

**ENHANCING ACADEMIC PRACTICE THROUGH THE USE OF VIDEO: A  
LONGITUDINAL CASE STUDY OF PROFESSIONAL DEVELOPMENT IN  
HIGHER EDUCATION**

**by**

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### My family

I must acknowledge the forbearance of my family; at times, the guilt of procrastination made me a little evil. It's a miracle they put up with me.

## **Dedication**

**To my son Maximilian Salvatore Bartholomew.**

*I've been engaged in this doctoral study for most of your life. I know you've  
paid a price. Thank you.*



## **Abstract**

This thesis offers an overarching case study of academic staff development as it relates to the ten-year period following the publication of the UK Government White Paper: *The future of higher education* (DfES, 2003). The publication of the White Paper (*ibid.*) was a prelude to considerable sector-wide investment being made to support the enhancement of learning and teaching practice in higher education. Using a case-study research method, I reflect on my own critical case of professional development and link the impact of the White Paper (*ibid.*) to the opportunities I have had to use video as an enabling technology for teaching, for research and for stakeholder engagement in curriculum design. Accounts of these three facets of practice are embedded, as dedicated 'context-cases', within an overarching case study of professional development. The case study approach I have taken is theory generating, with the act of thesis construction having led to the creation of new theories as models. These models, as research outputs in their own right, are offered in parallel with the conventional research findings presented through the three embedded 'context-cases'.

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# CHAPTER 1: OVERVIEW

## 1.1: Thesis foci

My original contribution to knowledge is multifaceted. Firstly, I offer a longitudinal first-person account of the lived experience of the ramifications of the 2003 UK Government White Paper: *The future of higher education* (DfES). I do this from the perspective of someone who has benefitted to an unusually high degree<sup>1</sup> from the national initiatives that cascaded from that publication.

Secondly, using a case study research approach, three themed 'context-cases' have been used as a focus for reflexive analysis. This process has led to the generation of four new models that relate to: typologies of case study research; scholarship of learning and teaching; the hierarchical nature of communities of academic practice; and stakeholder engagement in project-based activities.

Thirdly, the three themed 'context-cases' present findings relating to the efficacy of the use of video in three separate areas of academic practice: teaching; research; and stakeholder engagement in curriculum design.

Finally the thesis concludes with a reflection on the impact the 2003 UK Government White Paper: *The future of higher education* (DfES) has had on my academic practice, my academic identity and my ability to influence and

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<sup>1</sup> A similar experience of the ramifications of the White Paper is likely to have been experienced by fewer than ten academics nationally. This has been estimated by cross-referencing National Teaching Fellows (Post White Paper who received the £50K version of the award) with their involvement with Centres for Excellence in Teaching and Learning (CETLs) and conferment of professorial titles (though it is not known whether these were conferred on criteria relating to leadership in learning and teaching rather than their subject discipline).



support the scholarship of teaching and learning across a higher education institution.

## **1.2: Overarching context**

This thesis offers a contextualised account of my use of video as a technology to support my academic practice. The account is unusual as it describes the use of this technology over a period of ten years and spans different academic contexts; both in terms of my academic role and in terms of the sector foci that influenced my activities. The sector context is important as it demonstrates how government policy determined in 2003 through the publication of the White Paper: *The Future of Higher Education* has led to a myriad of opportunities for pedagogic innovation and academic development for practitioners working in English education over the last ten years. In my case, I benefitted from these opportunities to an unusually high degree.

Much of my pedagogic innovation and academic development has been enacted through the use of video as a technology to augment academic practice. To reflect this although the thesis offers an overarching case study of academic development over the last ten years it also has, embedded within it, a set of three context-cases, each an account of how video as a technology has been put to useful effect to augment my academic practice. A brief summary of the focus of each context-case is bulleted below:

- Context-case 1: A case of video used as a tool for teaching – this context-case reflects a sector focus on valuing teaching as an academic endeavour.

- Context-case 2: A case of video used as a tool for research – this context-case reflects a sector focus on valuing the scholarship of teaching and learning.
- Context-case 3: A case of video used as a tool for stakeholder engagement in institutional change – this context-case reflects a sector focus on stakeholder (especially student) engagement.

Each context-case is linked to my academic role at that time, with a supporting discussion as to how the contemporary priorities of the sector shaped my use of video technology. A summary of the findings of each of the context-cases is given below:

- Context-case 1 offers an account of video as a tool for teaching and describes a case of pedagogic innovation resulting in what is today referred to as ‘flip teaching’. The account describes the underpinning motivations for the innovation, the pragmatics of implementation, the ramifications for curriculum delivery and evaluative data relating to the efficacy of the approach. This case offers a conclusion that ‘video lectures’ are just as effective as ‘face-to-face lectures’ and that the ‘classroom time’ so liberated can be used in a way that is highly valued by students.
- Context-case 2 offers an account of video as a tool for research and describes how I came to research an aspect of the above-mentioned teaching method and how video was chosen as a data collection tool. A specific research question in relation to the affordances of collaborative learning as compared to individual study of scenario-based units of learning was addressed. This case offers a conclusion

that although collaborative study demonstrated no specific learning advantage over individual study in my teaching context, students were much more likely to engage with the scenario-based units of study when these were offered as a collaborative activity.

- Context-case 3 offers an account of video as a tool for stakeholder engagement and describes two levels of the use of video in transforming institutional approaches to curriculum design and programme approval. At a 'project level' it describes how the design of new institutional processes were informed by the collection, analysis and sharing of video data relating to the 'lived experience' of stakeholders involved in curriculum design. This part of the thesis demonstrates how the use of video narratives has influenced institutional change and shares the sorts of data collected and the forms of analysis that were conducted. At a 'curriculum design level', I describe how the new approaches to curriculum design and approval (as informed by the 'project level' video work) is embracing of the use of video to bolster stakeholder engagement in curriculum design. An example of one such a curriculum design workflow is shared and the analysis of the video methods deployed to bolster stakeholder engagement in curriculum design is demonstrated. This case offers a conclusion that video offers a powerful tool to give stakeholders an authentic and influential voice in projects and activities that require their 'buy-in' to be truly successful.

Within their dedicated chapters (Chapters 4, 5 and 6), each of the three context-cases is supported by an 'adjunct narrative'; each narrative

represents a piece of reflexive writing (conceived at the time of the reported activity) that emerged from my attempts to articulate my academic activities with new understandings brought about through my engagement with my doctoral study – particularly the taught component. In this sense, the narratives emerge from, and are products of, the *process* of researching one's own professional practice. Their inclusion serves to demonstrate how the undertaking of research can be transformative to the researcher, leading to learning that goes beyond that which is exclusively focussed upon the research question(s).

This notion of additional research outputs cascading from the *process* of one's engagement in research activity is fully explored in Chapter 2. In that chapter I articulate my decision to use this thesis to disseminate emergent outputs of the research process, along with more conventional outputs that relate to empirical work, with the concept (and method) of case-study research. Central to the justification of my approach is the contention that the act of 'write-up' (in this case, in the form of thesis construction) *is itself* a research activity and not just a device for the abstracted reporting of research activity.

By taking this approach, I am able to give a full account of my learning and to make a greater contribution to knowledge. Furthermore, in keeping with a professional doctorate, I have utilised the opportunity so afforded to undertake structured professional development. This thesis therefore, is an account of professional development as supported by opportunities made available as a consequence of the ramifications of 2003 UK Government White Paper: *The future of higher education* (DfES).

The approach does lead to a somewhat unconventional thesis structure and as such it has been incumbent upon me to justify my approach by reflecting on precedents reported in relevant literature, see Section 1.3.1 (this chapter).

### **1.3: Introductions**

I use the plural 'introductions' because there are a number of introductions to make ahead of the subsequent chapters. There is a need to introduce the thesis itself, the choices I have made, especially in relation to sharing the products of the process of my research activity and not just the products of my empirical work. I also need to explain how this has led to a structure that is different to a conventionally structured thesis.

Then, there is a need to introduce my academic context, I've held multiple academic roles over the duration of my study and this has led to a shifting context characterised by new opportunities and new challenges in relation to my academic practice and my associated research activities.

Then, there is a need to introduce the multiple themes of the context cases: my use of video in teaching, my use of video in research and my use of video in stakeholder engagement. These emerge from and reflect my changing academic role and sector-wide imperatives that were current at the time.

Finally, as one of the coherent threads running through the thesis, there is a need to introduce video as a technology. Video has a particular set of affordances that have been variously exploited at different points in my practice; specifics relating to my use of video are fully described through the three themed context-cases.

### 1.3.1: Introduction to the thesis:

This thesis is written and submitted for the award of EdD – a professional doctorate in education. Although this is a statement of the obvious, it is also an important declaration of context since the work relates to, and emerges from, my practice as an educator in higher education. As a consequence, and to be representative of the professional development I have undertaken, the thesis has a nested focus: with results of my empirical work, placed centrally but (and it's an important 'but') with a concomitant wider focus on the *process* of research as a case study of professional development.

A wider focus to include the process of research has led to the production of additional research outputs in the form of new theories and models. These have been generated through a process of 'reflexive analysis'; by this I mean a sense-making process that has caused me to reflect on my learning, to think about my academic activities and to build mental models (theories) that allow me to explore, organise and explain emergent ideas to myself and to others. There have been two phases of reflexive analysis leading to the development of models and theories. I summarise these below:

- For each of the three context-cases (Chapters 4,5 and 6) I offer a complementary 'adjunct narrative'; each represents thinking/theorising that emerged as a consequence of me reflecting (at the time) on the academic activity described in the associated chapter – importantly, within the context of exposure to the taught content of the EdD (Learning and Learning Contexts).

- The activity of 'writing-up' this thesis has afforded me the opportunity to consider the act of 'write-up' an academic (and professional development) activity in its own right; my reflexive analysis of this activity has led to the generation of a new modelled typology of case-study research as laid out in Chapter 2. Additionally, the process of 'write-up' has afforded me with the opportunity to think about my doctoral study more widely, leading to the generation of a new model that links notions of professionalism, scholarship of teaching, and experiential learning.

I contend that the models and theories that have emerged from these reflexive analyses are as legitimate an output of my overall research endeavour as are the more conventional outputs that have been generated through my empirical work.

Central to my account is a longitudinal exposition of the use of video in my academic practice. This exposition is manifested through the sharing of three context-cases nested within what could be regarded as a wider case study of academic development. The context-cases, touched on above, are fully introduced in section 1.3 and each has its own dedicated chapter later in the thesis.

The context-cases, each of which present empirical work, lead one into the other; with my learning, as a consequence of research findings and as a consequence of the learning that resulted from the research process, initiating and informing the next context case. Experiences from context-case 1 led directly to my research focus described in context-case 2 and the expertise I

developed in context-case 2 directly influenced the approaches and thus the outcomes of the work I describe as context-case 3.

As is common with many who have undertaken a part-time professional doctorate alongside their career, my work has emerged quite slowly over an extended period – this, a consequence of competing priorities and ever-growing responsibilities. Specifically, my work has been ongoing for the best part of a decade – punctuated by declared and undeclared leaves of absence. It has thus been undertaken across a period of great change in higher education, multiple changes in my areas of professional responsibility and realignment in my areas of professional interest. To ignore this story, to not put my research into that context and to not articulate the experience with my professional development would, in my view, be to offer a partial account.

Furthermore, as I have taken on new professional roles and have been exposed to new opportunities and challenges, so I've sought to realign my research to maintain relevance to my dynamic professional context, to my development needs and indeed to new priorities within the higher education sector within which I practice. This desire to authentically represent my full gamut of learning, across a range of professional contexts, has inevitably led to some structural choices in the presentation of this thesis. As a doctoral student, the decision to offer an unconventionally structured thesis is not without its risks; I have tried to mitigate these by drawing on published literature relating to the submission of unconventional theses.

The intellectual need to structure a thesis to reflect the *process* of research is not uncommon and is well described by Fisher and Phelps (2006) – their



paper *Recipe or performing art? Challenging conventions for writing action research theses* describes the two authors' experiences of constructing theses with 'alternative' structures. As part of the paper's narrative, a series of open questions are asked of the reader:

1. "How important is it to you to record the research *process* as much as the outcomes of results?
2. How open is your supervisor to a different writing format?
3. Does your research context lend itself to this sort of writing?
4. What would be the main constraints for you in adopting such an approach?
5. How might conforming to convention deaden your creativity?
6. Are the risks worth taking in terms of what you might receive at the hands of power?" (*ibid*: 159-160)

Offering my answers to these questions will help to share my thinking in relation to the choices I have made in writing this thesis as I have.

My response to Question 1: "How important is it to you to record the research *process* as much as the outcomes of results?"

As touched upon above, the importance of the research process to me is the primary reason for presenting my thesis in this way. I have learnt a great deal as a result of choosing to embark on my doctoral study – only part of that learning is explicitly represented through descriptions of scholarly domains, the exploration of relevant literature, the description and justification of methodologies, the sharing of results, subsequent analysis and the offering of conclusions on findings. On

their own, these generally accepted stages of presenting research are unable to fully represent the learning I have undertaken or indeed the additional contributions to knowledge that have cascaded from my reflexive analysis of my experiences. My research/learning experience has been transformative in that it has changed the way I think about certain things and how this in turn has led to an evolution of my academic identity. Chapter 4 (Section 3.4) offers a new model that shows the relationship between the researching of one's practice and the evolution of one's academic identity.

The term 'academic identity' would benefit from some elucidation; here, I am using the term as a label for a set of values and practices – it therefore relates to how I see myself (largely values-based) and how others see me, through observable praxis (and even competencies); in this regard, my thinking follows Henkel (2005) who explores communitarian notions of identity whereby “...*identities are, first and foremost, shaped and reinforced in and by strong and stable communities and the social processes generated within them*” (*ibid*: 156-157). Here, she is (implicitly) referring to academic communities and characterising them through their use of shared specialised language; she cites Mulhall and Swift (1992) and Taylor (1989) to describe how language can define (and reinforce) hierarchies within communities thus defining how they function. She also states how specialised language acts as a cognitive structure for understanding the world and by implication facilitates 'group cognition' by members of the community. In summary then, Henkel contends that 'identity' is a

product of one's position within a community and the relationship of that community to other communities and indeed the wider world. In my case, I believe this is a good fit; as my identity has 'shifted' so I have appropriated new specialised language and so my cognition – the way I think about the world – has been influenced by the thinking of 'fellow' community members. Henkel also cites MacIntyre (1981) who makes reference to community members becoming bearers of community traditions. This resonates well with conceptions of professional communities, as explored later in Chapter 3.

Key to arguments made in Chapter 3 is the contention that these professional parameters and expectations are not static but are subject to evolution through the influences of the community's members – including those newly inducted. This notion of individuals being able to change 'community traditions', or paradigms is explored further in the model I propose relating to the hierarchical nature of communities of academic practice in the 'adjunct narrative' of Chapter 4. Also in Chapter 3 (Section 3.4) I contend that, in my higher education practitioner context, people belong to multiple communities, moving between and spanning them as appropriate.

Over the duration of my study, the importance of professional development of academics in higher education has become a much more prominent issue in the UK, with the need to evidence such professional development becoming non-optional. The introduction of the UK Professional Standards Framework for Higher Education (UKPSF) has, in many cases, led to higher education institutions to

include in their person specifications for advertised academic positions a requirement for demonstrable achievement of Descriptor 2 of the framework (normally through Higher Education Academy Fellowship). The undertaking of doctoral study, particularly professional doctorates such as this EdD, includes a valuable opportunity to evidence learning that cascades from the process of research rather than just offering a conventional description of findings. I offer more detail in relation to these needs in Chapter 3 where I discuss the UKPSF and the ramifications that document has for educators working in UK Higher Education; I also discuss its articulation with the subject domain of SoTL.

My response to Question 2: “How open is your supervisor to a different writing format?”

As is not uncommon with those who undertake doctoral study over an extended period, my supervisor at my point of write-up is not the same person who supervised much of my research. Certainly, my original supervisor regarded a less-than-conventional write-up as a somewhat risky proposition but did acknowledge the tensions I have been exploring and was encouraged by the accounts in literature of appropriate precedents for taking the approach I have.

However, Fisher and Phelps’ (2006) question is asked within a presumed context of PhD study; it may help a reader to know that my selection of an EdD over a PhD at the beginning of my study was a very purposeful choice. One taken as a consequence of valuing the

professional development opportunity offered by a professional doctorate borne out of a desire to ensure my work resonated with, and supported, the development of my professional practice. Because my study has taken place over a number of years, my role as an academic has changed over this period of time as I have progressed from Senior Lecturer/Clinical Placement Facilitator for Radiography, to Senior Academic for Learning and Teaching within a Faculty of Health, to University Head of Academic Portfolio Development, and finally to University Head of Curriculum Design and Academic Staff Development. The ramifications of these changing roles are discussed in section 1.3.2 below.

I have tried over this period to ensure that my research activity continued to articulate with my developing practice and to ensure that I was always able to draw some value from the work in relation to my evolving professional role and an evolving wider (higher education) sector. This imperative has meant that I have tried to reflect on my activity as my professional focus has shifted and so demonstrate relevance to a changing professional context. As I have written above, the changing context within which I have practiced has led to fairly diversified opportunities for professional development and it has made sense to me to take an inclusive approach to the chronicling of this learning. This has necessarily led to the need for a somewhat unconventional approach to thesis presentation.

