like that. (EP3A)

However this kind of observation on its own could reveal itself to have limitations, particularly when the teaching task was considered to be more of a challenge. In a more advanced course that Marie was teaching the learning process of observation was combined with the learning process of advice and help from colleagues. Describing her preparation for a course that she considered beyond her capabilities at the time, she said:

This term I'm teaching 'Sound to Speech' which is more about the sounds of language and dialects and accents and things like that, which I am not an expert in at all and yes, I get, I attend lectures as well, and I meet the Course convener regularly, once per week and we go through the issues...anything that might be worrying me, and I go into my class with far more confidence than otherwise. (EP1D)

A similar example of this practice was provided by David who was required to observe the teaching of an experienced colleague as a form of preparation. His account of the conversation after the observation gave an illustration as to how understanding about a pedagogic method could be developed. David described the encounter as follows:

You know, like I had questions. You know, I was saying, you know, with the handouts and visual aids and things like that, and why were you [the lecturer] particularly drilling in on the one... he was making a

specific emphasis on certain things. And I was saying why's that, and he explained to me why. (EP3E)

It was also noticeable the number of specific instances where GTAs recalled specific memories of teaching episodes they had observed as learners. These were identified as significant to the shaping of practice and were shown to occur through a process of pedagogic imitation which revealed itself to have a number of interesting dimensions.

Firstly, the role model impact that a particular teacher and their instructional methods could have on practice. This relationship was suggested by Raul when he said:

The impact of my teachers on me is very obvious. I use a lot of the same skills or I try to but whilst adapting them for the current situation and the current environment. (EP3B)

A further example was provided by Claire who revealed that her method of demonstrating had been influenced by a postdoctoral researcher who had taught her when she was a doctoral student. She said:

We did have a Post doc who taught me quite a lot of things in the lab. I've probably used her kind of teaching method. I adopted that method of teaching which is basically I show the students once, then they'll do it with me watching once and then they'll do it on their own. If they need me they'll come and find me and they're not thrown in at the deep-end. (EP3I)

Karl illustrated that it was possible to utilise learning experiences from a different education setting which were less recent. This was illustrated by a quiz method that he used to check whether the research students he was working with had understood the lab safety manual correctly. This was a prerequisite of lab work and something Karl had specific responsibilities for as a Post Doc. It was revealed that the quiz method employed was based upon his experiences as an undergraduate learner in Russia more than a decade previously. He said:

We always had small tests after any tutorial. If you didn't answer the question properly then you were punished! Students did their best because they knew there would be a test..... So this is something that happened when you're a student in Russia. I found it very efficient, at least in my case. (EP3G)

Observations as a learner were also shown as a source of clues as what to avoid doing as a teacher. For example Flora, who had been asked to deliver a colleague's lecture, made a decision not to make changes to a power point presentation that had already been made available online to students. Reflecting on this decision, she explained it with reference to one of her own negative experiences as a student. She said:

I left his presentation, mainly due to the fact that I knew it would already be up on VITAL [the universities virtual learning environment], so the students would have already printed copies and have them. And that used to irritate me being a student, when people used to just change it on the day, or anything. So I think if they've...you know, if

they've been bothered to actually get the notes, then you should just leave them how they are. (EP3D)

It was also shown that observing practice as a learner impacted attitudes regarding the role of the teacher in the learning process. For example Victoria recalled how the behaviour of teachers in secondary school still resonated with her to this day. She said:

At secondary school we had a teacher in History and I grew up in a Socialistic country. We were covering a period during the Second World War and she was telling us that there was no difference between other socialism and fascism because they had the camps they had the oppression of free speech..... She wasn't afraid. She was just giving her best to these pupils so they have a wider view. These examples stay with me. Still today I can see her face. It still inspires me. (EP3J)

In a different context Claire revealed a student centred attitude to discovery that had been passed on from her PhD supervisor. She said:

She wouldn't necessarily say exactly how to write it, sometimes she would but a lot of the time she would say, "That's not quite right", and make you go away and work out where you've gone wrong or something rather than just telling you the answer. It is quite tempting to just tell someone the answer but in the end they're not going to actually learn from it. (EP3H)

Raul expressed this pedagogic imitation process as a form of inheritance.

Commenting on the reason why he used writing to explain problems to engineering students in support tutorials using the skills taken from the father he stated:

It's very natural. You have to use a pen and paper to explain things to people. Maybe I've inherited it from the lecturers that have lectured for me in the past. Of course at the end it's like a father and a son. When the son will be in the future he will to deliver to the sons. (EP3C)

Collaborative working

Another clear finding that emerged from the data concerned the value of collaborative working. Through the process of working with a more experienced colleague on teaching tasks a GTA could develop a shared understanding of particular teaching challenges. For example Flora had shared a lecture with her supervisor and described this collaboration as follows:

My supervisor had said that it reminded him of when he gave his very first lecture and kind of just being totally terrified when you're doing it. And he kind of recapped at the end of the lecture for them on kind of any little points that I missed. He [has] maybe spent like five minutes, just going over, because obviously it's important for the final year students that everything's covered and kind of he's got 30 years experience. (EP4B)

This practice (which was viewed in favourable terms by the GTA) highlighted the importance of providing GTAs with clear guidance about the standards expected for the tasks they were being asked to undertake.

The process of collaborating on specific teaching tasks showed itself to have particular value in helping GTAs cope with the demands of student assessment. This is considered important as assessment was an aspect of practice where GTA

confidence was shown to be an issue. Flora described aspects of her marking practice as 'incredibly difficult to start with' (LO1I). Marie was involved in the marking of course work and had to prepare written feedback on scripts. An experience she described as taking 'an incredible amount of time' (LO1D). Ian, who also had to mark coursework felt 'slightly uncomfortable with the notion of me being in a position of marking' (TR2C) while Claire remarked that:

I think it would be better to have some formal training on marking....I think it is a difficult thing. (LO1L)

Susan also found the activity of marking to present a new set of challenges, commenting that:

My big problem last year was with plagiarism and I find that quite difficult to know how much time to spend on it and how much to worry about it. I found that once I had discovered plagiarism I was treating then every essay as if it had a potential for plagiarism and it kind of takes a very long time to mark if you are doing that....(LO2H)

In the context of these types of assessment challenges the value of collaborative task working is clearly important, as the experience of Flora illustrates. She said:

That kind of surprised me with my supervisor, when I marked final year presentations, that it turned out we'd be sitting there, totally separate, writing our comments. We'd be giving exactly the same mark, which again, gives you more confidence in your teaching. Because I thought well, he's got 30 years experience, so if I'm doing this and it's okay. (EP4C)

Similarly Claire revealed how her marking duties had led to conversations with more senior colleagues about standards. She said:

I said I've never marked anything in my life. The first time we did we got criteria to use but I don't find them particularly helpful because the grading is so wide. She'd point out things to look out for; things that would lose the marks and things that would gain the marks. (EP4F)

Training

The value of formal teacher training as an intervention to help GTAs engage with their teaching roles was found to reveal a number of interesting dimensions. These included providing re-assurance, encouraging GTAs to think about teaching in new ways, and highlighting the importance of mediating artefacts.

Each GTA had attended one or more university training event to support their work as teachers. Brian described this help as 'beneficial' but did not know 'if it's necessary in the sense that I wouldn't be able to do it [teach] without it'. As an international doctorate student he said that it was useful to 'learn all the policies about what you can and can't do' (EP5G). The importance of this contextual knowledge about the institution and the UK education system more generally was also highlighted by David when he said:

Coming from the United States, these are all foreign concepts to me. You know, first of all, it's a three-year system here for a Bachelors Degree; I'm used to a four-year. It's the first year you basically don't grade ...the grading system was totally foreign to me. You know, I mean there's just a lot of different things I wasn't used to. (EP5I)

Teacher training was also shown to provide the GTAs with reassurance. Ian, who had started to teach prior to receiving any training said he felt 'slightly uncomfortable with the notion of me being in a position of marking and support, without having some degree of sort of formal training' (EP5E).

The value of training provided from out with their respective departments was identified as being of value for a number of reasons. For example Marie described it as:

Very useful because I got to hear that others in completely different disciplines have the very same concerns.....you are not the only man on the boat, and you are not an outsider, your worries are normal..... You are a beginner and you are facing similar issues. Your worries are very similar. It makes them less threatening, less of a problem, makes them very normal, things that one can deal with. So that was very encouraging. (EP5C)

This collective, inter-disciplinary nature of university training was also shown to be of value. For example Ruth said:

You know, whether you're marking a scientific report or an extremely long philosophy essay, as it might be in my case, or something that's somewhere in the middle, you're still going to need to try and make sure you're not biased and that the feedback you give is, you know, reasonably informative. (EP5F)

University teacher training was also shown that it could lead to doctoral students looking at and thinking about teaching in a different way. For example Marie said:

I had attended hundreds of lectures and tutorials, but I was always a participant, I wasn't observing how the class was being made and that was one of the reasons why I was happy to hear there was official training provided because it was the first time I was able to focus on how a lecture or tutorial is being carried out and I didn't have to draw from only my own experience of a student sitting listening, participating in. It's a different, a different way of observing. You focus on different things when you know that this is about how to teach.