My response to Question 3: “Does your research context lend itself to this sort of writing?”

My *context* certainly does. I committed myself to the undertaking of a professional doctorate because I wanted my work to articulate with and emerge from my professional practice. Given that my professional practice, its foci and priorities, have changed over the duration of study, the thesis has needed to mirror the learning journey, including the learning (through theorisation) that has emerged as a consequence of reflexively analysing the write-up process itself.

The findings of the context cases (as research outputs) could be, and indeed are, described somewhat more conventionally and the reader will find, within these pages, articulation with relevant literature, accounts of methodology, some results, some analysis and some conclusions; but these accounts are ‘wrapped’ within a more narrative structure that seeks to show the relevance of my research, and (crucially) the adjunct learning I have undertaken as a consequence, to my professional practice. Representations of this adjunct learning are included in the ‘adjunct narratives’ embedded within Chapters 4, 5 and 6, and through the considerations of thesis write-up (Chapter 2) and professional development (Chapter 3).

My response to Question 4: “What would be the main constraints for you in adopting such an approach?”

The main constraints relate to controlling the tension between sharing my research findings in a way that respects the conventions of academic writing and study while ensuring a proper context is given in the way I have described above.

The linearity of a written thesis is necessarily constraining – in many ways, offering my work in the form of something like an e-portfolio that would host distinct facets of my work as hyperlinks from a central guiding narrative web page would have been easier and perhaps even more representative of how my work has unfolded. Indeed, Davis (2007) discusses how the conventionally structured thesis is under challenge, particularly in relation to theses “...*from emerging fields such as the ‘creative industries’ that cross the boundaries of the arts and technologies*” (p182).

However, the need for linearity does, I feel, have benefits – the act of write up itself, of pursuing and locking down a structure for a thesis is a learning experience in its own right and I would contend is just one more opportunity to undertake professional development. It has proven itself to be an effective way to research one’s practice in a completely different way to the empirical work described in Chapters 4, 5 and 6. As Chapter 2 goes onto explain, the act of write-up has taken my lived experience of professional development, through the proxy of the context-cases, and used it as a focus for reflexive analysis – this has led to the generation of theory in the form of models which I contend are as legitimate an output of my research activity as are the findings from the empirical work described in the three context-cases.

My response to Question 5: “How might conforming to convention deaden your creativity?”

Without incorporating the more eccentric features of the thesis, the account of my learning, my development – the *raison d'être* of study – would be partial. I contend that it is incumbent upon me to authentically communicate the process of the wider learning I have undertaken as this has been highly formative and so has, inevitably, shaped the way I see the work and how I report my findings. Sharing the process is important as it allows the reader to discern the 'lenses' I have looked through as I have considered the outputs of my work and as I have made choices in relation to continuing progress.

My response to Question 6: "Are the risks worth taking in terms of what you might receive at the hands of power?"

I've wrestled with this a little, but it is because I truly value the learning that has occurred as a consequence of my study and research that I feel strongly that both research process and products must be given equal weight if I am to avoid a partial reporting of my work. I also think that many of the 'risks' of such an approach are mitigated by the inclusion of conventionally structured accounts of my research, through the context-cases, within the thesis.

This choice to chronicle process as well as product(s) has led to a less conventional thesis structure than might otherwise be expected. The three context-cases define the central direction of travel of the 'research story' but aspects of wider learning in the form of 'adjunct narratives' on the affordances of physical and virtual learning spaces (Section 4.5), the hierarchical nature of communities of practice (Section 5.7 in Chapter 5) and stakeholder



engagement in education projects (Section 6.4) are also included. These 'adjunct narratives' add reflexive weight to the thesis because the opportunities afforded by the context-case coupled with opportunities for structured reflection provided by doctoral study drove this new learning, allowing me to make sense of my experiences through theorisation and model-building. Furthermore, it is this new learning that has had the most impact on the development of my academic identity and represents, for me, the most prominent way-markers in my learning journey and professional development.

### **1.3.2: Introduction to my changing professional contexts**

Over the duration of my study (and research), as a consequence of career advancement and a changing sector, I have held a number of academic roles. This evolution of my academic identity has tended to take me further and further away from the role I was undertaking at the beginning of the research activity described within these pages. My changing roles and responsibilities, and the shifting higher education context has meant that I have had a stream of new opportunities to utilise and embed the use of video into my academic practice. Because my changing role (and related context) is so fundamental to the structure of this thesis, it may help the reader to offer a brief biography of my changing roles, how they related to a changing higher education sector and to share some commentary as to how my research activity evolved to reflect these changing contexts.

Table 1 offers a relational summary of contextual factors, my academic practice and the impact of my learning on my ability to support institutional priorities. From the top of the table, the rows move from a brief historical context of aspects of the UK higher education sector to aspects of the subsequent institutional context and then down to aspects of my individual practice at the time. This individual practice is presented through summaries of my academic role; the professional practice priorities I had at the time; the related context-cases of video usage (which form the foci of Chapters 4, 5 and 6); my adjunct learning that emerged from the context-cases (as described in the adjunct narratives of Chapters 4, 5 and 6); and the impact my learning and developing practice had on my ability to support the institutional priorities associated with the institutional context summarised in the second row (excluding the 'Years' header row) of the table.

**Table 1: Relational summary of contextual factors, my academic practice and the impact of my learning on my ability to support institutional priorities**

	<b>Years: 2003 - 2005</b>	<b>Years: 2005 - 2008</b>	<b>Years: 2008 - 2013</b>
<b>Sector context:</b>	University teaching as an activity to be explicitly valued as apparent through expansion of the National Teaching Fellowship Scheme and conception of the CETL (Centres of Excellence for Teaching and Learning) programme. (Ramification of White Paper (DfES, 2003)).	Awarding of CETLs with a concomitant expansion of the number of university teachers engaging in the scholarship of learning and teaching.	Global financial crisis, publication of the Browne Review; White Paper (DfES, 2011) response (to Browne Review); emergence of the Key Information Set; profound changes in relation to university funding; neoliberalism, students as consumers / students as partners debate.
<b>Institutional context:</b>	Strategic commitment to support individuals and teams to engage more fully in learning and teaching innovation. Establishment of Faculty Learning and Teaching Task Group.	First half of my institution's CETL – characterised by bolstering of pedagogic research and support for developing teaching practice in third party institutions – NHS Trusts.	Second half of CETL characterised by partnership with students, leading to the Student Academic Partners Scheme. National leadership in 'students as partners' paradigm through HEA Change Academy process.
<b>My academic role:</b>	Teacher of Diagnostic Radiography / Learning and Teaching Task Group Fellow.	Leader of innovation in learning and teaching within the Faculty of Health.	University lead for curriculum design and academic staff development.
<b>My professional practice priorities:</b>	Delivering an effective learning experience for students.	Disseminating effective practice; catalysing new approaches to teaching in others; developing self as a research-informed teacher.	Democratisation of curriculum design; student engagement as an agenda / response to fees.
<b>Context-case of video usage:</b>	Context-case 1: Video as a tool to support teaching.	Context-case 2: Video as a tool to support pedagogic research.	Context-case 3: Video as a tool to support stakeholder engagement.
<b>My adjunct learning from the context-case:</b>	Technology discovery and consideration of learning spaces.	Exposure to the Learning Sciences with consequent developing interest in discourse analysis; video analysis; communities of academic practice.	Exploration of stakeholder engagement as it relates to curriculum design practice.
<b>Impact of my learning on my ability to support institutional priorities:</b>	My development of new models of delivery for academic programmes leading to new institutional capacity to serve new markets – e.g. new foundation degrees.	My contribution to better-informed instructional design practice. New ability to inform and support peers.	My contribution to an enhanced understanding of 'lived experience of curriculum design and approval' leading to new institutional processes for programme design and approval. New processes led to video being used as a tool to promote stakeholder engagement in curriculum design.

### **1.3.2.1: Years 2003 - 2005**

At the beginning of my doctoral study I practiced as a Senior Lecturer / Clinical Placement Facilitator for the BSc Diagnostic Radiography Programme at Birmingham City University and at a point fairly early in my academic career I took over a 36-credit module within that programme. During my first year of coordinating and teaching on the module, I became dissatisfied with the traditional didactic model that was still dominant across the programme and I took a decision to transform my teaching methods through the use of video as a technology. The specifics of this transformation and the adjunct research activity are covered briefly in section 1.3.1 and more fully in Chapter 4 (context-case 1: video as a tool for teaching), but it was this context-case that sowed the seeds for all of the research activity and professional / academic development that was to follow and which forms the totality of this thesis.

This transformation of curriculum delivery did not go unnoticed, either within my university or indeed across the sector. My work led to my secondment to the Faculty of Health Learning and Teaching Task Group, my identification as the 'champion' for learning technology within the Faculty of Health and (in 2004) the award of a National Teaching Fellowship (NTF). These opportunities emerged from a sector-wide (and institutional) support for learning and teaching as a valued alternative to research as a focus for an academic career. This movement in support of learning and teaching began with the Dearing Report (1996) with its recommendations to establish the

Institute for Learning and Teaching in Higher Education (later to evolve into the Higher Education Academy), this reform to raise the status of learning and teaching as an academic activity was further boosted through 2003 Government White Paper: *The future of higher education* which included the following 'key points and proposals':

1. *"We are rebalancing funding so that new resources come into the sector not only through research and student numbers, but through strength in teaching.*
2. *To underpin reform, we will support improvements in teaching quality in all institutions. Additional money for pay will be conditional on higher education institutions having human resource strategies that explicitly value teaching and reward and promote good teachers.*
3. *New national professional standards for teaching in higher education will be established as the basis of accredited training for all staff, and all new teaching staff will receive accredited training by 2006.*
4. *We will also celebrate and reward teaching excellence. We are consulting on the establishment of a single national body – a teaching quality academy – which could be established by 2004 to develop and promote best practice in teaching.*
5. *Centres of Excellence in teaching will be established to reward good teaching at departmental level and to promote best practice, with each Centre getting £500,000 a year for five years, and the chance to bid for capital funding.*

6. *The National Teaching Fellowships Scheme will be increased in size to offer substantial rewards to twice as many outstanding teachers as at present.*”

[This is a partial list; and the numbers (1-6) are my for the purposes of making reference to individual points below]

(Department for Education and Skills (DfES), 2003 pp 46-47)

This White Paper (DfES, 2003) was fundamental to changes in my academic identity between 2003 and 2005 (and beyond): Points 1 and 2 created an environment in higher education that elevated the status of learning and teaching within universities – in response to the new environment, my University included excellence in learning and teaching as a route to professorship; additionally, the Faculty of Health (within which I worked) developed a coordinated strategy to both encourage innovation and improve students’ learning outcomes. The facets of this strategy are described in Bartholomew *et al.* (2009) as being:

- The Faculty Learning and Teaching Task Group
- Curriculum Innovation Fund
- Learning Partnerships Development Unit
- Module Makeover workshops

(p. 81)

I personally benefited from the first three of these facets. I was competitively selected to be a Faculty Learning and Teaching Task Group Fellow, this allowed me to be seconded from my post within the School of Radiography for

two-days per week in order to pursue learning and teaching innovation – it was this time release that allowed me to explore and develop the pedagogic methods that are at the centre of context-case 1. The Curriculum Innovation Fund invited staff to bid for funds up to £1500 to develop their learning and teaching practice. I was successful in receiving funds to buy the hardware to bulk author the CD ROMS that characterised the delivery mechanism of the video resources I developed in context-case 1.

The Learning Partnerships Development Unit was a Faculty-level commitment to reward and recognise individuals who wished to pursue an academic career with a focus on learning and teaching rather than research or academic management. The establishment of the unit led to the appointment of four people to Senior Academic positions each having a full time focus on developing learning and teaching through, among other things, partnership working with NHS Trusts, students and service users. I was one of the people appointed and this facilitated the beginning of a major shift in my academic identity – my role began to shift way from the teaching of undergraduates to facilitating the professional development of academic staff.

The video-based work (fully described in Chapter 4) led to my receiving a National Teaching Fellowship award. This national scheme had been expanded in 2004 in response to point 6 (above) of *The future of higher education* Government White Paper (DfES, 2003). The considerable funding I received (£50,000 GBP) allowed me to begin a process of investing in equipment and to fund attendance to international conferences and workshops in order to inform my growing interest in the use of video – much

of this was done through taking up membership of the International Society of the Learning Sciences in 2004.

### **1.3.2.2: Years 2005 - 2008**

Having moved to a full time position focused entirely on learning and teaching, particularly in relation to supporting others to develop their practice, it became important to be able to underpin my practice with research in a more transparent way. This importance emerges from the understanding that in order to engage others with (such things as) learning and teaching developments, they need robust evidence to convince them of the value in effecting such change themselves. I wrote about this phenomenon (Bartholomew and Bartholomew, 2011) citing a Diffusion of Innovation model (Moore's Chasm variant) adapted from Rogers (1962, 1983, 1995, 2003), Moore (1991) and Geoghegan (1994). A section from this book chapter is offered below by way of clarification of the concept. The focus of the chapter is the effectiveness of an academic staff development course I deliver (then) entitled *Learning Through Innovation*:

“The diffusion of innovation model as developed by Rogers (1962, 1983, 1995, 2003) has been very useful as a basis for exploring the pattern of uptake of innovations within a university context. The model is utilised to elicit appreciation of adoption typologies and what these mean for innovators in Higher Education. These typologies are introduced and explored with the intention of equipping participants with some awareness



of the need to be adaptable when trying to gain 'buy-in' from peers, managers and students.

Although a description (and critique) of this model is offered below, its inclusion (in some detail) in this chapter goes beyond our wish to offer a sample of indicative course content. Rather, we contend that understanding the model is central to understanding the way in which the course extends influence beyond the enhancement of the learning of the participants and the students they teach. It explains how the course represents an institutional response to supporting a widespread culture that delivers enhanced learning outcomes for students across the University.

For those unfamiliar with the model, a graphical representation is offered below as Figure 1 and summarises the following concepts:

- The uptake of an innovation within a population follows a predictable pattern of adoption;
- The population comprises individuals who can be grouped according to their propensity for uptake of the innovation;
- There are five groupings: Innovators, Early Adopters, Early Majority, Late Majority and Laggards;
- Uptake of an innovation begins with Innovators, with the other groups coming on board in the order given above and as shown in Figure 1;
- Laggards may never adopt at all;
- The most significant differences in propensity to adopt innovations occur between the Early Adopters and the Early Majority. Moore (1991) referred to this phenomenon (as it appears on the graphical representation of the model) as the 'chasm';

- Those differences emerge from the social and psychological characteristics of the participants of the groupings.

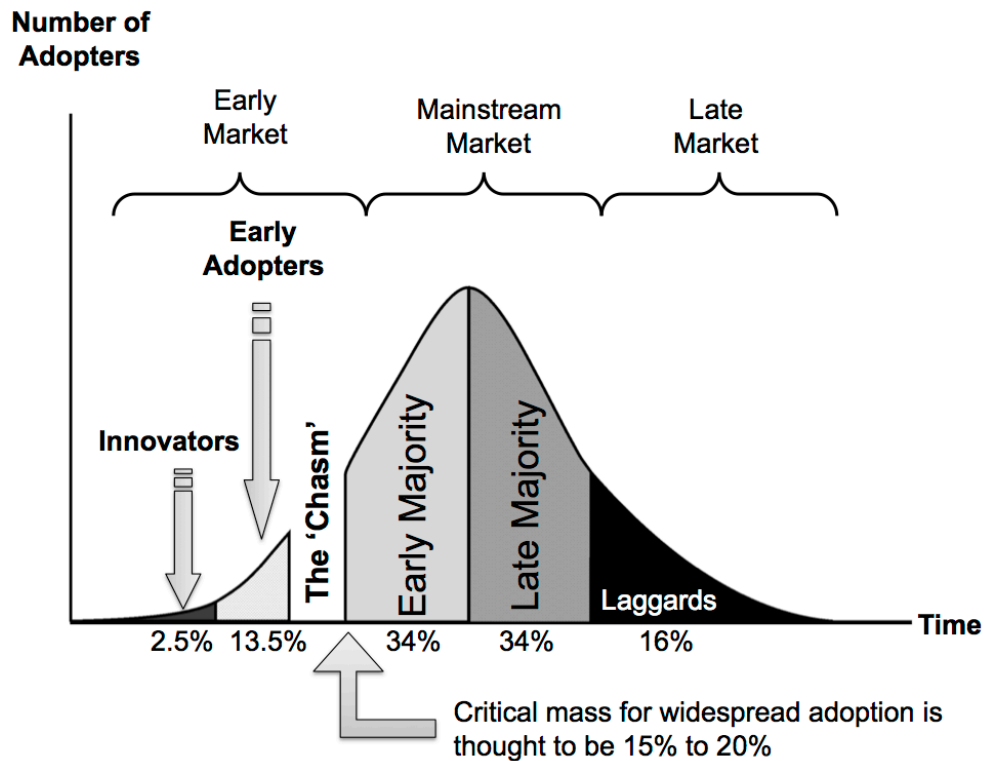


Figure 1: Adapted from Rogers (1983), Moore (1991), Geoghegan (1994)

Within our course the concept of the 'chasm' is critiqued. Classically, it is described that the Early Majority 'cross the chasm' as they come to adopt an innovation. We find this metaphor to be problematical since members of the Early Majority group do not spontaneously change their social and psychological profile to become Early Adopters. On our course we suggest that no one needs to 'cross' the chasm, rather it is incumbent upon the Innovators and Early Adopters to take action to 'close' the chasm, thus making the innovation readily accessible to the Early (and Late) Majority.

Geoghegan (1994) refers to the Early Majority as:

*“...pragmatists... ..who adopt a wait-and-see attitude toward new applications of technology, and want solid references and examples of close-to-home successes before adopting. They are not interested in abrupt, discontinuous change, but are more attuned to evolutionary modification of existing processes and methods. They want to see compelling value in an innovation before adopting it.”*

We believe that to meet the needs of the Early Majority, Innovators and Early Adopters need to generate persuasive evaluation data, as it is this evidence of effectiveness that closes the chasm and catalyses uptake of an innovation within the (large) population of the Early Majority. For that reason, a significant part of our course is given over to developing participant competence and confidence in undertaking robust evaluations of innovation and to the ways in which such evaluation data might be communicated to others. Through focusing on evaluation techniques on our course, we offer an opportunity for participants to develop not an ‘innovator’ identity, equipped to deliver enhancements in learning opportunities for their own students, but an ‘institutional change agent’ identity, someone who is able (and willing) to effect positive change much more broadly.

Participants are encouraged to consider the purposes of their evaluations in terms of ‘evaluation for accountability’, ‘evaluation for development’ and ‘evaluation for knowledge’. Frameworks for evaluation shared with participants include the RUFDATA model (Saunders 2000) and Kirkpatrick’s Four Levels of Evaluation (Kirkpatrick 1975). In the context of our course, central to any choice for evaluation is the notion of ‘audience’,

so participants are asked to consider (and indeed are assessed on) who the audience for their innovation is, who are *their* 'Early Majority' and what sort of evaluation data would be most persuasive to that audience?" (pp. 104-107)

[This quoted section is entirely attributable to me; my co-author has a hypothecated section that begins on page 110 of the cited publication]

My understanding of the Diffusion of Innovation model and my realisation that I now held faculty-wide responsibility for learning and teaching innovation; I had become an 'institutional change agent' to appropriate the terminology I used in the chapter cited above. I therefore pursued with purposeful intent a broadening of my knowledge of learning and teaching (pedagogical) research. Having in 2004 joined the International Society of the Learning Sciences, I began to participate to a greater extent in that community; to say this was a formative experience is an understatement – my exposure to that society through the International Conferences of the Learning Sciences (held biannually) and the interleaving Computer Supported Collaborative Learning conferences shaped how I thought about my teaching, my learning, my research and indeed learning *per se*. An example of new thinking / new learning and how that led to the development of new theory and a new model as I tried to make sense of my experiences and my doctoral study on my EdD programme is offered in the form of the 'adjunct narrative' for Chapter 5 (Section 5.7).

In 2005, I was one of four people who together wrote and submitted a bid from the Faculty of Health, on behalf of our University, for a CETL (Centre for Excellence in Learning and Teaching - see point 5 of the proposals of *The*

*future of higher education* White paper above). These centres were funded by the Higher Education Funding Council for England (HEFCE) through the (then) newly established Higher Education Academy (itself a result of the same White Paper (DfES, 2003) – see point 4 above). We were successful and were awarded £4.1 million to support learning and teaching over a period of five years. The generation of this level of income, from a learning and teaching funding source, was highly significant within my institution and further enhanced the status of learning and teaching as an academic activity. Furthermore, those people ‘running’ the CETL (including myself) were subsequently asked to move to the centre of the University and to take responsibility for learning and teaching across the University (and in later years, curriculum design and stakeholder engagement too – see section 1.3). Not all of the 74 CETLs funded were able to translate the momentum gained in relation to learning and teaching innovation and development beyond the five-year funding period of the CETL programme but in our case we were able to do just that:

*“This CETL was originally based within the University’s Faculty of Health where it sought to develop and investigate institutional and educational relationships between the University and the National Health Service. However, in 2008 a decision was made to move the CETL from the faculty and to relocate it at the centre of the University so that it could engage more widely across the University to spread the ethos and practice emerging from the CETL.”*

(SQW, 2011)

This national initiative had the effect of creating new opportunities for me to take greater responsibility for learning and teaching, curriculum design, quality enhancement and student engagement (Bartholomew *et al.*, 2013) and thus be empowered to embed further the use of video in my own practice and that of others.

### **1.3.2.3: Years 2008 – 2013**

As alluded to above, in 2008 I was asked to move from the Faculty of Health to the University's Centre for Enhancement of Learning and Teaching – a relatively new central unit that replaced the previous Staff and Student Development Department and included the incorporation of the University's CETL. I was asked to take academic leadership of a new University-wide initiative - the RoLEx (Redesign of the Learning Experience) project. There were three iterations of RoLEx; the first 2008/2009 facilitated wholesale redesign of the University's undergraduate portfolio, the second the redesign of post-graduate provision (Bartholomew *et al.*, 2010) and lastly a thematic rejuvenation of curricula in relation to the dual themes of enhancing assessment and bolstering employability. As part of my roles as Lead Academic Consultant to the RoLEx project, then Head of Curriculum Design and Academic Portfolio Development and then as Head of Curriculum Design and Academic Staff Development, I had the opportunity to bid for funds under Jisc's<sup>2</sup> e-Learning Programme in relation to a call for projects with the theme 'Institutional Approaches to Curriculum Design'. The bid was successful and we were awarded £397000 to run the T-SPARC (Technology-Supported

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<sup>2</sup>Jisc – Formally 'The JISC' (Joint Information Systems Committee)

Processes for Agile and Responsive Curricula) project. This project generated the context for context-case 3 (Chapter 6: Video as a tool for stakeholder engagement) and led to my use of video to involve colleagues in the development of the specifications for the project outputs and for the subsequent engagement of stakeholders in curriculum design – especially students (Bartholomew *et al.*, 2013).

The autobiographical context given above provides the backdrop for the specific research activities described as ‘context-cases’ within this thesis and for the adjunct learning opportunities described through the ‘adjunct narratives’ of Chapters 4, 5 and 6 and the theorisation that characterises Chapters 2 and 3.

#### **1.4: The three context-cases**

The empirical work presented in this thesis is organised around three ‘context-cases’; these are case studies in their own right and have been disseminated as such through sector-facing artefacts and publication; but for the purposes of this thesis, they are just part of the overarching case study of academic development. Nonetheless, the reader will find conventional accounts of research within the context-cases in proportion to the complexity of the work. The first context-case: video as a tool for teaching is the least complex and is characterised by a rich description of the starting context that underpins later research and the results of an investigation into the efficacy of the teaching methods used. It describes the pilot work that underpinned the initial change in curriculum delivery methods, the methodology and results relating to a

preliminary investigation into the efficacy of video lectures as a teaching method and a more extensive evaluation of the repurposing of the 'classroom time' liberated from didactic teaching.

This repurposing took the form of the introduction of collaboratively studied scenario-based learning tasks into the classroom. Subsequent evaluation activity demonstrated that this method of teaching was effective in facilitating learning. Pragmatically though, the mode of teaching was quite resource-intensive and I was curious as to whether it was the scenario-based nature or the collaborative nature of the learning activities that was yielding the positive learning results. The investigation of this question is comprehensively described in the second context-case: video as a tool for research. This context-case has embedded within it (as an 'adjunct narrative') my introduction to the Learning Sciences community and the adjunct learning and subsequent theorisation that cascaded from my participation in that research community. The context-case is characterised by the use of video as a data collection method and video analysis as a way to make sense of the learning processes of the students I taught. Broadly, I researched groups of students in triads and videoed them as they worked collaboratively through scenario-based units of study. The video footage so collected allowed for me to collect a persistent artefact that in effect made their cognition visible through their communication acts. There are profound challenges in measuring collaboration in such contexts but my attempts to do so were highly formative in terms of my learning and professional development. In addition to undertaking video observations of students, I included within my research a control group of students who undertook the scenario-based learning activity



on an individual basis with a view to try to discover whether levels of participation in collaborative activity correlated with performance enhancements as measured through differences in pre and post study tests.

My motivation to undertake this sort of complex work was related to my changing roles where I had growing responsibility for supporting academic colleagues and leading innovation ('change agency') in respect to curriculum delivery. As might be considered as being commensurate with this role, I had a desire to engage more fully in what is known as the 'scholarship of teaching and learning' (SoTL) so as to role-model the sorts of practice I was beginning to advocate to others. A fuller exploration of SoTL and how it relates to the professional development of academics can be found in Section 3.3 (in Chapter 3).

The usefulness of video (see section 1.5 for a discussion of the affordances of video as a technology in academic contexts) caused me to consider it a primary candidate as a method to collect data for the activity described through context-case 3: video as a tool for stakeholder engagement. This context-case maps chronologically to my professional roles of University Head of Curriculum Design and Academic Portfolio Development and Head of Curriculum Design and Academic Staff Development. This context-case describes the use of video to inform the development of new approaches to curriculum design and approval including the interviewing (to video) of members of academic staff in relation to their 'lived experience' of curriculum design. I describe how the video artefacts so produced allowed for the generation of a shareable suite of narrative accounts that were highly valuable in bringing about institutional change. Furthermore, this context-case

describes how the same resources were used as a sector-facing review as part of the reporting requirements for a substantial externally funded project. The video-based approach to reporting was well received by the funding body (Jisc).

These three case-contexts have a number of linking threads; firstly they align with a story of developing academic practice and identity and as such offer a (broadly) chronological account of professional development over a period of ten years. Secondly, they are a direct result of my innovative use of video in higher education and are thus indicative of a defining characteristic of the longitudinal case study being presented through this thesis. Thirdly, finally and most importantly – they are causal. Context-case 3 is characterised by the use video as a data collection tool only because of the experience I had gained from using it as a data collection tool as part of context-case 2. The research activity described in context-case 2 only came about because of the questions that arose as a consequence of context-case 1.

### **1.5: Introduction to video as a useful tool in higher education**

Given my central placement of video as a tool within this thesis, it is necessary to share with the reader some of the affordances of video and to explain how and why those affordances have been attractive to me as a practitioner working in higher education over the last ten years.

In the context of this thesis it is not enough to write of the affordances of video as a communication media, though I shall do so soon enough; rather, it is first necessary to consider the affordances of video *devices* as a tool to aid the

practitioner in higher education. The last ten years has seen a revolution in video devices, in terms of the recording medium, the 'form-factor' of the devices, the cost and availability of these devices, the availability of suitable software to edit video and the decreasing cost of storage media – both on the devices themselves and on the computers that video 'editors' use to store and index their collated material.

As devices became affordable and the hardware and software required to conduct a full capture-edit-store workflow became available, I was able to fully integrate video into my academic practice. Of course, at the time of thesis write-up video devices are ubiquitous; even mobile phones contain technology that enables the capture of high definition video and the devices have sufficient onboard storage memory to secure many hours of footage. Many of these devices can facilitate editing of high definition video without the need to export it to a computer, but if transfer to a computer is desired, then this is just a matter of synchronising content. At the time when I began to innovate with video, no such technology-enabled environment was in place; rather I recorded my video to digital videotape and then transferred it to a personal computer via a dedicated video capture add-in card. Despite the seemingly (by today's standards) arduous workflow, the process was straightforward and manageable, and for the most part things have only gotten easier. I say 'for the most part' because as technology has advanced to the point of ubiquitous video, the marketplace populated by proprietary devices and formats has expanded and diversified – this has led to a reduction in cross-compatibility creating a veritable minefield for the uninitiated. Nonetheless, any academic wishing to begin to use video to

support their academic practice should have little difficulty in finding a workable solution eventually.

Now that I've established that the affordances of video as a usable technology are contingent on it being affordable, pragmatic and available, why use it?

The broad affordances of video are its:

- Relative authenticity
- Attributability
- Repeatability
- Persistence
- Duplicability

**Relative authenticity:**

Video is a fairly 'authentic' medium; by that I mean that it captures and communicates high fidelity information. For the purposes of social research and educational practice, this translates to a good degree of richness of communication. For the purposes of this thesis, whenever I refer to video, I am referring to synchronised video and audio material. Consequently a piece of video that has human activity as its focus is able to capture and communicate communication acts with little loss; the audio data communicates oral information in the form of sound, including intonated speech and the video information communicates information relating to the (recorded) environment and visual aspects of communication including gesture. Video (including audio) communicates a wealth of other visual socio-cultural clues too, such as dress, age, gender, accent, ethnicity and a whole range of human physical characteristics that may be helpful to a video analyst

with an interest in social research. From a teaching perspective one can use video footage to replace oneself physically (Maier *et al.*, 1998) and offer students a fairly authentic representation of a real life presentation; again, little is lost.

It is not *perfectly* authentic though, Section 6.3 (in Chapter 6) reflects on the power researchers using video have to ‘frame’ data by being selective with what they capture, keep and share.

### **Attributability**

When viewing video, comments and contributions are attributable to specific individuals. This is useful when conducting research into group processes or at the point of dissemination when the transparency of the agency of the contributor is core to the value of the message.

### **Repeatability:**

Video, especially non-linear digital video (that which does not require physical rewinding) is highly repeatable. Viewers who have access to a piece of video can replay it as often as they like; for the video analyst with an interest in conducting (for example) discourse analysis there is the ability to replay sections to aid with transcription or to revisit the data with a different interpretative lens. For the student accessing a ‘video lecture’, the ‘lesson’ can be revisited as many times as is wished.

### **Persistence:**

Subtly different to ‘repeatability’ and ‘authenticity’, (digital) video is also persistent – it represents a moment in time that can be kept and revisited

without degradation of the quality or content of that which was captured. This makes video particularly useful for any form of research that seeks to study phenomena in a longitudinal way. Important too, is the ability to come back to data sets much later to reflect upon them after initial analysis has been conducted. Of course, this is a form of 'repetition' but it is only possible because the video is persistent.

### **Duplicability:**

Digital video can be copied perfectly – without loss. Because of this, it can be distributed in many different ways. Users of videos can have their 'own' local copy to do with as they wish – it can be re-edited and re-presented, it can be annotated, it can be cut up into mini-clips for thematic coding – all without compromising the integrity of the original source data. In my context, as described in context-case 1 – I duplicated my video-lectures onto CD ROMs – one per student. The absence of broadband Internet (in a 2003/2004 historical context) as a platform for distribution from a single file was not a problem, there was no reliance on a centrally held copy. I also created mini-clips for coding in context-cases 2 and 3; see Chapters 5 and 6.

It is these affordances that have led me to utilise video within multiple facets of my academic practice; I would contend that the use of video is a strong characteristic of my academic identity and has been a logical and meaningful focus for my doctoral study. Thus, although my thesis is a case study of academic staff development, it hosts within it three context-cases as evidence of the tangible enhancements to my academic practice that have been realised through my sustained use of video.

## **1.6: A note to context**

Prior to summarising this chapter, it is prudent to add a contextual note that speaks to the challenge of presenting a thesis that offers a narrative biographical account of a 'lived academic practice' whilst maintaining a suitably reflexive and critical account of the data presented herein. In this respect, the reader should be mindful that some facets of the nested empirical work, which present a positive picture of the data, reflect the contemporaneous perspective of a practitioner seeking to inform and iteratively develop practice rather than that of a researcher undertaking a discrete study.

## **1.7: Chapter Summary**

This chapter has introduced the thesis as a response to a need to represent both the process and the products of my research over my period of doctoral study. It acknowledges and shares the notion that the process of researching is a highly formative (even transformative) process with the achievement of (emergent) learning outcomes that are tangential to conventional products of research. The chapter has argued for the need for a slightly unconventional structure that is less linear than a 'traditional' thesis with the research 'story' told in a way that includes three embedded 'context cases' within a wider case study of academic / professional development. This approach has led to emergent theory-building in the form of Chapters 2 and 3 and the 'adjunct narratives' of Chapters 4, 5 and 6. The overarching structure of this approach is graphically summarised in Figure 2.