(EP5D)

However it was also shown the formal university training could not provide the all the necessary knowledge, skills and confidence to operate effectively in their roles as GTAs. For example Sabine made the distinction between:

A broad concern problem that is another department's as well, then central support would then be, you know, applicable and would fit nicely. But if it's only something that's quite particular to the Institute, then I think it should be resolved within the Institute, because it's just too specific. (EP5A)

While Marie, commented that the university training could not provide her with:

The blessings of the experienced members of staff who has done it a thousand times (EP1G)

This suggested that there may be merit in adopting a training strategy that combines both formal and informal learning process working together and providing a more holistic support structure.

As part of this holistic support structure the practice of providing GTA with a range of mediating artifacts to help them make sense of their teaching roles emerged as important. Flora had received a tutorial handbook that gave 'hints and tips of what to do in the tutorials'. She described these as:

Great, because it was something you could actually look at, anytime...
you could just keep having a quick flick through it when you didn't
have any ideas. (EP5H)

Rick had received a 'lab script' (EP5K) while Susan had received 'quite a good handbook' which she described as 'quite well structured in the sense he gives me an idea of what questions we need to ask'(EP5J). These artefacts which had been prepared by academic members of staff provided reassurance to GTAs as to what was expected. The experiences of Flora illustrate this function. She said:

I think if I'd had to write it, I would have been increasingly nervous. I
could modify it if I wanted to, I could add anything in, because
everybody kind of has a different flow for how they'll give their
presentations.....It was kind of left for me to kind of make sure that I
was up to date on it.....but you didn't want to mess around with it too
much. (TR2G)

It was also shown that mediating artefacts were made available by a fellow GTA who had taught the session previously. Rick described his experience as follows:

We had a face-to-face meeting... maybe about one or two hours.

Although I have some relevant background knowledge...he told me the
students spent too much time doing calculation rather than doing the
experiment because they are key to getting an accurate result which is
not very important. I think the most important thing is the

understanding of this lab. We met here. At that time the equipment was not ready. Only this was ready and he told me that we need a broad table, we need a projector and he actually gave me a list. (EP1M)

Barbara had received a module handbook and a briefing with the module coordinator to go through her teaching. She described this process as follows:

I would say 40/45 minutes [length of meeting], I mean for him to go through the handbook with us. And he picked up every single seminar and reading list for each seminar, saying maybe this is more relevant, this is more relevant, this is about...you have to make sure that they do...tackle only the main issues behind this seminar, things like that.

(EP5L)

However Barbara felt that she needed additional support and arranged to meet a fellow GTA who had taught the module previously. At this meeting the GTA's own personal notes were used as a form of guidance. Barbara described the value of his encounter as follows:

She came with me to my office with her folder, with all the photocopies and the material that she had been using. And she...well, for instance, we went through the module generally, like reading list and things like that. I asked her what did you do? And for instance, for me, I wasn't sure about this system about week one, week two, I didn't know anything about it. So I had a chance to make very stupid questions in terms of like which week is week one, is it the first week after exams. (EP4E)

4.3 Findings: research question 3

What kinds of learning do teaching opportunities provide postgraduate and postdoctoral researchers?

Changed understandings

A clear finding from the interviews was that opportunities to teach could have resulted in GTAs developing new understandings of both academic work and about *who they are* in terms of their preferences, talents and values. This learning was identified as contributing to the development of a professional identity.

Commenting on his teaching David said that 'it did open my eyes to a few different things' (LO1) while Marie, recalling an incident with an academic colleague said:

I was very surprised when a full member of staff, who has been at the university for years, and who has taught 'Sound to Speech' for years, met me in the corridor, two weeks ago, and said 'if I'd known you were here I would have asked you, these vowels are killing me, I hate them'. And I thought, 'Yes I hate them to' and I never thought we would get into such a level of communication with anyone who has done this for years. I never thought anyone who has taught this course for years could ever tell me I could of asked you and could have expressed themselves so freely about hating the subject of the day and being completely uncomfortable with it because they are completely non expert and they feel the subject really requires an expert and 'I'm so apprehensive, I struggle to keep one step ahead of the students' I never

expected that kind of thing and that was to me real 100% eye to eye colleague exchange. (LO1C)

Such an encounter signified acceptance by a fellow teacher and through this acceptance access to previously hidden knowledge was revealed. A similar illustration was provided by Susan who recalled how a chance incident on the morning of the interview. She said:

There were two people in the room where we collect mail and 2 different people said 'do you want to come?' because it was a meeting where they were going through their exam questions with each other to check they all make sense. It's not an enjoyable meeting. It's a bit you know and they say it's a bit [grumble noise] and they say do you want to come, so even something like that, it's kind of nice. (EP1L)

In this instance Susan's colleagues had identified her in the role of teacher and she had gained their trust to be invited to join their community of practice. However Susan then added that invitations to join some other communities of practice were not always forthcoming. She said:

So for example you won't be included in an email about general teaching stuff sometimes because it just goes to staff and then you won't know about certain things, or you won't know about how certain things are done because you are not necessarily on that round robin email.....you are not always sure in terms of things like resources, photocopying or something, you don't get as much allowance as staff, although you are doing teaching that has 50 odd students, you know things like that. (TR2J)

Reflecting on her role she described it as being 'a little bit in limbo being a post grad and doing some teaching' (LO1K). This state of mind resonates with Thornton and Nardi (1975) and their theory of individuals going through a period of adjustment during role socialization and is shown to be particularly problematic when the GTA perceives their status as ambiguous in the way described by Muzaka (2009). The view of Marie illustrates this issue. She said:

They see you as a colleague, more or less, not as a student doing some part-time job? I get the impression they really see you as a colleague.

It's your first time round, but you are still a colleague..... not completely, not entirely, but half-ways, yes. (LO1A)

And this 'half-ways' identity was shown to be the source of anxiety. Marie said:

Well, as I said. I'm half-way there. I'm a half-way colleague. So sometimes I am a bit apprehensive about, [oh it's difficult], and it's a of, a first experience, so I'm not always sure exactly how to behave, I'm a half way student, half-way colleague, so the behaviour is somewhere in between, so I'm not sure I'm a 100% of a colleague. (LO2A)

In Flora's case she was also concerned about her age 'you're young and you kind of look young' (LO1G) while in Marie's case such anxieties made a decision regarding what clothes to wear while teaching difficult. She said:

When I first came into the class I was worried about me not being English. I was worried about how they would react to me having an accent and maybe not being perfect grammatical all the time or perfectly fluent all the time. I was worried about my age. That they might not, you know might not have enough respect for me, immediately. I was worried about dressing codes. Because I didn't even

know about the dressing codes, about the culture are, in terms of the academic environment. (LO1B)

However the experience of teaching had addressed these concerns and developed a greater sense of cultural awareness. Similarly Raul had previously taught at a public university in Iraq and a private university in the United Arab Emirates. Through this work he had learnt that no two teaching workplaces are the same and that adapting to institutional norms would be necessary. He said:

Lecturing in a certain country is totally different than lecturing in another country because of the policy of the university, the mentality of the administrative staff of the department, the culture and of course the student. I've seen two different cultures and two different ways. Then when I came here it's like one more place, a third place. (LO1E)

It was also shown that the process of teaching could encourage the GTA to think about their subject in new ways. A key aspect of this 'new thinking' was working out ways to communicate their knowledge to a new audience. This is illustrated by Brian when he reflected on how best to structure a session:

So it's also been a way for me to learn what approach, what way to approach the material works best for me, in Philosophy you can take what's called a historical approach, or a subject matter approach. You can talk about the subject matter and talk about what the, the subject matter itself, like the Philosophy of Mind. Is the mind separate from the body or are the brain and the mind the same? You can address it that way and just talk about issues. Or you can take what is called a historical approach where you look at classical philosophers and what

they say on these topics and use that as the means for analysis. I've found that for me the historical approach is probably the way to go.

(LO1F)

While the opportunity to teach resulted in Ian returning to his previous learning.

He said:

It sort of forced... sort of gave me the opportunity to sort of read up about an area which I hadn't necessarily sort of, you know, specialised on, or at least hadn't looked at for quite a while. (LO2C)

Updating subject knowledge was also identified by Brian as being important when preparing for a teaching session. Describing his preparation, he said:

I can read the contemporary writings on these things in areas which aren't my specialisation. (LO2E)

Having therefore to read or re-read, as a consequence of having to teach, was an important mechanism through which subject knowledge could be developed.

Changed actions

Another clear finding from the interviews was that new understanding revealed through teaching opportunities also brought about changes to actions. This was clearly illustrated by the ways in which pedagogic practices had been informed by experience. For example Marie recalled the decision to reduce the quantity of feedback she provided to students based on a new understanding of student behaviour. She said:

When I first turned to my comments sheets I really had the idea in my head that the student would get this comment would really go through the comments and would really going to apply them all. After my second

round of coursework, from the same people, I thought 'I don't think they do', so I'll cut down on my feedback because it is not worth my time. And that was the stark reality. (LO2B)

An outcome for Susan was learning a particular strategy for asking questions in a seminar. Commenting on the opportunity to repeat the same task on more than one occasion she said:

There's nothing that can replace experience and I've just had more experience now because when you first start I think things like there just being a short few seconds of silence after you have asked a question you get really worried about and you're not quite sure how to deal with it because you think this isn't working, but you haven't got as much capacity to or flexibility to change your style or change what you are doing. But also you are more confident to leave the silence for a little bit, because you know they might actually need just a little bit longer to think about it and then they can answer. (LO2G)

Similarly Brian considered that his lecturing technique had improved through repeated encounters with students. He said:

So these two sessions of Introduction to Philosophy have helped me quite a bit to learn how to break up a lecture into segments about 20 minutes or so, where typically peoples' attention span runs around 20 minutes or so. So I spend about 20 minutes talking about the topic then I get people to talk about it in class what they thought of the material and then you have to make sure to not let one person dominate because that becomes an issue too. Early on when I first did it was almost like a conversation between me and one or two other people in the class. That

wasn't the same the last time I taught it, so I thought I improved on that somewhat. (LO2F)

Learning through doing was also illustrated by Raul who was faced with the challenge of communicating to certain groups of international students. He explained how his solution to this problem had been learnt through experience.

He said:

Maybe I can't use the right word in the right places. Their language as well. Their understanding of English. We have to be very careful to use an easy word. We try our best to solve this problem using other kinds of ways. Directly we use the board to draw things so that we can minimize the number of words. (LO2D)

Another illustration was provided by Victoria who had been to a formal training event to prepare her for the role of a PBL tutor. After this formal training and prior to her first session she recalled her uncertainty regarding what might happen in the classroom. She recalled:

I wasn't really sure. I had some ideas but until you go into the PBL session then everything is just an idea because it was my first group which I started from scratch. I didn't know what to expect or how to deal with them.....One thing I was not confident in is how strict one can be with British students. I know from my time in Bulgaria and so on. I've never been through formal education in the UK. (EP5M)

During the teaching session she exercised discipline based on her understanding of what the role a PBL tutor should involve. Based on feedback she subsequently received from students this approach was identified as the correct one and something she would replicate in future. She said:

The thing which they said they liked was that they found it very good that I forbid them to use notes during the PBL sessions because this defies the purpose of PBL. If they have the notes and books then they can read. The aim of PBL is to stimulate their thinking and their common knowledge to draw from each other's knowledge. (EP2D)

Chapter 5: Discussion

5.1 Introduction

Using the metaphor of a bridge the first part of the chapter discusses what was revealed about the learning that the postgraduate and postdoctoral researchers gained from their teaching opportunities. Discussion is organised into 3 sections with teaching conceptualised: as a bridge to the development of disciplinary knowledge; as a bridge to the development of interpersonal skills; and as a bridge to the development of professional attitudes and habits.

The second part of the chapter then discusses what was revealed about the factors that could either help or hinder postgraduate and postdoctoral researchers to cross the bridge and maximise the full learning potential from their teaching experiences. These factors are conceptualised as enablers of learning which universities have the potential to influence. Factors discussed are: teaching opportunities (quantity and quality) and opportunities for dialogue about teaching.

5.2 Teaching as a bridge to disciplinary knowledge

Austin and McDaniels (2006), in their review of the North American literature, highlight a range of learning outcomes from graduate socialisation that can lead to an enhanced understanding of an academic discipline. With its focus on the teaching experiences of postgraduate and postdoctoral researchers evidence from this study also revealed this to be the case.

The majority of GTAs in the study had the opportunity to teach on programmes within a particular academic discipline and it was clear from the study that these opportunities could enhance their understanding of the discipline within which the teaching was located. This was clearly the situation with many of the GTAs who sought to enhance their knowledge of a particular topic within their discipline because they are required to teach that topic. For example the case of Barbara who felt she had to read herself what was on the students' reading list or Ian who went back to his previous learning as an undergraduate, and looked at it again, only this time from a teacher's perspective.

What behaviour of this kind suggests is an individual focusing on a form of self improvement that is motivated by a belief that as teachers they are expected to 'give something' to their students. Writing over 40 years ago and based on her research into the concerns of new teachers, Fuller (1969, pp.220-221) found substantial evidence that many new teachers during the early stages of their career focus on a form of development she refers to as 'content adequacy'. She explained this as follows:

The concern student teachers feel about class control is no secret. It is a blatant persistent concern of most beginning teachers. Ability to control the class however, is apparently just part of a larger concern of the new teacher with his adequacy in the classroom. This larger concern involves abilities to understand subject matter, to know the answers.

From the findings of this study content adequacy therefore remains a key driver that will encourage many GTAs to learn about specific areas of

disciplinary knowledge, particularly in light of prevailing discourses in UK higher education that highlight 'value for money' and 'the student experience'. However evidence from the study also revealed that opportunities to teach offered more to postgraduate and postdoctoral researchers than the opportunity to enhance their knowledge about the discipline. It was also revealed that teaching helped them to develop an awareness of the values, assumptions and practices that underpinned this knowledge.

Bloxham (2008, p.1) has argued that to succeed in higher education, it is not about simply absorbing and recalling knowledge about the discipline, but you need to 'understand how the discipline works'. A good illustration from this study on how teaching can illuminate the workings of a discipline was revealed in cases where opportunities to teach also led a GTA to be involved in student assessment. Student assessment is one of those areas of academic work that is frequently undertaken with other academic colleagues. This joint working will normally require individuals to form an academic judgment as to the quality of a students' performance within the discipline. I would suggest that one outcome that emerges from this process is learning what Austin and McDaniels (2006, p.421), have called 'the criteria for excellence' within the discipline. Findings from the study certainly point to this possibility with discussions about assessment standards leading to enhanced understanding about criteria for excellence, sub-standard performance and various points in between. Several of the GTAs in the study had the opportunity to jointly mark work with a more experienced colleague and commented on how this led to the development of a shared understanding.

Such experiences resonate with what Kirk and Todd-Mancillas (1991) would term a 'turning point' experience, signalling to GTAs that they have the intellectual competency and compatibility to succeed in the academic community where they are now located and support Arnal-Gonzalez and Burwood's argument that professional judgment comes from 'repeated engagement in the appropriate activities in the company of those with expertise' (2003, p.388). This is also illustrative of the wider theoretical perspective of learning situated in practice and ideas about communities of practice (in this case communities of assessors) as providing repositories of knowledge that are of value to the individual (Lave and Wenger, 1991).

Evidence from the study also revealed that opportunities to teach offered insights into products (e.g., books, articles) and pedagogic methods that were valued within a discipline. As part of their teaching experiences all of the GTAs came into contact with products of the discipline such as reading lists, seminar and lecture programmes and syllabuses, all of which are examples of mediated artefacts which signify what is valued within a disciplinary community. With reference to pedagogic methods the case of Marie was particularly interesting in the way it that it illustrated the power and influence of a representative of her discipline (a more senior colleague) in shaping her learning about what teaching approaches would be of most value with her students. While she had attended university training, and had found the experience 'useful', she felt it did not give her the 'blessings of the experienced members of staff who have done it a thousand times'.

Such an experience is perhaps indicative of the way in which a doctoral student will develop both technique and what counts as knowledge in a field. This is reminiscent to what Shulman (2005, p.54) terms *signature pedagogy*.

Signature pedagogy has.....a surface structure, which consists of concrete, operational acts of teaching and learning, of showing and demonstrating, of questioning and answering, of interacting and withholding, of approaching and withdrawing. Any signature pedagogy also has a deep structure, a set of assumptions about how best to impart a certain body of knowledge and know-how. And it has an implicit structure, a moral dimension that comprises a set of beliefs about professional attitudes, values and dispositions.

While Shulman draws his theorising from evidence situated in professions such as Law, Engineering and Medicine his notion of 'modes of teaching and learning that are not unique to individual teachers, programs or institutions' may be applicable to the way in which postgraduate and postdoctoral researcher develop as teachers. Perhaps for these novice teachers, the process of legitimising their status within a community of practice (and the potential benefits that can be accrued) results in an acceptance of the surface and deep structures implicit within the notion of a signature pedagogy. If indeed this proves to be the case then it is possible to hypothesise that conforming to these structures will lead to the reproduction of signature pedagogies through successive generations of teachers in higher education.

Evidence from the study also revealed that opportunities to teach could develop a greater awareness of how universities work and where a discipline can fit into

other aspects of university life. Austin and McDaniels (2006, p.420) make the argument that in preparation for an academic career an individual should 'understand how their work and professional interests may relate well (or not) to institutional history, expectations and norms'. Such an understanding it is argued should go beyond knowing about the discipline where the individual is located and should also include an awareness of how universities work in all their complexity. Indeed within some disciplines GTAs could learn about what Hopwood (2010a, p.320) terms universities 'outreach work'. For example some of the GTAs in the study had the opportunity to teach courses within Continuing and Adult Education in addition to undergraduate teaching. In these situations the GTA would be meeting a different kind of learner with different aspirations and in doing so learnt something about the scope of the university's work in servicing the needs of the wider community.

Opportunities to teach were also shown to help postgraduate and postdoctoral researchers to develop an enhanced understanding of the wider aspects of university life including exposure to the universities regulatory framework. Teaching, learning and in particular assessment are areas of university life that are governed by a diverse range of policies and regulations. These policies reveal much about the complexities of how a university functions together with communicating a particular academic vocabulary. While learning about policies and this vocabulary was a feature of the formal training that the GTAs experienced, it was also revealed that a number of the GTAs had opportunities to experience firsthand the influence of university regulatory policies on practice.