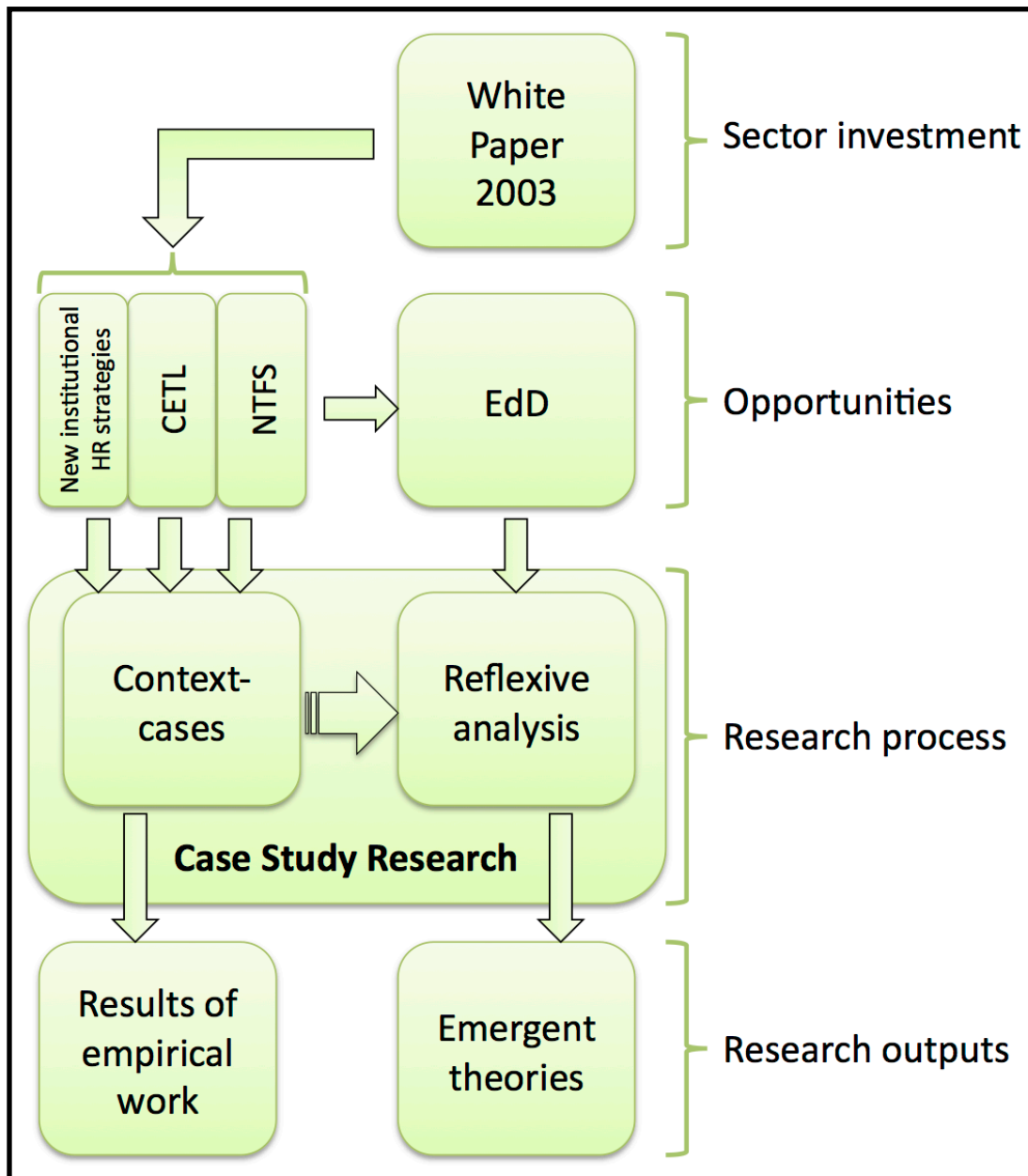


Figure 2: Overarching conceptual structure of my thesis

As can be seen, the context-cases sit within a wider case-study research process that had led to the development of emergent theories in addition to the results of the empirical results of the context-cases themselves. This activity has cascaded from the opportunities made available to me as a consequence of the White Paper of 2003 via the funding I received through my institution's prioritisation of learning and teaching scholarship as an



academic activity, its CETL and my own National Teaching Fellowship award. This latter facet of funding has funded the majority of my EdD study and this, in turn, has provided a further opportunity to conduct reflexive analysis upon my experiences. This opportunity for reflexive analysis is what has allowed me to offer this thesis as a piece of research in its own right rather than as an abstracted description of it. This contention is fully explored in Chapter 2.

The chapter has offered a fairly rich introductory description of the sector-wide imperatives of 2003-2013 and shared the institutional initiatives that cascaded from Government policy decisions and how these initiatives created an environment that has shaped my identity, role, academic practice and indeed career. Examples of my academic practice, characterised by my sustained (but varied) use of video as a technology to support my academic practice over the period of study has been shared within an introduction to each of the three context-cases; these are supported by a brief exposition of the affordances of video as they have related to the needs of my evolving academic practice.

## **CHAPTER 2: SINGLE CASE STUDY AS A LEGITIMATE RESEARCH METHOD FOR DOCTORAL STUDY**

### **2.1: Introduction to the chapter**

As introduced in Section 1.2, this thesis is slightly unconventional in its style and structure; this is as a consequence of my choice to place as much emphasis on the learning that has cascaded from the process of researching aspects of my academic practice as I do on the products of my research, as presented in the findings embedded within the three context-cases. This has led me to construct the thesis as a longitudinal case study of academic development using thematically aligned context-cases to illustrate, and to reflect on, developing practice. In that earlier section (1.2), I also considered the risks of this approach in terms of being misaligned with commonly held assumptions regarding the structure, content and style of doctoral theses and, using the work of Fisher and Phelps (2006), I reflected on my motivations for writing an unconventional thesis and how I might mitigate the associated risks of non-alignment with such assumptions. In this regard, much can be achieved by offering literature-articulated rationales for:

- My choice of single case study methodology as a legitimate vehicle to present my research.
- My choice of professional development as a legitimate focus for doctoral study.

I shall expand on the first point in this chapter and the second in Chapter 3.

## 2.2: Case study methodology as a legitimate vehicle to present my research

*“Case study is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances.”*

Stake (1995, p.xi)

With reference to the quote given above, the ‘case’ being brought into focus for this thesis is my professional development over the last ten years; and the ‘important circumstances’ are the tumultuous changes that have occurred within the higher education sector over that time period, particularly the impact of the 2003 White Paper: *The future of higher education* (DfES, 2003) as it relates to my academic identity and consequent activities.

The definition of ‘case study’ attributed to Stake (1995) above is just one of many worthy of inclusion in discussion and, in order to articulate my work with wider conceptions of case study research, I have arranged some prominent definitions into a schema within which I have located my own work. This schema is presented in section 2.3.2 below and represents theorisation as a consequence of undertaking write-up of my research. Firstly though, given that I seek here to justify the use of case study research as a legitimate vehicle to present my research, it is incumbent upon me to explore its value.

In his defence of case study research ‘*Five Misunderstandings About Case Study Research*’, Flyvbjerg (2006) points to Campbell and Stanley (1966) as an indicator of early scepticism of case study research. Campbell and Stanley (*ibid.*) conclude that “*such studies have a total absence of control as to be of*

*almost no scientific value*” (p. 6) – of course, the inclusion of the word ‘scientific’ in their tirade is significant, with its allusion towards incompatibility with a positivist standpoint. They go on to write “*Any appearance of absolute knowledge, or intrinsic knowledge about singular isolated objects, is found to be illusory upon analysis*” (p. 6). Through my broad agreement with Flyvbjerg (2006) below, I challenge this view – contending that the case study’s ‘contextual proximity’, what Flyvbjerg (*ibid.*) refers to as ‘proximity to reality’, offers the opposite of being ‘illusory’; I contend that case study research, through its sharing of rich contextual detail, communicates a particular form authenticity - one that is no less a legitimate source of new knowledge than could be argued for less granular, more broadly framed, research approaches. There is an additional reason to feel relaxed about offering a challenge to Campbell and Stanley’s position of 1966. As Flyvbjerg (*ibid.*) notes, Campbell later made an about-face to become a staunch advocate of case study research.

Unsurprisingly (given its title), central to Flyvbjerg’s 2006 paper is the critique of five contentions in relation to case study research – referred to as ‘five misunderstandings’; I cite each below, offer my own critique and then reflect on the thoughts offered by Flyvbjerg (*ibid.*). By doing so, I use Flyvbjerg’s paper as an overarching framework to mount my own defence of case study methodology:

### 2.2.1: Misunderstanding 1

*“General, theoretical (context-independent) knowledge is more valuable than concrete, practical (context-dependent) knowledge.”*

(p. 221)

As will be made clear within this chapter I am a primary ‘user’ of the knowledge, primary ‘user’ of the case. The overarching case report of academic development (*product*) is simply a narrative, but I contend the *process* of studying the case is case study *research*; a process that allows me, as a user of the data (by which I mean the narrative - itself a representation of a lived experience), to make sense of my learning and to construct new understanding from my reflexive engagement with the associated study process. In this way, the write-up, this thesis (and interim writings), is an integral part of the case study research activity and not just an abstracted commentary upon it. With that in mind, in this situation, it is the specificity of “*concrete, practical (context-dependent) knowledge*” (*ibid.*) that makes it much more valuable than more general forms of knowledge.

Flyvbjerg (*ibid.*) speaks partly to this when he reflects on the writing of Peattie (2001), he states: “*The case story is itself the result. It is a ‘virtual reality,’ so to speak*”; In relation to my context, I’m not sure I agree with the latter part of the statement – i.e. the notion that the case story is some form of ‘virtual reality’; that would infer the narrative, the case story, is just a representation of the context; my view is slightly different – I’m contending that the case, when written with reflexive analysis, transcends representation and ‘augments’

reality (the experience of the case) because the act of writing-up the narrative offers an opportunity for new reflexive analyses - thus creating new understandings, new knowledge if you will, from that process. This proposal is diagrammatically represented as Figure 3 and the idea is explored further throughout the remainder of this chapter.

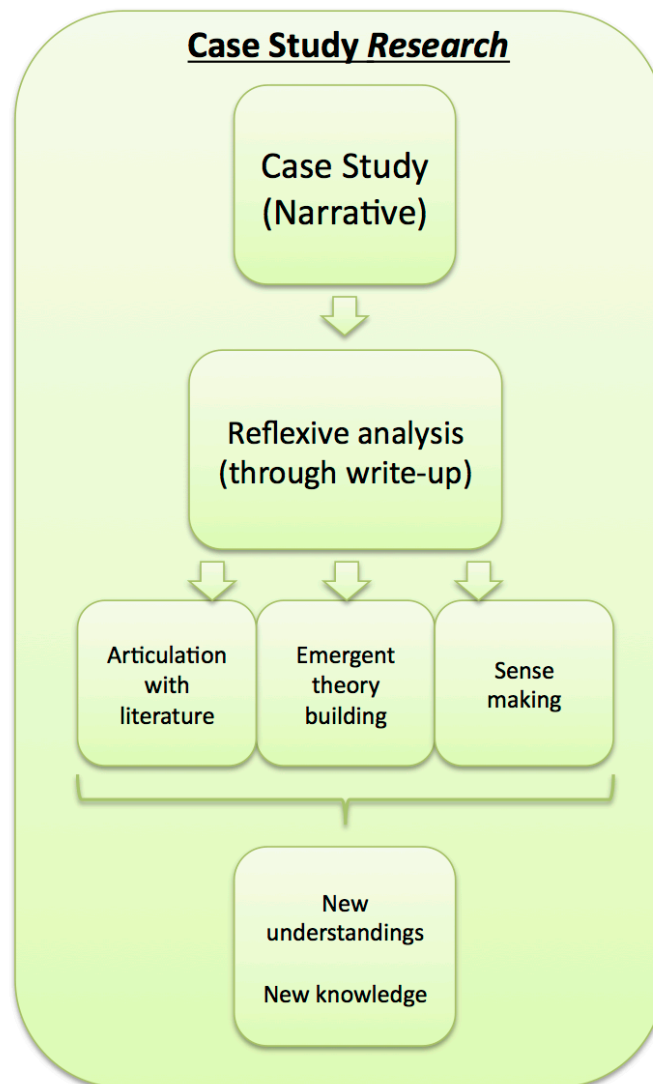


Figure 3: *Diagrammatic representation of the proposed relationship between a (simple) Case Study and Case Study Research.*

This model is also useful by way of complementing Figure 2 to explain the structure of the thesis; the reflexive analyses as, for example, manifested through the ‘adjunct narratives’ are an inevitable consequence of taking this

approach, as they cascade from reflecting on and making sense of the lived experience represented by the context-cases.

Similarly, the theorisation around case study research included as part of this chapter, particularly the modelling of a typological schema for case study research (Section 2.3.2), can be considered as an output of such reflexive analysis when brought to bear on the overarching case study of academic professional development. The theorisation of the relationships between professionalism, communities, scholarship and learning as offered in Chapter 3 represents another example of how researching one's practices extends into the write-up process itself.

This notion of theories emerging as a case is examined is 'labelled' by Simons (2009) as a 'theory-generated case study'. She aligns such work with grounded theory and constructivist grounded theory approaches or "*some other interpretive lens that leads to an eventual theory of a case*" (p. 22). I don't fully align my conception of my work with this notion, but I do contend that nascent theories have emerged from my context-cases. I would not say that this has led to the development of an 'eventual theory' of the case but I could make a claim that my theorisation of *case study research* (see Section 2.3), does amount to an 'eventual theory'. A fuller consideration of how my case study aligns with Simons' (*ibid.*) nomenclature of case study research and the work of other authors is covered in Section 2.3

For his part, Flyvbjerg (2006) modifies the statement he introduces as 'Misunderstanding 1' to the following:

*“Predictive theories and universals cannot be found in the study of human affairs. Concrete, context-dependent knowledge is, therefore, more valuable than the vain search for predictive theories and universals.”* (p. 224)

I agree with the broad thrust of this statement but find the *“universals cannot be found in the study of human affairs”* part to be a little too certain. I believe that broader methodologies of social research that seek to investigate and disseminate aggregate findings are not without worth and *can* be ‘found’, they just offer a differently framed picture, for a different audience and thus have a different use.

### **2.2.2: Misunderstanding 2**

*“One cannot generalize on the basis of an individual case; therefore, the case study cannot contribute to scientific development.”* (p. 221)

Once again, I’ll formulate my own critique of this statement and return to Flyvbjerg’s adaptation of the statement at the end of this section.

This ‘statement of misunderstanding’ pre-supposes that whenever a finding is not generalisable, it is not a valid contribution to knowledge. As discussed above, a case study is rich in context, which contributes to its authenticity. Such authenticity, by virtue of its ‘proximity to reality’ is a good approximation of an experienced truth, or at least some part of it. Sometimes it can be contended that a case is highly indicative of a more generalisable phenomenon, whereby the specificity of context is the very thing that makes it generalisable. Flyvbjerg (*ibid.*) refers to this specificity of context when



discussing sampling strategies; he refers to ‘critical cases’ whereby the purpose of selection is “*To achieve information that permits logical deductions of the type. ‘If this is (not) valid for this case, then it applies to all (no) cases’*” (p. 230). He goes on to describe a case drawn from occupational medicine whereby a study is conducted to find out whether working with organic solvents correlates with incidents of brain damage. Rather than use a large sample of companies that used organic solvents, a single case was studied where adherence to all regulations, safeguards and best practice guidance was complied with – the logic being that if a correlation was found in this case, then logically it would be found in all cases.

I contend that my professional development, this narrative account, is a critical case. Given that I received a National Teaching Fellowship award (at the highest monetary level that was historically offered), was part of a successful CETL, had been promoted against criteria that related to learning and teaching practice and had accessed the learning opportunities offered by a professional doctorate in Learning and Learning Contexts; and given that all those opportunities stemmed from the 2003 White Paper, if evidence of impact of the White Paper (DfES, 2003) could not be found in my academic practice, then one might contend that it is unlikely that the White Paper (DfES, 2003) had any wide impact in relation to the professional development of those who support learning and teaching in higher education.

Of course, given the opportunities I have had for professional development, it would be surprising if I were not able to demonstrate such. Here though, this case study is not *just* being used to establish a correlation between the sector-investment made post-White Paper (of 2003) and the professional

development of educators in higher education; it is also being used to offer an example of the specifics of such a case, to offer detail and to use that position to make sense of the experiences. The inclusion of my three nested context-cases offers this detail and communicates specifics of developing academic practice as catalysed by the impact of the White Paper of 2003 (all within the theme of using video in my practice).

Returning to Flyvbjerg's rebuttal of the statement (Misunderstanding 2), he modifies it to:

*"One can often generalize on the basis of a single case, and the case study may be central to scientific development via generalization as supplement or alternative to other methods. But formal generalization is overvalued as a source of scientific development, whereas "the force of example" is underestimated." (ibid.: p. 228)*

I agree with the first sentence but the second runs the risk of being a rather sweeping generalisation itself. It would perhaps be more appropriate to insert a qualifier to the second sentence: *"But, **without consideration of caveats**, formal generalization is overvalued as a source of scientific development, whereas "the force of example" is underestimated."*

My understanding of the logic behind Flyvbjerg's contention is that formal generalisation is overvalued because of its 'fragility' – that is to say a generalisation will always be tentative and will always have the potential to be 'broken' by a single case that contradicts the generalised finding. Of course, this underpins the scientific method and leads one to why researchers try to disprove a null hypothesis when conducting scientific work. However, I think

Flyvbjerg goes further than this and argues that outside of case study approaches, hypotheses (and thus null hypotheses) are constructed from data sets that are absent of the necessary detail that would make generalisation viable. I don't disagree with that but I believe that the users of such generalised findings are mostly aware of its limitations and apply the necessary caveats. I understand that this might not always be the case, but in those situations the fault does not lie with the researcher or their attempts at generalisation – rather the fault lies with the user/interpreter of the research and their inability or lack of willingness to apply the necessary caveats to make the research useful. So, when Flyvbjerg contends that generalisation is overvalued, I want to ask “by whom?”