All of the GTAs in the study had attended a university teacher development event to promote skills development and an understanding of university policy. The organisation of these events meant that they were open to any GTA from across the university and had a focus on generic learning and teaching and assessment topics. This gave the GTAs the opportunity to meet GTAs from other disciplines and acted as a forum for the sharing of ideas and experiences. This I would suggest offers the potential for enhanced interdisciplinary understanding and while this was not explored fully in the current study, it does provide a potential line of enquiry to explore in subsequent research. These types of events also provided a network of support for GTAs, reassured by the fact that they could meet GTAs from other disciplines who shared similar concerns about their teaching.

5.3 Teaching as a bridge to interpersonal skills development

On the basis of the discussion so far I have highlighted that undertaking teaching can provide postgraduate and postdoctoral researchers with a variety of knowledge and conceptual understandings about how a discipline works and fits into other aspects of university life. These are considered important learning outcomes for prospective academics, and as Austin and McDaniels (2006, p.421) have argued, this will help future faculty members 'to appreciate as well as critique the work of colleagues and to engage in cross-disciplinary research, curriculum, and teaching endeavours'.

In addition to developing learning of this kind the study also revealed that working as a GTA can also facilitate a range of interpersonal skills that are

necessary to work with others in academia. If the GTAs experiences are reflected upon using Michael Eraut's typology of early career learning (Eraut, 2007) it becomes apparent that the variety of tasks that are embedded in teaching offers considerable potential in this respect. Teaching was shown to provide GTAs with a reason to ask questions and obtain information; to develop listening and observing skills; to reflect; to learn from mistakes; to use information technology and to collaborate and work in teams.

It can also be highlighted that many of these interpersonal skills articulate to Vitae's Researcher Development Framework (RDF) that was discussed in Section 1.2. For example the RDF highlights the importance of *Working with Others* as a key domain early career researchers should seek to develop. This suggest that many of the teaching situations that GTAs encounter will offer the potential for quite sophisticated interpersonal skill development, similar to the 'rich pedagogic environments' conceptualised by Boud and Lee (2005). The case of Raul was particularly illuminating in this respect who was teaching in a second language and confronted with the task of running support tutorials for students who themselves were international. Raul's decision to use pen and paper drawings as an effective method of communication in these situations demonstrates both the development of the cognitive skill of problem solving as well as developing the ability to appreciate diversity and work with a diverse audience. This 'learning from doing' very much resonates with Hopwood's findings about 'how much learning arises *in situ* out of the challenges associated with engagement in different forms of practice or social interaction' (Hopwood, 2010b, p.840).

5.4 Teaching as a bridge to the development of professional attitudes and values

In addition to identifying learning outcomes that are concerned with the enhancement of disciplinary understandings and interpersonal skills, Austin and McDaniel's work highlights a further outcome of the socialisation process which they refer to as the development of professional attitudes and habits. This covers aspects such as learning about ethics and integrity, learning to cultivate professional networks and developing 'professional identities as professors and scholars' (Austin and McDaniels, 2006, p.421).

With the exception Susan's opportunity to be involved with a case of suspected plagiarism, which I would suggest has the potential to enhance understanding of issues related to academic integrity, the study revealed little evidence that teaching could enhance learning about ethical issues. (That is not to say such an outcome is not possible). However the study did reveal much more evidence showing a relationship between teaching opportunities and the cultivation of professional networks. For example David's teaching introduced him to his Head of School, Victoria had the opportunity to meet other PBL tutors, Susan was invited to an examiner's meeting while all the GTAs in the study established new networks with other GTA tutors. While the kind of learning contained in these new networks was not explored, I would suggest that in many cases the development value to future career aspirations could be significant.

The study also revealed evidence showing how identity construction, of the kind conceptualised by Lave (1996), was likely to be a learning outcome that was

facilitated through teaching. Dobrow and Higgins (2005) have suggested that developing an awareness of one's professional identity is a metacompetency that can help individuals to successfully shape their careers and therefore better realise their potential. Such a view is based on the argument that once an individual has an awareness of *who they are* in terms of their preferences, talents and values, (a clear professional identity), they will then be more integrated and committed to the roles they are performing. However as Ibarra (1999) has noted the development of a professional identity is likely to be a fluid process particularly during the early stages of a career with individuals developing ideas and reflecting on who they might like to become, what Ibarra conceptualised as 'building a repertoire of possible selves' (1999, p.774).

From the findings of this study it was shown that as a consequence of *having to teach*, GTAs think about other teachers they are familiar with. One possible outcome of this thinking will be a source of ideas for possible professional identities for themselves. In other words, through their engagement with teaching the GTAs recall role models of the kinds of teachers they might like to become and these role models have the potential to shape professional habits and values. As was shown from the study, in some cases, the prompt to think about another teacher could result from a requirement to observe a more experienced teacher as part of their preparation for the role of GTA. In other cases the reflection was stimulated by teachers who the GTA had been taught by at various points in their educational careers.

The GTAs use of their pedagogic memories to stimulate thinking about the teaching emerged strongly from the interviews and clearly resonates with the anticipatory stage of role socialisation as put forward by Thornton and Nardi (1975) and their insight concerning the use of 'generalised' sources to inform expectations of a role. This finding is consistent with the research showing the importance of part-time teacher's own histories as learners to their teaching practices (Knight *et al*, 2006, 2007) and in particular Austin's longitudinal research which found that typically doctoral students learned about teaching by recalling past experiences as learners, and then identifying certain teachers as exemplars to emulate (Austin, 2002). The case of Flora from this study aptly illustrated this relationship through her belief that she should present a style to her students as somebody who was approachable with students with accessible office hours, a belief she had developed from her own experiences as an undergraduate student.

This relationship between belief and behaviour (through a process of observation and imitation) resonates with what Ibarra conceptualises as role prototyping and role matching (Ibarra, 1999) with the case of Marie illustrating the theory that individuals can build up a 'repertoire' of possible professional selves which they then go onto enact and then evaluate through experience. During the interview Marie expressed concerns about the similarity in age between herself and the age of her students (an internal evaluation). From this she contemplated on how she should dress when meeting the students for the first time (*should she dress more formally?*) but on meeting and receiving a reaction from the students (an external evaluation) this issue of her appearance became less of an issue. She then recalled a 'corridor conversation' with an academic colleague who was open to her about

his own limitations as a teacher. She was surprised by his openness during this exchange describing this as a 'teacher to teacher' conversation (an external evaluation), from which I would suggest she was beginning to develop the belief that her new identity as a teacher was now being endorsed. However Marie still described herself as 'a half way colleague' a reaction that suggests her new found professional identity was still not fully formed, but that the experiences being provided by teaching were providing Marie with a 'taste' of what becoming an academic would be like .

The case of Susan provided another good illustration of this process of identity discovery. Here we had a GTA who had delivered seminars with a colleague and had gained significant insights into teaching and learning from her classroom experiences. She now had the opportunity to attend an assessment meeting, which at the time of the interview she seemed inclined to accept. Given this access to another area of academic work, it is reasonable to assume that participation in this meeting would offer her the potential for further learning, and perhaps more significantly send a signal to her that she was becoming increasingly accepted in the role of an academic. This would appear to be a significant moment for Susan as it represented a form of identity transformation with parallels to Lave and Wenger's concept of legitimate peripheral participation (Lave and Wenger, 1991). Fuller and Unwin (2003) would describe Susan's as 'boundary crossing' in the sense that she is moving from the periphery of academic work to being closer to the centre and in the process becoming an academic.

A further example of this boundary crossing was provided by Flora who had the opportunity to undertake a joint lecture with an academic colleague. This very public acknowledgement of Flora as part of the teaching team I would suggest is a significant moment for her, signalling to both herself and the academic community that her status as an academic was becoming legitimate. This would certainly be the view of Marie who perceived there to be 'different levels' of teaching in existence. According to Marie the tutorial teaching which she currently undertook was at a much lower level to the higher level of giving a lecture, a level to which she aspired to and which would provide her with confirmation that she was making the transition from postgraduate research student to academic.

From the discussion so far I have argued that teaching experiences can provide postgraduate and postdoctoral research students with forms of learning that will be helpful to the development of an academic career. This academic learning has been conceptualised using a framework developed by Austin and McDaniels (2006) with many of the findings revealed in their work also replicated here.

However Austin and McDaniels also highlight that many of the learning outcomes for an academic career that may be derived from graduate socialisation may not be fully realised due to a range of institutional factors beyond the students control. Significant amongst these is what they refer to as 'lack of systematic and developmentally organised preparation'. What I interpreted Austin and McDaniels to mean by this is that experiences of graduate education are on their own unlikely to produce high quality academic learning. Universities also have a role to play in helping individuals make sense of their graduate socialisation experiences and how these experiences may support the development of an academic career. Indeed in the case of teaching Austin and McDaniels highlighted

that many GTAs in North America are used simply to service the teaching needs of the institution as part of a systematic preparation for an academic career.

Evidence from this study also confirmed this to be the case with considerable variation in the ways that university departments viewed teaching as a developmental activity to support an academic career.

The second part of the chapter will discuss this variation in more detail and in doing so highlight a number of systematic and developmental practices that are likely to improve the quality of the learning that a GTA could derive from their teaching experiences. Drawing on Fuller and Unwin's work discussed in Chapter 2, these practices are conceptualised as *enablers of academic learning* and are presented under two categories: opportunities for teaching hours (quality and quantity); and opportunities for dialogues about teaching.