### **2.2.3: Misunderstanding 3**

*“The case study is most useful for generating hypotheses; that is, in the first stage of a total research process, whereas other methods are more suitable for hypotheses testing and theory building.” (p. 221)*

In terms of my rebuttal of this ‘misunderstanding’, there is considerable overlap with the arguments made above. Can hypotheses be tested with case studies? Yes they can; the examples given pertaining to the use of a critical case to test a hypothesis has already been argued above (the organic solvent exposure case and my own case, the impact of the White Paper of 2003 on the academic practice of educators working in higher education). Can a case study build theory? Yes it can; I have introduced aspects of Simons’ (2009) nomenclature of case study research, which includes ‘theory-generated’

cases. Additionally, Dooley (2002) states: *“The researcher who embarks on case study research is usually interested in a specific phenomenon and wishes to understand it completely, not by controlling variables but rather by observing all of the variables and their interacting relationships. From this single observation, the start of a theory may be formed”* (p.335). Dooley (*ibid.*) also draws on Herling *et al.* (2000) to contend that case study research is an *“essential methodology for applied disciplines”* (p. 338) and goes on to describe it as a way of undertaking *“theory building or theory testing”* (p. 338). Dooley also cites Torraco (1997) who defines theory-building as *“the process of modelling real-world phenomenon”* (p. 123) – a definition that is conceptually close to the process of reflexive analysis that leads to new understanding I have described above in section 2.2.1.

As was the case for the other ‘misunderstandings’, I now return to Flyvbjerg’s modified statement made by way of his rebuttal. He has offered an alternative statement that reads:

*“The case study is useful for both generating and testing of hypotheses but is not limited to these research activities alone.”* (Flyvbjerg 2006, p. 229)

This time, I am in full agreement with the alternative statement.

#### **2.2.4: Misunderstanding 4**

*“The case study contains a bias toward verification, that is, a tendency to confirm the researcher’s preconceived notions.”* (p. 221)

Although I would concede that preconceived notions are embedded within case studies, I would also contend that all qualitative research is always subjectively framed at some level or another. Furthermore, I hold the view that transparent subjectivity is a strength of qualitative methods and particularly so for case study approaches. For case studies – particular auto-ethnographic case studies, those preconceptions form part of the data to be researched; they are a result, perhaps even a representation, of the lived experience being recounted. As for bias towards verification – I would challenge this as follows: In section 2.2.1 I argued that the process of case study research included a form of development of thinking that starts with a simple narrative account of a lived experience and moves towards higher levels of understanding as sense is made of the experience. This ‘sense making’ emerges from a process of reflexive analysis that is a form of theory building (as I have argued in section 2.2.3), whereby new ideas and new models, constructed to attempt to explain experiences, emerge from the writing process allowing the researcher/writer to iterate the narrative account, layering ever-increasing meaning upon the narrative artefact. In section 2.2.1, I took issue with Flyvbjerg’s (2006) idea of the construction of a ‘virtual reality’ and contended that the writing process, the act of reflexive analysis leads to an ‘augmented reality’ characterised by new ideas, new theories and new models that would not have come into being without the researcher having the opportunity to undertake such reflexive analysis.

So, as the case (narrative account) is researched, new perspectives are articulated with the case and the narrative account itself is iterated. Each iteration takes the final work further away from an unarticulated position; thus,

rather than reinforcing *preconceptions*, the process facilitates *conception*, making the final work (a piece of case study *research* – not just a case study) a *post-conceived* artefact. In the model I am proposing in this chapter, the very point of writing-up the case is to research it, to develop new understandings in relation to the experiences being recounted. This search for *new* understanding means that case study research has little structural propensity towards verification and much structural propensity towards modification. I therefore find I am in agreement with Flyvbjerg (*ibid.*) when he offers the following statement as an alternative to ‘misunderstanding 4’:

*“The case study contains no greater bias toward verification of the researcher’s preconceived notions than other methods of inquiry. On the contrary, experience indicates that the case study contains a greater bias toward falsification of preconceived notions than toward verification.”* (p. 237)

Although my argument falls short of contending that a case study has a greater bias towards falsification, my construct of ‘iteration’ can accommodate ‘falsification’ as the iterated position.

### **2.2.5: Misunderstanding 5**

*“It is often difficult to summarize and develop general propositions and theories on the basis of specific case studies.”* (p. 235)

For my purposes, this is the point at which my use of Flyvbjerg’s framework becomes subject to the law of diminishing returns. I find this statement (Misunderstanding 5) to have considerable conceptual overlap with points I have already raised, but nonetheless it is useful to offer a rebuttal of this misunderstanding by way of constructing a summary for section 2.2. Firstly

though, for the sake of completeness, I offer Flyvbjerg's suggested alternative statement below:

*"It is correct that summarizing case studies is often difficult, especially as concerns case process. It is less correct as regards case outcomes. The problems in summarizing case studies, however, are due more often to the properties of the reality studied than to the case study as a research method. Often it is not desirable to summarize and generalize case studies. Good studies should be read as narratives in their entirety."* (p. 241)

I'm in broad agreement with this statement having already offered arguments that support it but by way of my own summary for this section, I offer a commentary on Misunderstanding 5 below in three parts:

#### **2.2.5.1: Summarising case studies**

Summarising case studies can be problematic as their strength lies in their contextual proximity. As such, the process of summarising will inevitably lead to loss of the very detail that I have argued sets case study methods apart from different forms of social research.

#### **2.2.5.2: Developing propositions from case studies**

The development of general propositions from case studies (including a single case study approach) is possible, especially where the research focuses on a 'critical case' whereby the case has contextual properties that allow for generalisation by virtue of it being highly indicative of the phenomenon being researched.

### **2.2.5.3: Developing theory from case studies**

I have argued that ‘case studies’ are rich narratives that describe lived experiences (perceived realities) and that ‘case study *research*’ augments this reality by applying a process of reflexive analysis to the case. This analysis seeks to create new understanding by articulating the representation of the lived experience (the narrative) with new thinking informed by literature and engagement with communities (see Chapter 3). This process creates new knowledge *from* the case as theory is built and models are developed to try to make sense of the world around us. Case studies are particularly strong in this regard because their contextual proximity (Flyvbjerg’s ‘proximity to reality’) afford them with detail that make them a better approximation of the world than data sets that emerge from less granular forms of social inquiry.

### **2.3: Case study research methods – variations upon a theme**

Many authors have offered their own conceptions of what case study/case study research is and what variants of the method there may be. Often they share their conceptions with a label (a qualifying word) and a broad definition of the sub-type. Although I’m not opposed to such construction of these concept labels, I think there is a tension inherent within their construction. On one hand the labels can be seen as a semantic device, simply the appropriation of a word that is used to convey the sense of a method that is at variance with more commonly held understandings; and secondly they are exactly the sorts of constructs we should expect people to make as they try to make sense of their experiences. When people write about case study research, so theories and models emerge as a consequence of their thinking



and writing – this is exactly analogous to the process of theory generation discussed in the earlier sections in this chapter. Of course, in my case – I have contended that the act of writing this thesis is part of the case study research I am presenting (through the thesis) and as such, theory will emerge as a process (even consequence) of augmenting the narrative as I apply reflexive analysis to the act of writing up my experiences. In this case, my experience includes a deeper investigation of case study research than would be the case than if I made no attempt to write-up my experiences. Some of my theory generation is captured in the ‘adjunct narratives’ included later in the thesis, but here (in this chapter) some theory generation relating to case study research has emerged from my process of write-up.

Firstly, I have contended/theorised that case study and case study *research* are different; the case study (the narrative) represents the data to be considered (in that it is a proxy for the lived experience) and that case study *research* only occurs when reflexive analysis is applied to the data set; new understandings emerge as the narrative is articulated with the wider literature base (and other forms of community engagement – see Figure 7 in Section 3.4 of Chapter 3) leading to the development of new models and theories. By way of example, but also inevitably given what I have contended, I undertake just such activity below, by outlining a variety of case study typologies as I have found them in literature and integrating them into a common schema that incorporates my own ideas.

### 2.3.1: Exploring case study typologies

When exploring literature in relation to case study research, one quickly uncovers a variety of forms of the method – each with its own ‘label’ (as indicated with use of italics below). Stake (1995) makes reference to *intrinsic* case studies – undertaken for the intrinsic interest in the case. He contrasts this with *instrumental* case studies undertaken to explore a particular research question or interest. Stake also makes references to *collective* cases and implicitly (through the use of a scenario of a teacher researching the case of a single student) *single* cases.

Bassey (1999) makes reference to *theory-seeking* and *theory-testing* case studies. He makes reference to them within the context of what has been described above as ‘critical cases’, i.e. the particularity of the case (Bassey refers to ‘singularity’) makes it reasonable to assume that the case is likely to be “*typical of something more general*” (p. 62). Bassey attempts to tie his nomenclature with that of other authors – he relates his *theory-seeking* term with Yin’s (1993) concept of *exploratory* case study and his *theory-testing* term with Yin’s (*ibid.*) concept of *explanatory* case study. Furthermore, he relates both *theory-seeking* and *theory-testing* to Stake’s (1995) concept of the *instrumental* case study. Bassey (1999) also refers to *story-telling* and *picture-drawing* case studies – he sees these terms as broadly interchangeable and sees the story-telling process as being analytical “*aimed at illuminating theory*” (p. 62); he links this with Yin’s (1993) concept of the *descriptive* case study and what Stake (1995) refers to as *intrinsic* case study.

I take a different view. For me, as I have argued in the earlier part of this chapter, the story-telling part of the case is the descriptive non-analytical part of case study research – it forms the data *to be* analysed. The activity that creates new meaning and generates theory is that which goes beyond the story-telling, beyond describing. So, although I agree that Bassey's *story-telling* and Yin's descriptive *typologies* are related, my constructs of story-telling and description puts these at some semantic distance from Stake's *intrinsic* case study concept. For me, an intrinsic case study, one studied for the inherent interest, would be one that is closely examined, studied, analysed; one that led to, in my terms, the most augmentation of reality.

Additionally, Bassey (1999) with Merriam (1988) and Simons (2009) make mention of *evaluative* case studies – of course, evaluation can be the purpose of case study research but I'm not convinced the purpose of the research on its own should defines it as a type. Merriam (1988), like Yin (1993) offers up the *descriptive* type of case study and throws *interpretative* into the mix too. There will be other authors (unexplored by me) who have attempted to generate a nomenclature for case study research too. Mindful though, that through the act of writing up my case, I have the opportunity to generate theory, to build my own models, I feel compelled to reflect on what I have learnt about case studies and try to build a model of case study research to advance my understanding.

### **2.3.2: Modelling a schema of case study research typologies**

As I explored the typological words and tried to articulate them with my own understanding of what case study research had come to mean to me, I found that I could group the words (concept labels) into sets and that I was able to add my own concept labels to these sets. This allowed me to begin to build a graphical model made up of two parts. Firstly, I felt that some of the typologies put forwards by other authors pertained to case study as a 'method'. Secondly I felt some of the typologies spoke to case study research in terms of its 'focus'. As my model developed I found that both 'method' and 'focus' had three components. Each is shown (and discussed) as Figure 4 and Figure 5.

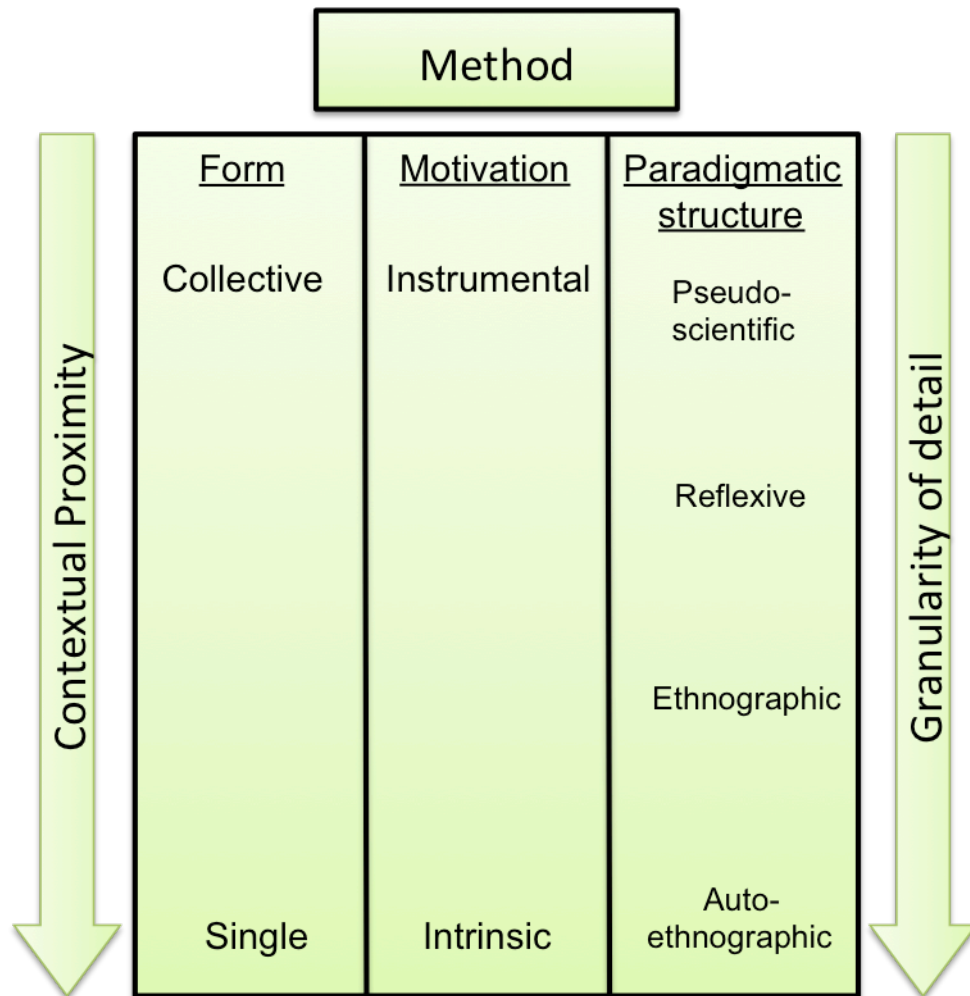


Figure 4: Method' facet of a typological schema for case study research

For 'method' it was useful to aggregate typologies into 'form', 'motivation' and 'paradigmatic structure'. I was then able to arrange the typologies according to their 'contextual proximity' (what Flyvbjerg called 'proximity to reality') and the granularity of detail collected. A collective case study drawn from many cases would not, I contend, seek to collect the specifics of a single case – rather, such a study would report with reference to aggregate data. Because of this – the contextual proximity to any lived experience (a reality) would be less than would be the case for a single-case study. I also contend that instrumental case study research processes – those constructed to answer a particular

pressing question are more likely to adopt pseudo-scientific methods and thus be more likely to make use of multiple cases as a source of data. Auto-ethnographic work is, I would contend, likely to be related to a single case (the researcher's lived experience) and would likely be intrinsic in its motivation.

Dooley (2002) takes what I feel is quite a positivist view on what case study research should 'look like' and states that:

*“Case study research, like all other forms of research, must be concerned with issues such as methodological rigor, validity, and reliability. This is accomplished through the six elements below.*

- *Determine and define the research questions*
- *Select the cases and determine data-gathering and analysis techniques*
- *Prepare to collect data*
- *Collect data in the field*
- *Evaluate and analyze the data*
- *Prepare the report”*

(pp. 338-339)

Although I would not argue that case study research *could* 'look like' this, I have already argued in the earlier sections of this chapter that it does not always need to. There will be a range of paradigms that underpin case study research and I postulate that each would lead to a chosen (paradigmatic) structure.

I shall now discuss the 'focus' facet of the modelled schema:

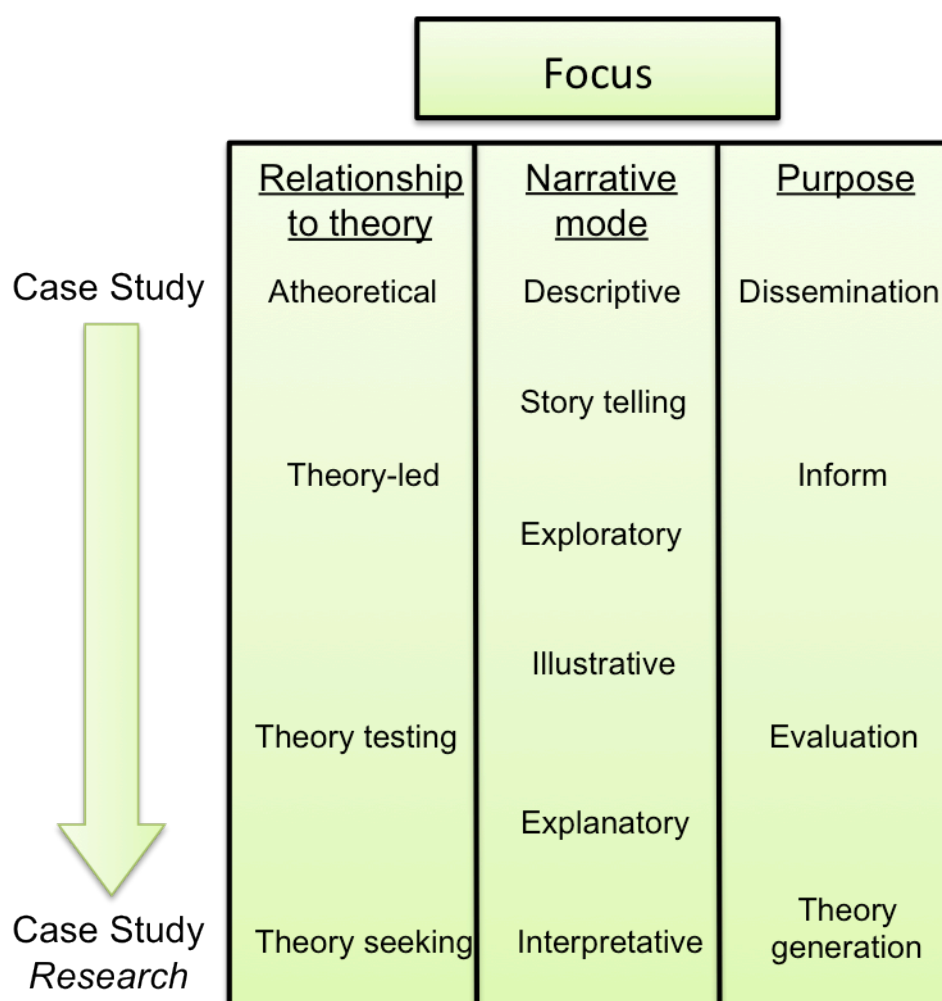


Figure 5: 'Focus' facet of a typological schema for case study research

The second facet of my schema relates to the 'focus' of case study research. I found it useful to aggregate the various typologies put forward by the authors I have referenced according to what they said about 'relationship to theory', 'narrative mode, and 'purpose'. Many authors (Dooley, 2002; Simons, 2009; Bassey, 1999) write of the relationship to theory when discussing case study research and so I have incorporated this within the 'focus' facet of my schema. Earlier in this chapter, I have contended that a case study, in and of itself, is just a narrative account – the raw data that, through reflexive

analysis, becomes part of case study *research*. This argument is reflected in my schema. A purely descriptive case, perhaps conducted purely for the purpose of disseminating the experience, could (and perhaps would) be atheoretical. I have also contended that the reflexive analysis that I argue differentiates case study research from a report in the form of a case study leads to the researcher making sense of the world and generating theories and models informed by their new thinking. I therefore place ‘theory-seeking’ case study work at the ‘case study research’ end of the spectrum.

Authors such as Yin (1994) and Merriam (1988) have introduced case study typologies that speak to the narrative mode, the way in which the researcher interrogates and presents the data (the case) – for me, there was a sense of alignment between narrative modes that were more descriptive and those that seek to move beyond ‘description’ and into ‘interpretation’; this is reflected in my schema.

Some authors allude to a purpose of case study research and seek to classify them accordingly. Bassey (1999), Merriam (1988), Yin (1994) and Simons (2009) all make reference to the potential for case study research to be evaluative in its purpose. I have added the ‘purpose’ of ‘dissemination’ into my schema because I believe that although simple descriptive narrative accounts that are atheoretical can communicate a series of events, they are unlikely to serve a wider purpose on their own.



Simons (2009) makes reference to formative case studies – I have included this on my schema as ‘inform’; these case studies, I contend, are close to simple narrative accounts but are written to be shared within a specific context, to inform a particular audience about the specifics of a particular phenomenon. I have placed ‘evaluation’ even further towards the research end of the spectrum because of its potential to test theory – i.e. when it is postulated that a particular educational intervention might have some impact. Evaluative case studies are useful for measuring impact and the evaluation questions will emerge from a starting hypothesis. I see theory generation as being at the most extreme end of case study research; indeed I have argued that this is the defining feature of case study *research*.

### **2.3.3: Locating my thesis within my typological schema**

In terms of ‘method’, I contend that my work is ‘single’ in form, ‘intrinsic’ in motivation and is ‘auto-ethnographic’ in its paradigmatic structure. In terms of ‘focus’, I contend that my work is ‘theory seeking’ in its relationship to theory. It has a mixed narrative mode – my reflexive analysis sections are ‘interpretative’, my contention that my case of professional development is a ‘critical case’ makes the case ‘illustrative’ and the three context-cases have both story-telling and explanatory elements. My case also has a mixed purpose: it has a purpose of evaluation – evaluation the impact of the White Paper (DfES, 2003) on my professional development (and the impact of my professional doctoral study) and it has a theory generation purpose; my write-up of the thesis seeks to augment the lived experience of the case (my reality) with the generation of ideas that emerge from a process of reflexive analysis.

Although I would not argue that my schema is a definitive model of case study research typologies, it is nonetheless a model that I have constructed that has helped me to make sense of what case study research is in my context.

Through reflexive analysis of my professional development as manifested through the writing of this chapter – itself a sense-making process of my wider approach to my thesis, I have engaged with literature and developed a model (a theory) of my own. In itself, this exercise is an example of the process of reflexive analysis that has been referred to throughout this chapter.

#### **2.3.4: Chapter summary**

In this chapter I have sought to justify case study research as a legitimate vehicle for the presentation of my doctoral thesis. I have used Flyvbjerg's 2006 paper *'Five Misunderstandings about Case Study Research'* as a framework through which to explore my thinking in relation to the legitimacy and efficacy of case study research in my context. I have offered a view that case studies (as simple narrative accounts) are not the same as a piece of case study research. I have contended that the case study (the narrative) forms the data set and that the process of reflexive analysis upon this data *is* (in my context) the research process as it relates to the overarching case of professional development. I have sought to articulate my views with the work of other authors and this has led to the construction of a typological schema that seeks to place types of case study research (as described by others) into a relational framework that articulates with my own ideas. Finally, I mapped my own work onto the schema. As a model, I find that it fits my thinking and

my thesis quite well but of course it would be interesting to see how well the model would work as a typological framework for others working with case study research in other contexts.

## CHAPTER 3: PROFESSIONAL DEVELOPMENT AS A LEGITIMATE FOCUS FOR DOCTORAL STUDY

### 3.1: Exploring professionalism

Before we consider the nature of professional development (in the context of academic practice in higher education) it is useful to first consider what is meant by 'professionalism'. This is by no means an uncontested concept. Freidson (1994, p. 169) offers the view that "*much of the debate about professionalism is clouded by unstated assumptions and inconsistent and incomplete usages*". Evans (2008) places the above quote at the beginning of her paper '*Professionalism, professionalism and the development of the education professional*'. She borrows (and develops) the term 'professionalism' from Hoyle (1975) and usefully creates some semantic distance between the terms 'professionalism' and 'professionalism'. She ties the former to notions of socio-political structures that define expectations for professional behaviour and capability, going on to build an argument that links 'professionalism' to a "*quality of service*" (Hoyle, 2001: p.146) or "*quality of practice*" (Sockett, 1996: p. 23); and she ties 'professionalism' to the attitudes and values a professional has in respect of their respective practice.

Amongst many 'professions', such as lawyers, doctors, nurses, teachers, the notions of 'quality of service' and 'quality of practice' Evans (2008) links to 'professionalism' are pegged to threshold standards that are regulated. Such regulation is governed by a professional body, such as the General Medical Council or the Health and Care Professions Council who maintain a register of

professionals who can demonstrate that they carry out their roles within the quality parameters laid out (publicly) for the profession. Transgression or lack of maintenance of standards will lead to being struck off or removed temporarily from such a register. Additionally, the titles of those professions ‘Nurse’ or ‘Radiographer’ enjoy legal protection and can only be claimed by people who are registered with the relevant professional body.

Academic practice in higher education carries no such regulatory professional register, but since 2006 the sector has had access to the UK Professional Standards Framework (UKPSF). Comprehensively revised in 2011 (Figure 6), this framework represents the profession’s nearest equivalence to the socio-political construct described by Evans (2008).

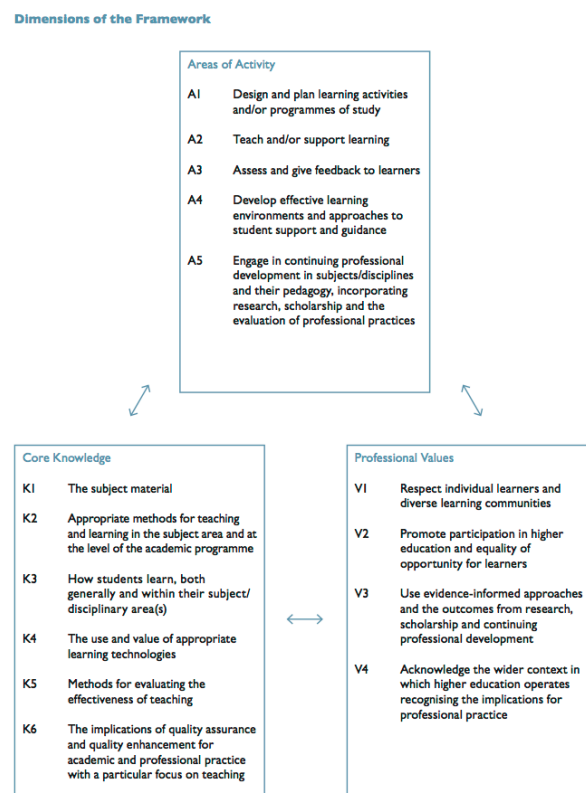


Figure 6: The dimensions of the United Kingdom Professional Standards Framework (Higher Education Academy, 2011)

This thesis, through my inclusion of the three context-cases that form the next three chapters, describes (professional) activity that can be articulated with most of the statements across the three dimensions of the framework, namely: A1, A2, A3, A4, A5, K1, K2, K3, K4, K5, K6, V3 and V4 (A='Area of Activity'; K='Core Knowledge'; V='Professional Values'). My articulation with this framework is expended upon in Appendix 1.

Being able to articulate my developmental activities with all dimensions of the UKPSF is important to my career as an educator in higher education; the framework has three dimensions, comprising:

- Five Areas of Activity
- Six aspects of Core Knowledge
- Four Professional Values

These dimensions relate to four, broadly hierarchical, 'descriptors' - simply known as D1, D2, D3 and D4. Although the UKPSF 'belongs' to the sector, the Higher Education Academy (HEA) is tasked with 'stewardship' of the framework, being responsible for the sector-wide consultation activities that informed the framework and the work that will inform its future iterations. The Higher Education Academy also uses the framework to recognise higher education practitioners who are able to demonstrate professional competence across the three dimensions. Accordingly, the HEA will confer Associate Fellow (of the HEA), Fellow, Senior Fellow and Principal Fellow to those who can demonstrate alignment with the respective descriptors (D1, D2, D3, D4). Fellow of the HEA (or demonstrable alignment with D2) has broadly become the *de facto* qualification to teach in higher education in the UK; indeed,

person specifications for new academic posts at UK universities typically list Fellow status among the essential criteria for appointment. Furthermore, those new to academia are typically required to complete a postgraduate certificate in learning and teaching in higher education (or equivalent) as part of the terms and conditions for employment. Such postgraduate qualifications are normally mapped to D2 of UKPSF and successful completion leads to conferment of Fellowship of the HEA.

This thesis is written for the award of EdD Learning and Learning Contexts, which is aimed “*at those wishing to pursue research that can be applied to their own teaching and learning contexts*” and is “*based on the principle that evidence-based practice can enhance professionalism*” (University of Birmingham); as a consequence of those stated intentions for the EdD programme, the three context-cases included within this thesis represents research activity that has been applied to my academic practice, thus developing my *professionalism* as framed by the UKPSF. Mapping between the academic activities described in this thesis and the UKPSF can be found in Appendix 1.

While my academic development activities described in Chapters Four, Five and Six (the three context-cases) represent a response to the professionalism agenda, my reflexive analysis *upon* the three context-cases has led to the development of my *professionality* through engagement in scholarship of teaching and learning (SoTL). A fuller exploration of SoTL and its relationship to the concept of professionalism is given in section 3.3.

In summary then, my professionalism sits within a socio-political construct – the UKPSF and my professionalism is linked to a process of reflexive analysis that has been supported by scholarly activity – my doctoral study.

### **3.2: Professionality**

As discussed at the beginning of Section 3.1, Evans (2008) drew on Hoyle (1975) to put some semantic distance between the concepts of ‘professionalism’ and ‘professionality’. ‘Professionalism’ has broadly been described above as subscribing to, and working within, the ‘service’ and ‘practice’ parameters that have been negotiated between ‘professionals’, and an associated professional body. ‘Professionality’, Evans (2002) contends, is different from this socio-political construct of ‘professionalism’ and relates to the ideological and attitudinal disposition of the ‘professional’, she defines it as:

*“An ideologically-, attitudinally-, intellectually-, and epistemologically-based stance on the part of an individual, in relation to the practice of the profession to which s/he belongs, and which influences her/his professional practice.”*

(pp. 6-7).

This distinction between these two facets of broader conceptions of professionalism is useful; it allows for clear differentiation between the two conflated facets described above. On one hand, (in my context) professionalism can be seen to be the adherence to the socio-politically constructed expectations of my profession as manifested by the UKPSF; and on the other hand it speaks to intrinsically motivated engagement with the scholarship of teaching and learning, that is - an interest in learning and



teaching as a subject in its own right; engagement in informed and innovative academic practices and participation in communities of practice that lead to an enhanced understanding of learning in higher education.

However, Evans (2008) is careful to remind us that these two facets of professionalism and professionality are not divorced, they are intimately related and mutually reinforcing. As I described in section 3.1 the parameters that define professionalism are socio-politically constructed, but one of the parties that contributes to this construction are the members of the profession themselves; thus the values held by members of a profession, aspects of their collective professionality, become manifest within the socio-political constructs of the profession they help to build (such as codes of conduct or professional frameworks). Evans (2008) explains this link between professionalism and professionality in the following terms:

*“I perceive professionalism to be what may perhaps best be described as, in one sense, the ‘plural’ of individuals’ professionality orientation: the amalgam of multiple ‘professionalities’ – professionality writ large.”*

(p. 9)

I take the view that this conception, when considered in terms of socio-political construction, is rather under-politicised. I believe a more accurate portrayal of professionalism, as it is experienced by professionals today, lies towards or even beyond what Evans (*ibid.*) describes as ‘old-school’ conceptions of professionalism such as that offered by Freidson (1994):

*"I use the word 'profession' to refer to an occupation that controls its own work, organized by a special set of institutions sustained in part by a particular ideology of expertise and service. I use the word 'professionalism' to refer to that ideology and special set of institutions."*  
(p. 10)

Here, it is useful to reiterate that features of a profession include professionalism and professionalization and that this latter facet relates to notions of "quality of service" (Hoyle, 2001: p.146) and "quality of practice" (Sokoll, 1996: p. 23). Such 'service' and 'practice' are not enacted within the boundaries of a profession but are externally-facing, enacted within the wider world. Furthermore, the 'wider world' represents a dynamic context for a profession and this exerts an implicit pressure onto the profession and its community of professionals forcing it (and them) to adapt to a changing context to stay relevant and responsive to the needs of wider society (and so in demand). Freidson (1994) acknowledges this 'external' pressure stating *"professionals have become subject to forms of social control that erode their very status as professionals"* (p.130). By this, I take Freidson to mean that the self-organising power of professionals is eroded.

In many ways without the related concept of professionalism, professionalization (as conceived above) would be narrowly confined and professional development would merely be about the acquisition and maintenance of baseline competences as they relate to public expectations of standards of performance (quality of service and practice). It is for this reason that I find the disaggregation of a broader concept of professionalism into (a more specific conception of) professionalism and professionalization to be so very useful.

So, for a professional, although development of their professionalism can be against a framework such as UKPSF, such development is likely to be achieved *through* developing one's professionalism – such as, in my professional context, through scholarly endeavour in the activities of the SoTL community.

### **3.3: Scholarship of teaching and learning**

I have contended above that engagement by academics in 'scholarship of teaching and teaching' is related to the concept of professionalism. Evans (2008) discusses a link between professionalism and professionalism through the plurality of *professionalities* – that is to say professionalism is an inevitable output of the existence of a community of professionals. I agree with this, but with the caveat that a community of professionals do not have exclusive influence in how the constructs of professionalism are framed because of the influence of the wider world on expectations of quality of service and quality of practice.

If we accept a notion of professionalism as a plurality of professionalities, how do individual professionalities relate to one another? How are professional value sets, ideas, models and theories of a community of professionals shared? In my profession, higher education academia, Shulman (2000) makes reference to two communities – 'discipline-based' and 'professional educator' with the latter being a community of academic practice. Although this latter community is theoretically open to all those who teach in higher education, it is not the case that every academic chooses to be active within

this community; historical emphasis on disciplinary research as the primary academic activity, particularly in the pre-1992 universities, still exists today and a largely mono-focal approach to carrying out disciplinary research is tolerated or even rewarded.