5.5 Opportunities for teaching – quantity and quality

Ramsden (1998) has argued that in situ training is generally effective for developing knowledge, attitudes and skills in teaching. However what the findings of the study revealed was that those in situ opportunities to do actual teaching, both in terms of quantity and quality of teacher hours, were variable. It was found that a number of GTA had recognition of their teaching status through their scholarships and a commitment by the institution to guarantee teaching hours, for example Brian and Marie. However other participants in the study, most notably the self funded doctoral students, found themselves in situations where the university was under no obligation to offer them teaching experience.

The cases of Ian and Ruth provided an interesting illustration of this predicament. While Ian was hopeful of picking up some teaching work, this would be dependent on ad-hoc opportunities becoming available. Ruth was finding it particularly difficult to find teaching opportunities based on her area of expertise. She was aware of financial constraints within her department and of the priority given to doctoral students on a scholarship. Just finding teaching work rather than consideration of the nature of this work was a priority, as evident by her speculative attempts in contacting other departments. At the time of the interview she had not been offered any teaching. This suggested that both Ian and Ruth are being restricted in their development as teachers within a community of practice model of workplace learning. This has similarities to the contrasting experiences of the apprentices in the Fuller and Unwin (2003) study which led them to characterise institutional arrangements as being either expansive or restrictive in their approaches to apprenticeship. It is also likely that the predicament of Ian and Ruth is not unique amongst UK doctoral students with evidence from elsewhere suggesting that opportunities to teach are often unclear (Hopwood and Stocks, 2008). As was highlighted in Chapter 1 this situation may become more of an issue in light of current reforms in UK higher education policy. These reforms are setting an agenda where there is an increasing emphasis on the quality of university teaching, which I would suggest will put into sharper focus questions regarding *who* does the undergraduate teaching. Whether this then might curtail the opportunities for 'apprentice' teachers is a possibility and a factor likely to influence the quality of academic learning.

However, it is not just a case of providing GTAs with a sufficient quantity of teaching hours that is considered important to the development of academic learning. I would suggest that these teaching hours have to be of a sufficient quality.

One of the interesting findings from the study was the variation in the nature of teaching tasks the GTAs were being asked to undertake. In particular two dimensions of this variation are worthy of note. Firstly, with what could be termed variation in the breadth of teaching opportunities. In other words some GTAs could experience a very narrow range of teaching tasks such as teaching a particular laboratory or tutorial. In other cases the GTAs were asked to undertake a much broader range of teaching tasks that also included assessment and administrative tasks. For example the contrasting experiences of Rick who taught the same laboratory session repeatedly to different groups of students compared to Raul who undertook a variety of teaching tasks at both undergraduate and postgraduate level.

The second dimension of variation concerned the degree of autonomy that the GTA had in deciding how to execute a particular task in practice. At one end of a spectrum there would be no creative input from a GTA and he or she would teach as instructed. At the other end of a spectrum a GTA could exert a high degree of control over the design of the teaching task. This I would term providing a depth of teaching opportunity. Compare for example the cases of Ian and Susan. Ian a first year doctoral student who had just begun teaching had his first tutorial planned for him. In effect he was following someone else's teaching script. On the

other hand Susan, a final year doctoral student, while required to work within a set framework of seminar topics, was given much more freedom to choose what the students should read, the design of activities in the classroom, and what examples to use to facilitate seminar discussion. Susan's department had empowered her much more than the case of Ian, and I would suggest that this empowerment of practice is more likely to lead to the expansive forms of learning (in this case academic learning) of the kind alluded to by Fuller and Unwin (2003).

While acknowledging that universities will have quality assurance considerations concerning the delivery of their programmes, and that many GTAs, particularly during their early stages of their teaching may prefer less rather than more autonomy in the design of teaching tasks, I consider that as a guiding principle GTAs should therefore be offered teaching tasks that offer both breadth and depth of experience as is realistically possible. This I would argue would be a key enabler in realising the full learning about academic practice that can be acquired through the activity of teaching.

5.6 Opportunities for dialogue about teaching

The findings from the study also suggested that the quality of the academic learning that a GTA can derive from a teaching experience will be greatly enhanced when they have opportunities to have a dialogue about teaching with more experienced teachers working in the same environment. This is perhaps not that surprising and the situated nature of this learning resonates with the notion of learning from communities of practice (Lave and Wenger, 1991) and tacit knowledge in professional work (Eraut, 1994) creating what Lomas and Nicholls

(2006, p.145) term 'local learning'. However it was also shown that institutions can be proactive in facilitating these dialogues and practice was shown to be variable in this respect.

For example it was shown that departments could facilitate dialogues about teaching amongst their GTAs as an outcome of a teaching observation, either when the GTA had their teaching observed, or where the GTA observed the teaching of another colleague. This approach resembles the models of peer review of teaching identified by Gosling (2002) and has been shown to have a high impact in helping university teachers develop their skills as reflective practitioners (Prosser *et al* 2006). It has also been highlighted by Lomas and Nicholls (2005) that peer review of teaching schemes can vary in emphasis. At one end of a scale there are schemes which are judgemental in their focus and are primarily used as an instrument of quality assurance for teaching. At the other end of the scale peer review schemes can be more formative and developmental in their emphasis.

The case of Flora in the study provided a good illustration of this practice. In her case a more senior colleague observed her first teaching session with students and offered supportive and constructive advice at the start of a teaching cycle. This is considered important as it provided to the GTA an early signal about their teaching performance. It is likely that these early signals will be both a source of reassurance for future teaching sessions together with identifying any areas for improvement. In the case of Marie it was the fact that she had undertaken one tutorial and had received immediate feedback on her performance that was

important. This created a feeling within her that she would now be able to do 'the next 12'.

Writing about the relationship between feedback and performance Nicol and MacFarlane-Dick (2006) have argued that an individual can only make 'good' an expected performance if they understand what the expectations are. They make the important point that in processing feedback many individuals will not automatically be clear about this expected standard, a point that will be pertinent to many GTAs, who as the study revealed, are often from a different educational system. Nicol and MacFarlane-Dick highlight the importance of dialogue to developing a shared understanding of expected standards between novice and expert. Sadler makes a similar point, noting that for students to be able to *compare* actual performance with a standard, and then to take action to close the gap, then they must already possess some of the same evaluative skills as their teacher (Sadler, 1989). I would suggest that peer review of teaching practice of the kind experienced by Flora offers much potential in this respect, developing her ability to troubleshoot and self correct her own performance and become less dependent on an external expert.

A further argument for the use of peer review of teaching schemes that are formative and developmental in their focus concerns the collegial nature of this practice offering a number of potential benefits for the GTAs. These benefits are likely to include an exchange of different perspectives, the sharing of ideas for future practice, identifying areas for on-going professional development and identifying areas for future collaboration. For example David who considered

himself 'an experienced teacher', felt at ease asking questions after having the opportunity to observe another colleagues practice. In Marie's case her relationship with her more experienced colleague (who was also her supervisor) had progressed to the sharing of a lecture where she felt she was able to utilise her area of expertise. These practices resonate with Fuller and Unwin's observation that more expansive learning environments will have as one of their characteristics named individuals acting as dedicated support. However evidence from the study revealed considerable variation in collegiate acts of this kind with a number of the GTAs receiving no support of this kind.

This finding is consistent with what has been written elsewhere about the implementation of peer review of teaching schemes. For example Lomas and Nicholls (2006, p.140) have stated that 'a major stumbling block to peer review of teaching has been the reluctance of academics to be involved or engage with the process'. In analysing the reasons as to why this may be the case the authors highlight the disparity in the incentives for performing well in research compared to teaching, with performing well in the former more likely to be used as the basis to promote staff. While this will not be the case at all universities, it is considered likely that a peer review scheme for GTAs that has little in the way of institutional recognition or rewards will find difficulty when trying to engage staff, particularly given the often ambiguous status of GTAs within a department. As Lomas and Nicholls (2006, p.140) argue 'it is imperative that understanding, managing and implementing a peer review process takes account of the realities of academic life', otherwise I would suggest such schemes are likely to be perceived negatively as

time consuming institutional initiatives. As Lomas and Nicholls (2006, p.141)

argue:

Peer review of teaching is more likely to be accepted by staff if there is an institutional recognition with rewards and incentives structured to demonstrate to departments that participation in formative peer review of teaching is valued.

This last point is significant as it highlights to the educational developer the importance of understanding the cultural nuances of departments, their values and how these may impact on initiatives that are seeking to enhance teaching. As Bamber (2002) has argued, departments traditionally have a lot of power within universities and it is essential to take account of this.

Opportunities for a dialogue about teaching can also be facilitated by a GTA attending some form of learning and teaching event provided by a university. At the university where this study was undertaken the focus of these events was on skills training and providing knowledge of institutional policies about learning and teaching. The literature suggests that such a focus is typical for the sector as a whole (Muzaka, 2009; Knottenbelt et al 2009). While events of this type would appear to offer short term benefits for the GTA, the extent to which there is longer term value is perhaps less certain. In particular there is a question concerning the extent to which these events can develop within the GTA a change in their beliefs about learning and teaching that will lead to an improvement in the quality of student learning.

The case of Brian is revealing. His perception was that he had found the events he had attended helpful as it had provided him with knowledge about the UK education system and about what 'you can and cannot do'. However there was no indication that his beliefs about learning and teaching had been changed in any significant way as a result of attending these short training courses. In Brian's case (a GTA with prior teaching experience in a different educational system) he felt confident enough to teach without any training. Such a view is consistent with findings from other studies that short training courses have limited impact in changing beliefs in learning and teaching (Weimer and Lenze, 1997; Postareff *et al*, 2007).

One of the particularly interesting things about the study was the revelation that prior beliefs about teaching and learning were often well established amongst the GTAs who were interviewed. This resonates with previous research that suggests teachers' approaches to teaching are related to their previous experience and conceptions of learning and teaching (Trigwell and Prosser, 1997). Gunn (2007) argues that GTAs beliefs as to what constitutes good learning and teaching are already well established and are learnt during the period of undergraduate socialisation. For example Karl had drawn on experiences from his undergraduate education to inform how he went about explaining safety procedure in the laboratory. It was also shown that GTAs' beliefs about learning and teaching at university could be formed prior to undergraduate university education. Examples provided by Raul and Victoria illustrated the ways in which pre university educational histories could shape the development of beliefs. However the important point to highlight is that many of these beliefs about

teaching may not necessarily be congruent with what is generally viewed to be quality learning. For example the case of Flora who recalled being impressed by a lecturer who would make deliberate mistakes to catch out students who did not attend lectures (a practice I would probably judge to be unethical).

In a review of the literature (Prebble *et al*, 2004) concluded that there is a relationship between deep and surface approaches to learning and quality students learning outcomes. It is theorised that deep approaches to learning result in higher level/ quality learning outcomes such as critical thinking, whereas surface approaches to learning result in lower quality/level learning outcomes such as memorisation. Moreover the evidence also suggests that there is a relationship between teachers' approaches to teaching and students' approaches to learning (Prebble *et al*, 2004). A consequence where there exists prior beliefs of teaching which favour a teacher centred approach will result in a greater likelihood of the student adopting a more surface approach to their learning. If on the other hand when prior beliefs of teaching favour a more learner centred approach then there is a greater likelihood of the student adopting a deeper approach to their learning.

In light of this evidence I would suggest that one of the objectives for GTA development should be encourage beliefs about teaching which favour a more learner centred approach. Short training courses are likely to have limited impact in this respect. Indeed a GTA who arrives on a short course with beliefs about learning and teaching which are teacher centred will in all likelihood leave with those same beliefs. I would therefore argue that there is a strong case for more

extensive teacher development of GTAs using models that involve periods of structured reflection. Certainly evidence from Gibbs and Coffey (2004) suggests that more intensive academic development programmes can lead to conceptual shifts in belief about learning and teaching. Moreover providing GTAs with opportunities for more extensive teaching development programmes is an explicit recognition for the GTA's status as a learner. Interestingly the university in the current study had introduced a teaching development programme for its postgraduates and postdoctoral researchers that went beyond its provision of short courses. Whether programmes of this types result in a conceptual shift in beliefs about learning and teaching would be an area worthy of further investigation.

Chapter 6: Conclusion

6.1 Introduction

This chapter reflects on the achievement of the aims of the study as set out in Chapter 1. These were identified as follows:

- To develop an understanding of the learning about academic practice that postgraduate and postdoctoral researchers develop through teaching experiences
- To develop an understanding of the factors that can facilitate or inhibit this learning
- To consider the implications for my own professional practice based on what I have learned

The chapter is organised into 3 sections. The first section reviews new understandings I have developed as a result of undertaking the study (aims 1 and 2) while the second section will consider how this new learning is informing my professional practice at the university where the study was undertaken (aim 3). The chapter concludes by reflecting on how undertaking a Doctorate in Education has led to my own development as a researcher.

6.2. New understandings

The first aim of the study set out to develop an understanding of the learning about academic practice that postgraduate and postdoctoral researchers develop through their teaching experiences. Reflecting on this aim I would conclude that I

have made considerable progress in this respect. I started with the assumption that many postgraduate and postdoctoral researchers will have opportunities to teach while undertaking their research and that this teaching will be a source of informal learning that is situated in practice. As someone with many years of teaching experience in higher education I thought the value of this situated learning would be considerable. However I was also faced with the challenge of how to understand this form of learning. This was resolved through the adoption of a methodological approach that sought to capture the routine and normal practices of a GTAs in a way that would emphasise and give prominence to their versions of reality. Indeed I thought my use of a visual method of data collection was particularly innovative in this respect. The interpretation of participants' versions of reality was informed by a number of studies and theoretical ideas from the literature but in particular I made use of a model of graduate socialisation developed by Austin and McDaniels (2006). This proved to be a useful conceptual tool which led me to delineate the learning I was interested in into 3 categories - disciplinary knowledge, interpersonal skills, professional attitudes and habits, all of which are considered to be highly relevant to development of an academic career in the 21st century.

The second aim set out to develop an understanding of the factors that can facilitate or inhibit this learning. My assumption was that there would be considerable variety in the teaching contexts the GTAs experienced. This was shown to be the case and I made sense of these enablers of learning using a model developed by Fuller and Unwin (2003) from their research with modern apprenticeships. This model highlighted to me that the quality of situated learning

within different communities of practice could vary significantly according to the institutional arrangements that were in place and conceptualised this variation as resulting in either expansive or restrictive forms of learning opportunities.

However in their discussion of what they meant by quality learning, Fuller and Unwin (2003, p.412) make use of a range of theoretical ideas, primarily from Lave and Wenger(1991) and used descriptions such as 'investigative deep level learning' or 'the work of the imagination'. I found this theorising difficult to use for the purpose of my study much preferring the less esoteric learning outcomes framework put forward by Austin and McDaniels (2006). However I did find Fuller and Unwin's work helpful in making sense of the ways in which setting variables might impact on learning about academic practice. This led to my framing of these enablers of learning into the categories of *opportunities for teaching- quantity and quality* and *opportunities for teaching dialogue*.

At the start of the study I also made the point that conclusions drawn from the research might have implications beyond the particular context studied and would contribute to an improved theoretical understanding about the relationship between teaching and academic development for early career researchers. By adapting the Austin and McDaniels and the Fuller and Unwin models I feel I have achieved this and in the process created a new model, albeit in an embryonic form. This new model is illustrated in Figure 6.1:

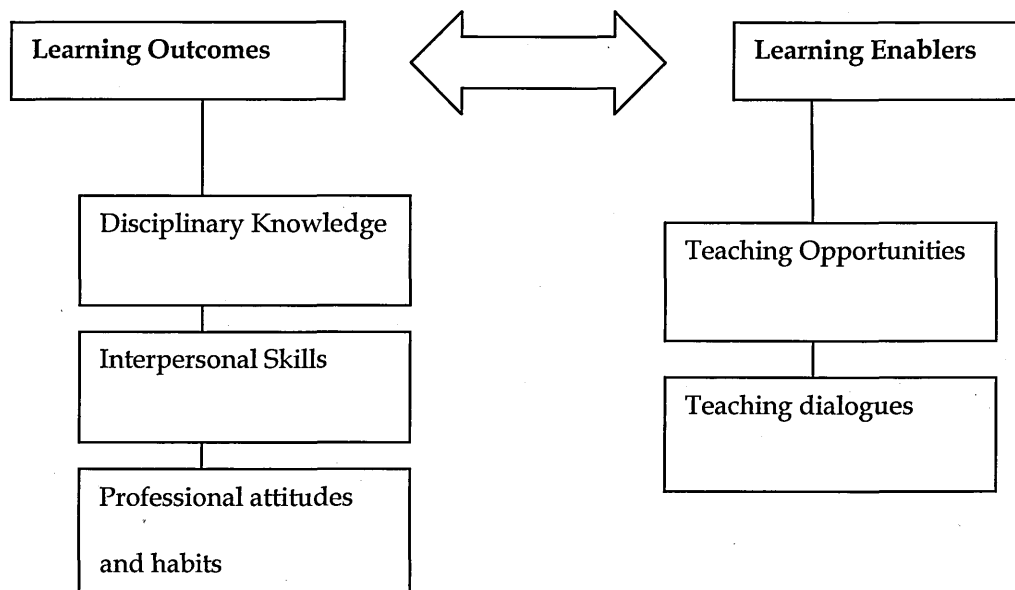


Figure 6.1 Postgraduate and post doctorate learning about academic practice through teaching

The next section will now consider the value of this new understanding to my professional practice.

6.3 Implications for my professional practice

In section 1.4 of this thesis I introduced the reader to my professional context as an educational developer working at a research-intensive university in the north of England. I described how as part of a professional services function I had a responsibility to support individuals who work as occasional teachers, many of whom are postgraduate and postdoctoral researchers and outlined the nature of this support. This primarily involved the design and delivery of teacher development workshops. However I also highlighted that the design and delivery of these workshops was the extent of my professional practice in relation to GTA development. I suggested that additional support for GTA development should be

possible, but was unclear as to what form this should take. A further question concerned defining what my own role (if any) might be in this respect.

As has been highlighted one of the key findings from the study is the suggestion that the quality of the learning that a GTA can derive from a teaching experience will be greatly enhanced when they have opportunities to have a dialogue about teaching with more experienced teachers working in the same environment. I have argued that institutions should be pro-active in this respect. But what might this mean for my own professional practice?