However many academics *do* choose to engage in what Boyer (1990) described as being a “*broader, more capacious*” (p. 16) conception of academic scholarship – one that comprises a scholarship of discovery, of integration, of application, and of teaching. Although this conception of scholarship of academic practice is broadly accepted by later authors (Haigh, 2010; Trigwell and Shale, 2004), some authors – for example Kreber (2002) write of a need for clearer distinction between *scholarly teaching* (what might today be referred to as research-informed teaching) and the *scholarship of teaching* – research practices that seek to shed light upon what effective teaching is and how it is constructed. Kreber (*ibid.*), offers some examples of responses (as an output of a Delphi process) that speak to this difference:

*“Excellent teachers need not be scholars of teaching”* (p. 159)

and

*“Scholarly teaching is intended to impact on the activity of teaching.*

*The scholarship of teaching is intended to result in a formal peer reviewed communication in appropriate media or venues.”* (p. 159)

I find this distinction a little sharp and somewhat false. Yes, excellent teachers need not be scholars of teaching - but they don't teach in a vacuum and will draw, even just through conversation with colleagues, from the professional

community of academic practice (the plurality of the professionalities of themselves and colleagues) to some extent. This certainly does not necessitate engagement in what we might call the pedagogic research 'end' of the scholarship spectrum, but it does not mean they do not indirectly benefit from such research or what Kreber (*ibid.*) is referring to as scholarship of teaching.

Conversely, those who engage in the scholarship of teaching (those who research what effective teaching is and how it is constructed) are not excluded from engaging in 'scholarly teaching' or from participating in the community of academic practice in a more indirect manner (in addition to more formal participation modes).

### **3.4: Modelling scholarship**

I propose that scholarly teaching and the scholarship of teaching are not mutually exclusive positions but are the poles of a spectrum of engagement with the professional community of academic practice. The 'scholarly teaching' pole is characterised by engagement in innovative teaching practice (with the intention of enhancing the student learning experience) and informal engagement in the professional community of academic practice – through community networking and informal dissemination of their practices. The 'scholarship of teaching' pole is characterised by formal engagement in the professional community of academic practice – through pedagogic research and formal dissemination of their findings through publication.

As I reflect on the concept of case study research I offered in Chapter 2, I find that it is easily accommodated within a (spectrum) model of scholarly teaching / scholarship, sitting squarely at the scholarship of teaching 'end' of the spectrum (Figure 7).

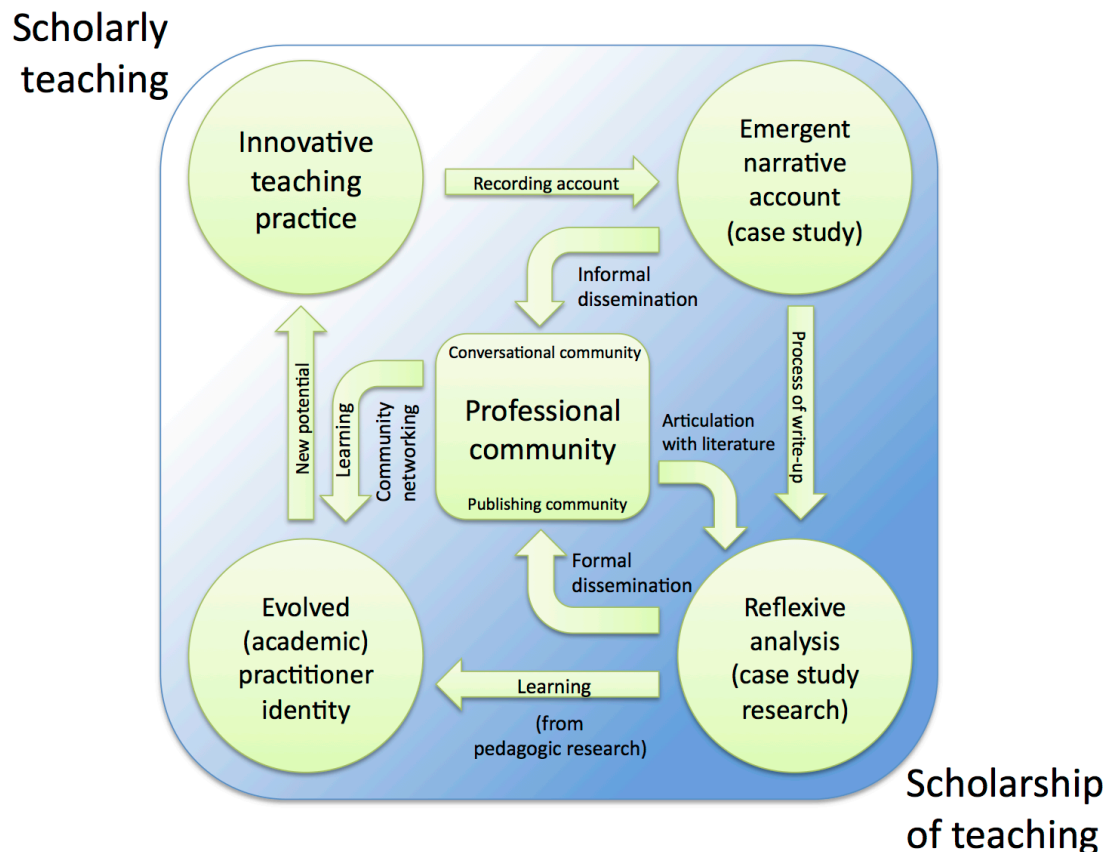


Figure 7: A model to demonstrate a spectrum of mode of (practitioner) engagement with a professional community of practice

A key implication of the model offered as Figure 7, is that the professional community (of academic practice) is itself made up of sub-communities: the 'conversational community' and the 'publishing community'. Of course, participation in one sub-community is not mutually exclusive of participation in the other, nor does it necessitate participation in the other. Thus, community members might never publish (pedagogic research) or draw ideas (directly)

from such publications; and, other community members may never teach or network with (teaching) practitioners but they are still members of an overarching community of academic practice.

Functionality of the wider community, in terms of supporting the development of individual professionalism and thus (the academic practice facet of collective) professionalism, is dependent on at least some of the members engaging themselves in the full spectrum of community engagement – these Full Engagement Scholars act rather like academic community ‘bees’ cross-pollinating both ends and allowing the whole community to bloom. Building on the argument above, I have introduced the concept of three types of community member: ‘Excellent Teachers’ (scholarly teachers according to Kreber, 2002), ‘Pedagogic Researchers’ (those who research learning) and ‘Full Engagement Scholars’ (those who do both). My model needs to accommodate all three groups of members.

### **3.4.1: Types of member of an academic practice professional community**

#### **3.4.1.1: Excellent Teachers:**

These members teach, and inform their practice through reflecting on their own teaching experience and through informal engagement with the conversational sub-community of academic practice. Their zone of engagement within the full spectrum of community activity is shown below as Figure 8.

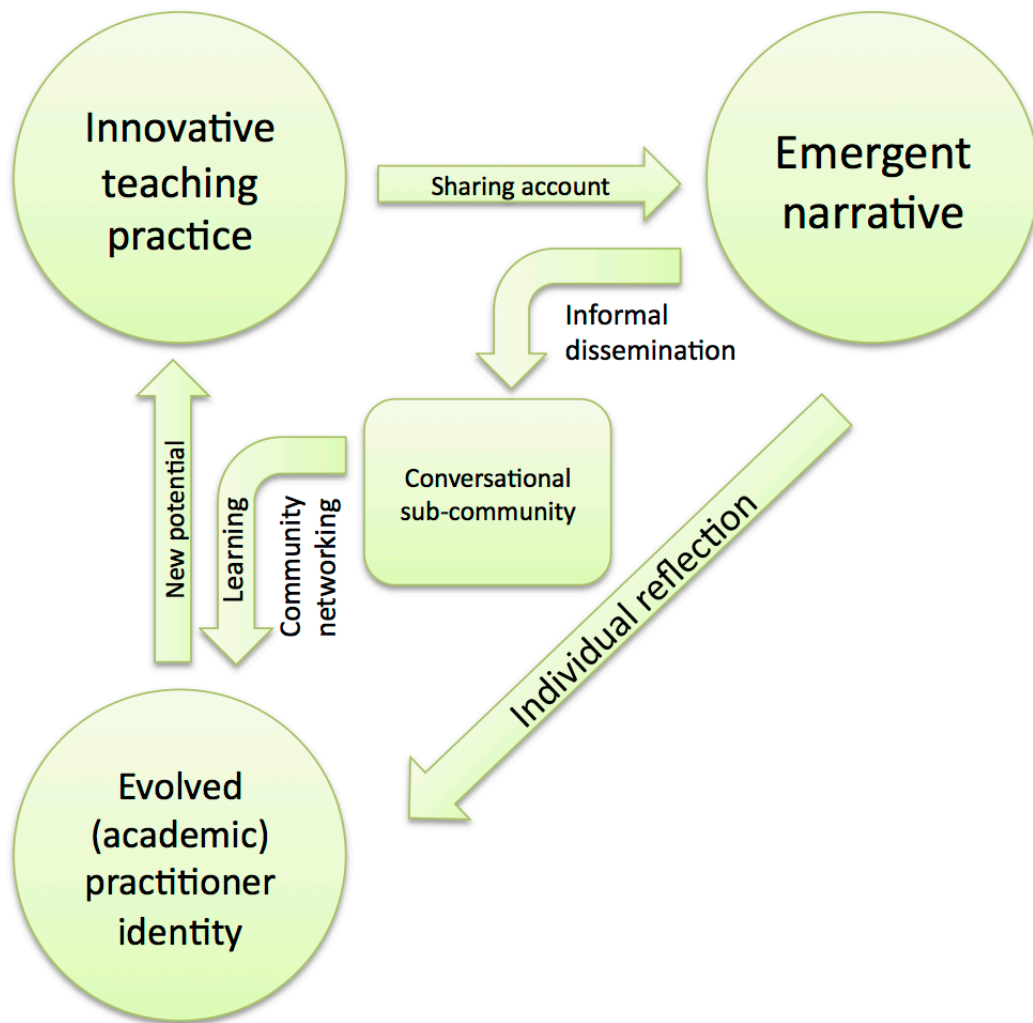


Figure 8: Community engagement of Excellent Teachers

### 3.4.1.2: Pedagogic Researchers

These members research and inform their practice through reflecting on their research experience, analysing their findings and articulating their thinking with the published and conversational outputs of the (full) community of academic practice. Their zone of engagement within the full spectrum of community activity is shown below as Figure 9.



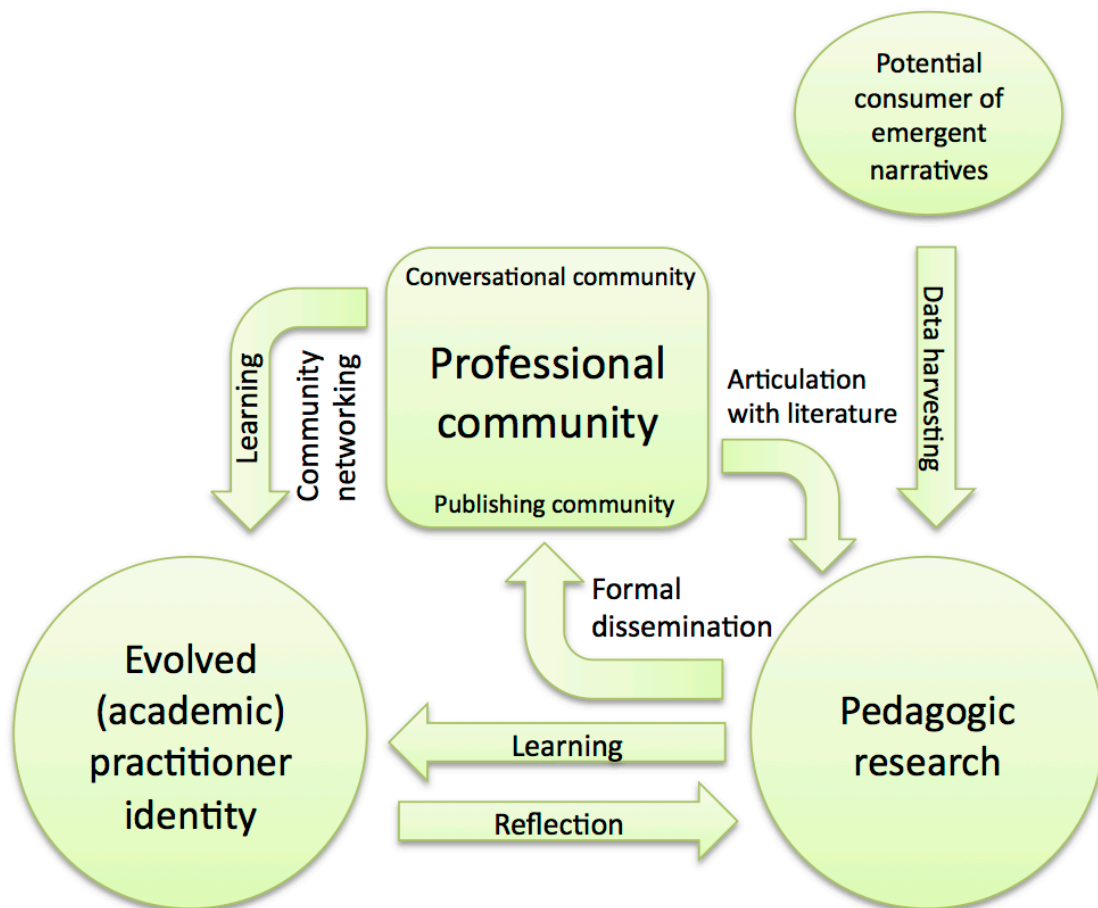


Figure 9: Community engagement of Pedagogic Researchers

### 3.4.1.3: Full Engagement Scholars

Although the activities of the Excellent Teacher and Pedagogic Researcher members still lead to outputs of learning and evolution of identity through reflection on teaching experiences *or* research experiences; it is only the 'Full Engagement Scholars' who populate the full spectrum of activity described in the model (Figure 7). I believe this has important ramifications for the efficacy of practices that have the potential to lead to academic professional development (learning).

The context in which I am discussing learning is self-evidently 'experiential' in nature whereby personal and professional development emerges from a process of reflecting and learning from experience. A striking feature of my full model (Figure 7) is the degree to which it aligns with Kolb's (1984) experiential learning cycle (Figure 10). Not only does my model offer a useful extension to Kolb's cycle of experiential learning by modelling how individual learning is dependent on participation in a professional community, it demonstrates that the 'partial' engagement undertaken by both the Excellent Teacher members and the Pedagogic Researcher members restrict their capacity to learn from experience, since the Excellent Teachers limit their opportunities for abstract conceptualisation and the Pedagogic Researchers limit their opportunities for active experimentation that leads to them acquiring concrete experience.

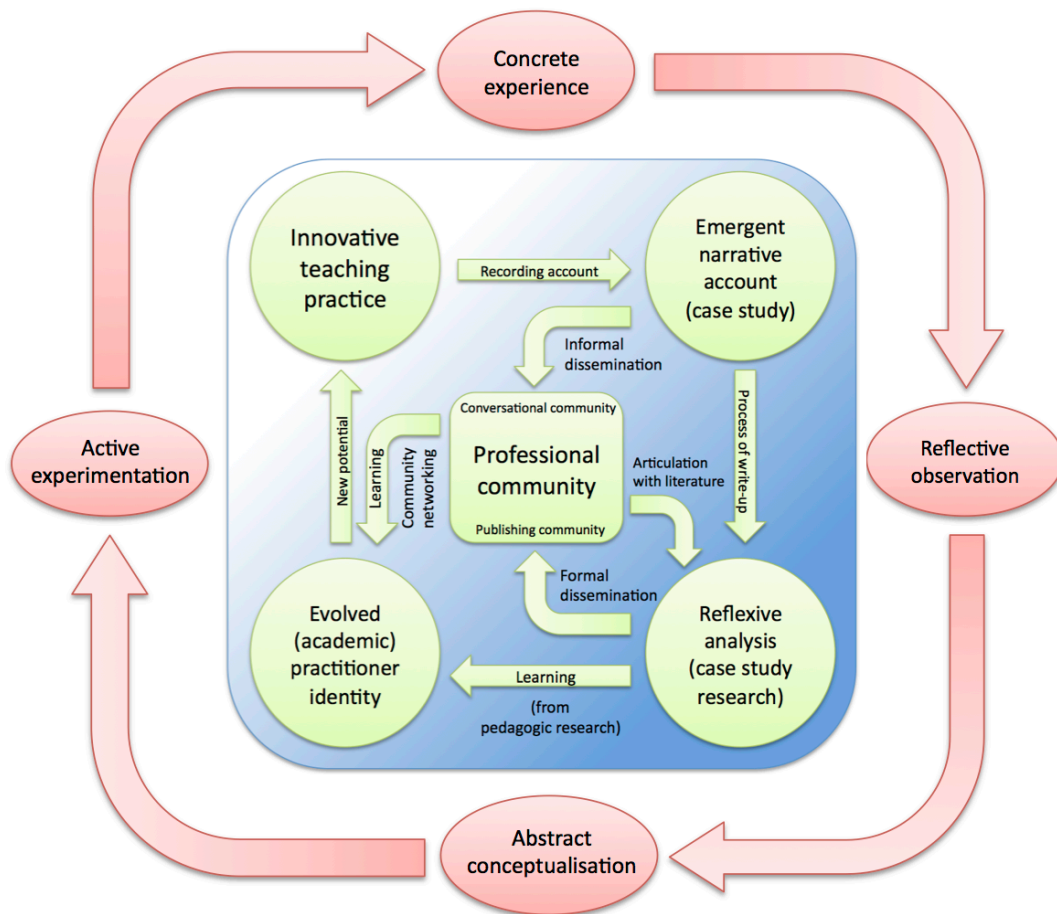


Figure 10: Mapping of my model of professional community engagement with the Kolb (1984) cycle of experiential learning (using case study research as an example).