The first area where I could use this new learning would be in the development of a peer review of teaching scheme that applied to GTAs. The study showed that feedback of performance was particularly important in helping GTAs make sense of their teaching experiences. However it was also revealed that the majority of GTAs interviewed did not receive this form of support, and for those that did, this was arrived at through informal arrangements rather than as part of some structured GTA development programme. The conclusion I have therefore drawn from this is of a gap in existing practices where I could facilitate some improvement.

The university currently has in operation an established peer review of teaching system as part of a wider quality assurance of teaching strategy. This scheme seeks to provide a supportive and constructive framework for the University's teaching staff to monitor, reflect upon and improve the quality of their teaching and where appropriate to identify staff development needs. Departments are empowered to

implement the policy through their own peer review groups with the emphasis of the scheme being on formative and developmental support, particularly for those who are in the early stages of their career. For example every member of staff should normally be reviewed at least once every two years while probationary staff should have the benefit of being able to be peer reviewed annually until their probation is completed.

However my learning from the study has highlighted that many GTAs occupy a somewhat ambiguous status within academic departments and are not involved in the university's peer review of teaching scheme, despite the fact that GTAs may have many teaching responsibilities. I have also learnt that GTAs themselves vary significantly in terms of their own teaching experience, whether acquired through their current role or brought to the university from another educational context. Reflecting on this point has led to a change in the way I think about GTAs. No longer do I think of GTAs as a homogeneous grouping, but rather as 'senior' and 'junior' GTAs based on the extent of their teaching experiences. One outcome of this distinction could therefore provide the basis for a peer review of teaching scheme for GTAs, where more senior GTAs provide the formative and developmental support for their more junior colleagues. The study clearly revealed that GTAs already provide a range of informal teaching support to each other in areas such as the sharing of resources, ideas and experiences. The development of a peer review of teaching scheme for GTAs would therefore be instigated within this context. As a member of professional services I would see a role for myself in steering a policy for such a scheme based on existing structures. This might also involve the training of and development of new contracts for

'senior GTAs' to take account of their additional responsibilities. In addition to providing feedback on teaching the role might also cover areas such as helping more 'junior GTAs' locate and make the most of teaching opportunities at the university. In the first instance I could also facilitate the piloting of such a scheme with a small number GTAs from one of the Schools at the university.

My learning from the study has also led me to re-appraise my current practice regarding the GTA Statutory Training and Teaching for Researchers Programme which I co-ordinate at the university, and which was described in Section 1.4.

Based on my new understandings I feel that there could be improved integration between what I am co-ordinating through a central support unit and practices that support GTAs locally in academic schools. For example as a direct consequence of undertaking this study I have begun working with one school in the University to facilitate improved integration between central and local support for GTAs.

This has led to an initiative which has been named the Graduate Teaching Programme (GTP). Doctoral students (in consultation with their primary and secondary supervisors) can decide whether and at which stage of their doctoral research they want to take up the GTP. If they enrol on the programme they will then be expected to teach six practical sessions (either at undergraduate or postgraduate level) over the course of one academic year and be required to attend six supplementary workshops on teaching skills and use this as a forum to reflect on teaching experiences with other GTAs. The second supervisor assigned to each research student will also act as the teaching mentor, and be responsible for organizing the teaching sessions in consultation with the research student.

While there will be no assessment for this programme a simple standard form will be completed by the research student at the end of each practical session, logging details of the session, skills and contribution, and signed off by the second supervisor/mentor. Successful completion of the GTP will become a part of their postgraduate training record. While this initiative only involves doctoral students and not postdoctoral researchers it does provide a more integrated and systematic preparation for GTAs than has previously been available.

6.4 Development as a researcher

While the primary motivation for embarking on a doctorate in education was to inform an aspect of my professional practice, I have also reflected on how undertaking a research project has contributed to my development as a researcher. When I started on the study I had recently started a new job at an unfamiliar organisation. My new role, both in terms of purpose and setting, was very different to other jobs I had experienced in my career to date. Working as part of the university's professional services function, the academic related job involved supporting colleagues across a wide range of disciplines on matters related to the enhancement of learning and teaching. I found this work to be both varied and stimulating and was pleased with the direction my career was now taking.

However as I grew into the role I identified some perceived weaknesses in my capabilities which needed to be addressed. I felt addressing these concerns would enable me to become more effective in what I was currently doing and might also open up new work related opportunities at the university. The weaknesses concerned my competencies as a researcher. While I had a Master's degree in

Education that included a research methods component, many of the colleagues I was now interacting with on a daily basis were working at a level beyond this. I found this new culture sometimes intimidating but for the most part enlightening. I therefore wanted the challenge of taking ownership of a small research project, from its conception to its conclusion that would have direct relevance to an aspect of my professional practice.

I feel now that I have met this challenge. Through the process of the doctoral journey I have become much more confident in my social interactions with colleagues about research. Moreover undertaking the project has also resulted in my participation in a number of dissemination events where I have been able to share my research and develop a network with new professional colleagues working in this area. For example I have presented at a pedagogic research seminar at the University where I presented on the photo elicitation method I used in this study. I have also delivered a paper at an HEA Conference on the theme of 'Postgraduates who Teach' at the University of Edinburgh. My developing professional network and has also led me to be invited to deliver workshops to GTAs at both the University of Leeds and the University of Salford.

6.5 Reflections on the study

This study set out to contribute to the knowledge base about the value of teaching experiences to postgraduate and postdoctoral researchers. It did so by starting from the assumption that the activity of teaching will provide forms of learning which can facilitate career development. What forms this learning would take and how this learning might be facilitated was the particular focus of the thesis. Such a

focus would firstly, contribute to new theoretical understandings concerning the nature of researcher and teacher development, and secondly would inform my own professional practice working with GTAs at a UK university. On reflection I would judge that these aspirations have been achieved, but with two important caveats.

Firstly the study would have benefitted from a larger sample of GTAs. The findings are based on the experiences of 14 participants. This is a relatively small number. While I consider that I employed a valid method of data collection using photo-elicitation, this approach was time consuming to implement. The sample that I did achieve was justified on the basis that it would be possible for me to reveal particular nuances of events and situations that GTAs experienced while at the same time I could use these discoveries to generalise beyond the particular context studied. This was achieved by drawing on existing theories and in the process I have begun creating a new explanation as to how postgraduate and post doctorate learn about academic practice through their teaching experiences. This has been presented in the form of a preliminary model (Figure 6.1).

However in presenting this explanation I also recognise that it would be possible to develop a more 'sophisticated' model that could be informed by a larger dataset. For example participants in this study were drawn from a subset of postgraduates and postdoctoral researchers who had attended a teacher training event delivered by the educational division at the university of which I am a part. This was used as a proxy for identifying those researchers who had the opportunity to teach at university level and would be more likely to respond to a

request to participate in the study. However this meant excluding other postgraduates and postdoctoral researchers who had not attended these events but who were also engaged in some form of teaching at the university.

The second caveat concerns new questions which this study has raised, but which are worthy of further investigation. For example the study revealed that GTAs experienced considerable variation in the complexity of teaching tasks they were undertaking. This raised the question as to whether there was a relationship between the complexity of teaching tasks and engagement with teaching roles. While it is possible to speculate that there is a relationship this question remains unanswered. The study also raised the question concerning whether GTA training of an interdisciplinary nature could lead to the development of GTAs' beliefs about learning and teaching. The study revealed that training of an interdisciplinary nature may offer considerable potential in this respect, but this question was in the main unexplored. A final question concerned the different kinds of learning that a GTA might acquire through the new networks (both formal and informal) which they acquire through teaching. The study identified that opportunities to teach leads to network development and raised the possibility that these new networks provide a rich source of new understandings. However the nature of this learning particularly in the way that it might relate to future career development, would be worthy of further investigation.

Addressing these questions therefore provides the basis for a future research agenda, both for myself and for others. From my own perspective it is certainly my intention to build on this study, both as a way to inform my current

professional practice and as a way of contributing to an evidence base upon which policy can be formulated.

Section 6.6 Concluding remarks

The study set out to develop an understanding of the kinds of learning that postgraduate and postdoctoral researchers might derive from teaching opportunities at universities, and to assess the value of this learning to their career development. At the start of the thesis I highlighted that any learning that might be derived from teaching experiences had the potential to be situated against either the Researcher Development Framework (RDF) or the United Kingdom Professional Standards: two policy initiatives that have been introduced to enhance career development in UK Higher Education. At my own university, both these frameworks are now embedded in career development strategies with, for example, the RDF being used to identify the kinds of relevant training that should be offered to both postgraduate and postdoctoral researchers while the UKPSF has been instrumental in shaping the development of a suite of university teaching qualifications.

Within this context I have suggested that both of these frameworks could also be used to provide a structure, language and focus and to help postgraduate and postdoctoral researchers reflect on and identify the learning derived from their occasional teaching experiences. This learning could then be articulated by postgraduate and postdoctoral researchers in career development opportunities, for example in progress reviews and appraisals with principal investigators,

research managers, mentors or supervisors. However, having undertaken the study, there was little evidence of this kind of activity taking place. Indeed the absence of the framework being used in this way does suggest something of a paradox between what the policies are suggesting on the one hand and the reality of what the postgraduate and postdoctoral researchers are likely to gain from their teaching experiences.

The study has revealed that postgraduate and postdoctoral researchers often engage in teaching activities on a part-time and casual basis rather than as a major opportunity to be a teacher in Higher Education. One consequence of this is the creation of a somewhat ambiguous teaching role with no accepted consensus as to how this role should be defined. This may go some way to explaining why the kinds of learning (knowledge, competencies and values) that have been shown to arise from the occasional teaching opportunities experienced by postgraduate and postdoctoral researchers are not being connected to policy initiatives such as the RDF and UKPSF. This is considered to be something of a missed opportunity, particularly as the study has shown that the experience of being a teacher within a university can lead to an enhanced understanding of academic disciplines, provide insights into the wider responsibilities that academics have within a university and facilitate the development of a wide range of interpersonal skills considered to be relevant to a professional career. As an educational developer this discovery has caused me to reflect on my own professional practice in a new way and to assess what this may mean for the future direction of my work in this area.

At the start of the investigation I made the claim that the study would be action orientated, in the sense that I was studying my own practice in order to improve it. When I initially formulated this aspiration what I had in mind were those aspects of my practice which involved providing teaching support activities that would help postgraduate and postdoctoral researchers to contribute to the quality of student learning. In this respect the study has provided me with many new insights. For example the likely value of offering a peer review of teaching scheme that can offer developmental support for postgraduate and postdoctoral researchers with teaching responsibilities. However, what has also emerged is the discovery that there exists another dimension to my professional practice, which hitherto I have not explored to any great extent. This concerns a role I could play in highlighting the kinds of relationships that exist between teaching experiences and learning, and how this experiential learning can best be used for career development by postgraduate and postdoctoral researchers, using the RDF and UKPSF as reference points.

To progress this, my intention is now to explore a range of communication activities (websites, events, case study exemplars) with a view to raising awareness amongst the postgraduate and postdoctoral researchers themselves, together with other relevant stakeholders across the university with an interest in researcher development.

These communication activities would be further supported by initiatives to: a) help postgraduate and postdoctoral researchers reflect on their casual teaching experiences (something shown from the study to be missing); b) indicate how to

go about providing evidence of learning from this reflection, (perhaps using an e-portfolio); and c) be able to present this learning in a way that resonates with frameworks such as the RDF and UKPSF. Here the use of researcher development workshops is considered an appropriate strategy, particularly if they are linked to more regular opportunities for dialogue with experienced colleagues, acting in the capacity of a critical friend. To progress these kinds of activities would therefore represent a development of my professional practice.

At the time of writing I have raised these possibilities with colleagues in my own Department, and with their support I have agreed to put forward a paper to a relevant university committee. Here my objective will be to highlight the added value that postgraduate and postdoctoral researchers can gain from teaching experiences and argue what needs to be done by the institution to enhance practice in this area. Having now undertaken a Doctorate in Education into this topic, I now consider myself in a good position to make a well informed case.

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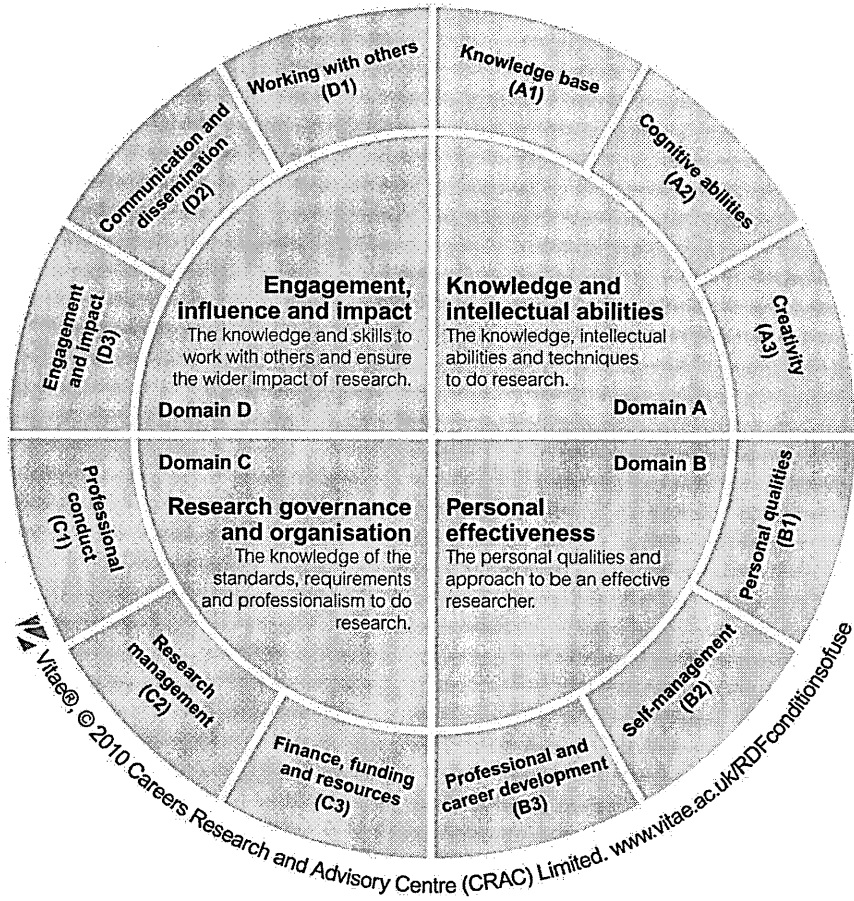
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Appendix 1

The Researcher Development Framework



Appendix 2

Participant information Sheet

STUDENT VOLUNTEERS

You are being invited to take part in a Research Study. Before you decide, it is important for you to understand why the study is being undertaken and what it will involve. Here is some information to help you decide if you are happy to take part.

Study Title

Academic development through teaching – a study into the experiences of postgraduate and postdoctoral researchers

What is the aim of this study?

This study aims to develop an understanding of individuals at a University whose primary role is research, but, for a variety of reasons have an interest in teaching. It is being undertaken by the researcher to obtain a Doctorate in Education at the Open University

What are the research questions?

Using a methodology for investigating informal learning in workplace settings², the following questions will be explored

- What knowledge and skills is being learned though teaching by researchers?
- How is this knowledge and skills being learned?
- What factors influence this learning?
- What are the implications of what is being learned for future curricular initiatives to support researchers as teachers?

² This is conceptualised as being implicit, unintended and unstructured and which takes place in the absence of a teacher. This is based on the work of Eraut, M. (2004) 'Informal learning in the workplace' *Studies in Continuing Education* 26(2), 247-273.

What will my involvement in the study consist of?

Your involvement will be in two parts:

a. Pre-interview phase

You will be given a camera and, in your own time, are invited to take some photographs which convey something about your teaching at the university. What you take photographs of (people, objects, places, etc) and how many photographs you take will be entirely at your discretion. Do not worry if you feel you have either taken too many or not enough photographs. There is no right or wrong way to undertake this task, but it is suggested you think about images which say something about:

- How you feel about teaching? (e.g. likes/dislikes/motivations/aspirations)
- What you feel you currently bring to the teaching role? (e.g. your teaching skills and knowledge)
- How you may have acquired teaching skills and knowledge, either formally or informally?
- What factors in your current situation either help or hinder your work as a teacher?

When you feel you have completed the activity, return the camera to the researcher in order that prints of the photographs can be made. These photographs will then be used to stimulate a conversation at a one-to-one interview.

b. One-to-one interview

An interview of approximately 45 minutes will be undertaken which will provide some primary data to explore the research questions of the study. You will be asked about the photographs you have taken and your thinking behind these choices. Such an approach should empower you to set the interview agenda in talking about your work as a teacher.

Why have I been chosen?

You have been chosen because you have shown an interest in teaching through your participation in teacher training events currently being offered by XXXXXXXXX.

Do I have to take part?

Taking part in this project is voluntary. If you do not wish to take part you do not have to give a reason.

What will happen to the results of the research?

With your permission, the interview will be recorded to recall what was said. An interview transcript will be made of this recording which will then be analysed. The findings from the study will be disseminated via a thesis and may also be submitted to relevant publications, and conferences for presentation.

What will happen with the photographs I take?

Photographs will be used for the sole purpose of stimulating an interview conversation. It is these interview conversations that will be recorded, transcribed and subsequently analysed. It should be noted:

- Photographs will remain the intellectual property of the photographer i.e. the research participant
- Should the researcher wish to use a photographic image for dissemination purposes (such as inclusion in a thesis, conference presentation, publication) then he will be required to obtain written permission from the participant who owns the image.

Will the information I give be confidential?

Data that is collected as part of this research project will be kept strictly confidential. For the purposes of dissemination such as for the researcher's thesis and for research publications direct quotations may be used but these will be amended to disguise participant's names or any other identifiers such as discipline, other persons or place names.

How long will data be stored?

For research audit purposes interview data and photographs will be stored for 5 years upon completion of the research. Data will be stored securely by the Administration Office, XXXXXXXXXXXXXXXXXXXX

What checks are there to ensure the participants in the study are treated correctly?

The research project has been subject to scrutiny, and subsequently approved by the University of XXXXXXXX Research Ethics Committee. If at any time you wish

to discuss your involvement in this project, or that you think you are being treated unfairly then you can contact Dr XXXXXXXXXX, Head of Educational Development, University of XXXXXXXXX

What happens if I wish to withdraw from the study?

I can decide to withdraw from the project at any time. Data collected from me up until this point may be used by the researcher, but I have the right to request the destruction of data should I so chose.

Can I get further information? Please contact: XXXXXXXXXXXXXXXX