Only the 'Full Engagement Scholars' have the potential to draw full learning potential from engagement with community activities because they research their own practice, articulate their experience with the formal and informal outputs of the full professional community and as teachers they have the opportunity to practice what they have discovered and to learn from that experience.

### 3.4.2: Accommodating ‘the wider world’

In the Section 3.2 I discussed how professionals (especially those in the regulated professions) do not have exclusive influence over how professionalism is framed in any given context. This does not mean that the ‘wider world’ is part of the professional community, but it will mean that it is able to exert an influence on community activity (and professional discourse) by inputting parameters for practice into the community. This is represented diagrammatically as Figure 11.

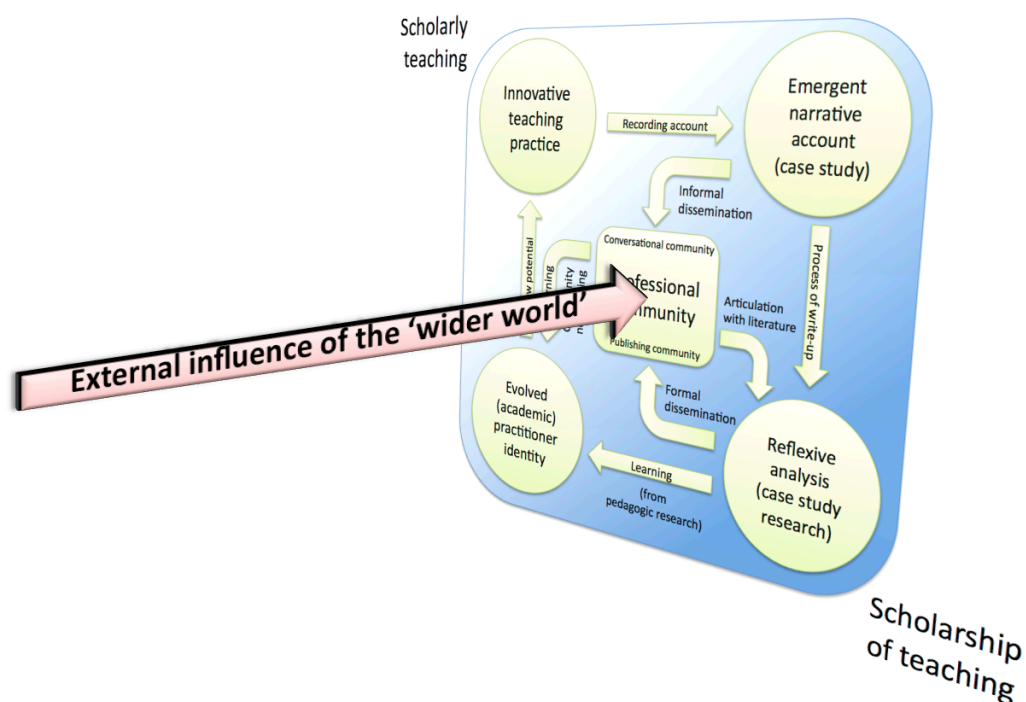


Figure 11: Representation of how the ‘wider world’ can influence community activities without direct participation in the community.

In my professional community (academic practice) context, examples of such external influence would include the introduction of student fees, policies

relating to fair access or indeed the White Paper of 2003 (*The future of higher education*).

### **3.4.3: All community members are not equal**

The central (rectangular) component of the model (Figure 7) remains a little simplistic, academic practitioners are human beings with egos, status and career trajectories to maintain. I contend that communities of practice, such as the academic community of practice as modelled in Figure 7 is significantly more hierarchical in nature and is governed by participation 'rules' that relate to appropriation of specialised language, reputation and publication track record. This means that those practitioners who remain exclusively within the informal 'conversational sub-community' will never really be influential within the wider community and may in fact be structurally prohibited from making the transition to the 'publishing sub-community' without first up-skilling themselves in relation to full appropriation of specialised language. My notion of a hierarchy of membership of a community of practice emerged through my exposure to the community of the International Society of the Learning Sciences and is expanded upon in the adjunct narrative included as Section 5.7 (of Chapter 5).

## **3.5: Learning from community engagement**

Although my model (Figures 7-11) offers something new in terms of rationalising different modes of participation in professional communities (of academic practice), the concept of learning from community engagement is certainly not new. At its most overarching level, all learning is a result of

engagement with the wide community of society and the physical and socio-cultural environments that we share. The environment part is important as the physical world represents a truly shared experience upon which we overlay socially constructed schema in the form of language. The more shared the aspect of the real world, the more general the language used to tag and describe it; and the more specific and 'niche' a given aspect of the real world, the more specific and specialised the language. Consequently, all learning emerges from social engagement within a community. Wenger (2000) offers a very straightforward introduction to this concept:

*"You probably know that the earth is round and that it is orbit around the sun. But how do you know this? What does it take? Obviously, it takes a brain in a living body, but it also takes a very complex social, cultural, and historical system, which has accumulated learning over time. People have been studying the skies for centuries to understand our place in the universe. More recently, scientific communities have developed a whole vocabulary, observation methods, concepts, and models, which have been adopted by other communities and have become part of popular thinking in various ways. You have your own relationships to all these communities, and these relationships are what enable you to 'know' about the earth's position in the universe. In this sense, knowing is an act of participation in complex 'social learning systems'." (p. 225)*

Not all authors believe that learning from engagement in a community is as straightforward as this, Reed *et al.* (2010) contend that in addition to the individual learner (community member) learning something, as characterised by either surface markers such as information recall or deeper markers such as a changed world view, there must some facet of learning that goes beyond the individual to *“become situated within the wider social units or communities of practice within society”*. That is to say that social learning is transactional – once a person has learnt something, they are changed, and because they are changed and reside within a community, the community has changed too. Although net knowledge may not have increased, the community’s net ability to make use of this knowledge has increased, as has the likelihood that this knowledge will intersect with other knowing to form new knowledge through a process of abstract conceptualisation or, as conceived in the models I put forwards in this thesis, reflexive analysis.

### **3.6: From scholarship of teaching to the scholarship of teaching and learning**

The model of scholarly teaching and scholarship of teaching I present as Figures 7-11 emerged to challenge Kreber’s (2002) concept of a clear separation of those two facets of academic professional practice. As I described, the ‘Full Engagement Scholars’, in their modelled activity, span both facets – they are engaged in innovative teaching practices and they engage themselves in pedagogic research. Their professionalism sees them working towards the enhancement of student learning (Shulman, 1999; Huber and Hutchings, 2005; McKinney, 2006) – which in my model, is manifested

through engagement in the full spectrum of activities that are bounded by the parameters of the professional community. This importance of 'enhancing the student learning experience' was duly noted by Shulman (1999) when referring to the formation of the Carnegie Academy for Scholarship of Teaching *and Learning* (CASTL) [*italics my emphasis*], declaring that the intention was "*to move the 'scholarship of teaching' from rhetoric to action*" (p.16). Through the establishment of CASTL, the term 'scholarship of teaching and learning' has become the dominant term to describe the academic practices described in this chapter.

### **3.7: My engagement with a professional doctorate**

As I have contended within this and the first chapter, this thesis, in and of itself, is an example of scholarship of teaching and learning that uses three narrative accounts from my practice as data upon which to undertake a process of reflexive analysis leading to the generation of new knowledge in the form of new models. The thesis is itself a product of engagement in a professional doctorate, writing it has provided an opportunity (and incentive) to engage in the process of write-up and consequent reflexive analysis. Without my engagement with my doctoral programme, my case studies would have remained as simple narrative accounts unarticulated with literature and without being subject to structured, theory generating, reflexive analyses.

As stated in Chapter 1, I purposefully chose to engage in EdD study (a professional doctorate), rather than PhD study, as I wanted to ensure my research was applied and that the learning I would undertake would be as applicable as possible to my professional practice. As previously stated the



EdD Learning and Learning Contexts programme on which I am enrolled is aimed *“at those wishing to pursue research that can be applied to their own teaching and learning contexts”* and is *“based on the principle that evidence-based practice can enhance professionalism”* (University of Birmingham).

The undertaking of research that emerges from (and includes aspects of) the lived experience as described through the three context-cases is well-aligned, according to my model (Figures 7-11), with research that is applied to my own teaching and learning context; it is evidenced-based; it has enhanced my professionalism (as defined through the UKPSF); and it has enhanced my professionalism through the opportunities I have had to transform my identity as an academic practitioner and redefine my participation in the professional community of academic practice as a ‘Full Engagement Scholar’.

## **PREFACE TO CHAPTERS 4, 5 AND 6**

In the first part of this thesis I have laid out the intentions of my doctoral study to offer a single case study of academic development as it has emerged from opportunities offered by the investment made into the UK higher education sector following the White Paper: *The future of higher education* (2003). I have introduced the thesis as a document that represents my learning and offers an original contribution to knowledge. I gave particular attention to offering comment as to the slightly eclectic structure, emphasising my need to represent the learning that has emerged from the process of undertaking structured research as well as representing the products of this research.

In a conventional sense, the next three chapters represent those research products – each chapter is a context-case of academic practice characterised by some research questions, methods, findings and analysis. Each of these chapters describe research activity that has only come about because of the opportunities afforded to me because of the sector investment made following the White Paper (2003).

Although these context-cases are mini-case studies in their own right, I have contended that, as they relate to the overall presentation of my research thesis, they also act as indicative examples of a commitment to personal academic development that demonstrate the sorts of activity I have been undertaking over the last ten years. This activity provides a developmental focus for reflexive analysis. As a consequence of lived experience of the context-cases I have had opportunities for adjunct development – learning that has emerged as a consequence of articulating my practice with my

doctoral study and trying to make sense of my experiences through the development of models and theories. Consequently, an adjunct narrative accompanies each of the chapters. These narratives represent thinking that emerged at the time of reflecting on the related context-case and represents the journey from case-study to case-study research as modelled in Chapter 2. Two of these 'adjunct narratives' formed the basis of assignment submission as part of the EdD structure; namely the models of hierarchical communities of practice (adjunct narrative of Chapter 4); and section on the social and cognitive affordances of physical and virtual spaces (adjunct narrative of Chapter 5).

Through my choice of undertaking a professional doctorate (itself funded through monies made available as a consequence of the White Paper (DfES, 2003)), I have had the opportunity to write this thesis. According to my model of case-study research proposed in Chapter 2, this – in and of itself – is the primary vehicle for undertaking the reflexive analysis that characterises and enables case-study research to cascade from case study narratives.

Accordingly, that write-up process has itself yielded its own research products – namely models of: case-study research (Chapter 2); scholarship of teaching and learning and professionalism (Chapter 3).

In Chapter 3 I related my case-study research approach to notions of professionalism and scholarship of teaching (and learning) and argued that I am an example of a 'Full Engagement Scholar', someone who researches academic practice, researches *their* academic practice and applies their findings to their own teaching practice. Chapters 4, 5 and 6 represent examples of me doing just that.

Finally for this preface, it's important to state that Chapters 4, 5 and 6 are just three selected linked examples of my practice over the sample period of 10 years. They are certainly not the totality of my academic activity nor representative of the diversity of academic activity I have undertaken over that period. Rather, they are accounts linked by my interest in, and use of, video as an enabling technology for academic innovation. They offer useful illustrative examples of the impact of the White paper of 2003 because the financial investment made by me, and for me, in terms of the purchase of equipment and the 'buy-out' of professional time is higher than any other aspect of my professional practice that I might have reported on.

## **CHAPTER 4: CONTEXT-CASE 1: VIDEO AS A TOOL FOR TEACHING**

### **4.1: Summary of context**

This chapter offers the narrative relating to context-case 1: video as a tool for teaching. It describes academic practice situated within the 2003-2005 timeframe (see Table 1) when I was carrying out the role of teacher of diagnostic radiography. In terms of the sector context, the 2003 White Paper: *The future of higher education* (DfES) had recently been published and the status of learning and teaching within institutions was becoming increasingly prominent. It offers a case of video being used as a tool for teaching – specifically the use of ‘video lectures’ to replace conventional face-to-face lectures so as to free up classroom contact time for scenario-based / case-based teaching.

Consequently, this chapter is situated within the academic context of teaching students on the BSc Diagnostic Radiography programme in a UK University; within a module entitled Diagnostic Imaging of Trauma and Disease.

Radiographers in clinical practice often work in an extended-role capacity to issue formal ‘reports’ on plain film (x-ray) images (and other imaging modalities). Although this extended role is supported by additional post-graduate education, undergraduate radiographers are expected to participate in professional discourse pertaining to radiological findings arising from trauma and disease. This clinical context underpins the rationale for the module that gives the focus for this chapter.

It is important that I facilitate at an early stage in this chapter an understanding in the reader that the Diagnostic Radiography programme referred to herein is not ‘just’ a degree; it is also a qualifying award for entrance onto a professional register for subsequent clinical practice. As such, the programme carries expectations of the professional body and other external stakeholders, such as partner training hospitals, that certain subject areas and skills are taught to students. Furthermore, they have to be *seen to be taught* and not just be part of the curriculum. It would, for example, be deemed inadequate to send a student radiographer on a clinical placement without having explicitly taught them about radiation protection. ‘Merely’ including opportunities for acquiring such knowledge through self-study would not be deemed as adequate.

Outside of these stakeholder groups, within the more pedagogically aware communities that actually deliver healthcare education, there is of course a tacit understanding of the value of non-didactic teaching methods – especially those such as case-based teaching that support the development of problem-solving skills. This chapter then, describes the process of introducing a form of case-based teaching into a professional healthcare programme while developing, in parallel, a strategy (using ‘video lectures’) for preserving didactic delivery of content that would be seen by some stakeholders as an essential (taught) pre-requisite for clinical practice.

My strategy for preserving didactic delivery while introducing case-based teaching may be of interest to any academic who would like to introduce case-based teaching into a programme of study but who might have difficulty in creating the curriculum time and space necessary to accommodate it.

[The following sections of this chapter, 4.2 and 4.3 and sections of Chapter 5, 5.1, 5.2, parts of 5.3 and 5.4 are taken, with some small alterations, from a forthcoming book chapter: Bartholomew (2014). I am the sole author of this forthcoming book chapter]

## **4.2: The ‘problem space’ and case-based teaching ‘solution’**

In 2003, I began to change the way I taught second-year students on the BSc Diagnostic Radiography programme at Birmingham City University. During my first year of coordinating and teaching the module (Diagnostic Imaging of Trauma and Disease), I became dissatisfied with the traditional didactic model that was still dominant across the programme and I resolved to try to redesign this part of our students’ learning experience so as to deliver the following enhancements:

- The creation of curriculum space (and time) for the introduction of problem-solving scenario-based activities (case-based teaching);
- Further alignment of the ‘classroom’ experience with the skills required for clinical practice;
- The encouragement of a greater degree of independent learning.

Because of the professional nature of the programme and the expectations of various stakeholders, the module required that subject domain content be ‘taught’ to the student group. This had previously been done through reliance on traditional didactic lectures, which left little time for the deployment of activities to support the development of problem-solving skills, such as those afforded through case-based teaching methods. I have discussed how

creating curriculum space within a professionally orientated programme is not without difficulty and thus a strategy was needed to continue to deliver and perhaps more importantly, be seen to deliver, specific domain information while liberating time and space to introduce case-based teaching methods.

I decided to use a video-based resource approach to liberate the classroom from an information transmission model by shifting this activity into scheduled student self-study time. This approach allowed me to continue to demonstrate to stakeholders that key concepts were 'taught' while freeing up 'classroom time' for the deployment of case-based teaching methods. This shift was undertaken after full negotiation with the initial target student cohort.

My initial work in redesigning curriculum delivery took place in the 2003/2004 academic year and, due to the relatively low uptake of broadband Internet at the time, this innovation was deployed by providing a CD-ROM for each student containing a set of interactive multimedia presentations developed with the *Microsoft Producer* software package. These presentations comprised an image-rich *PowerPoint* presentation, associated web links and a small video window that displayed lecturer video narration. An illustrative screen-capture of the layout of the interface is shown as Figure 12.



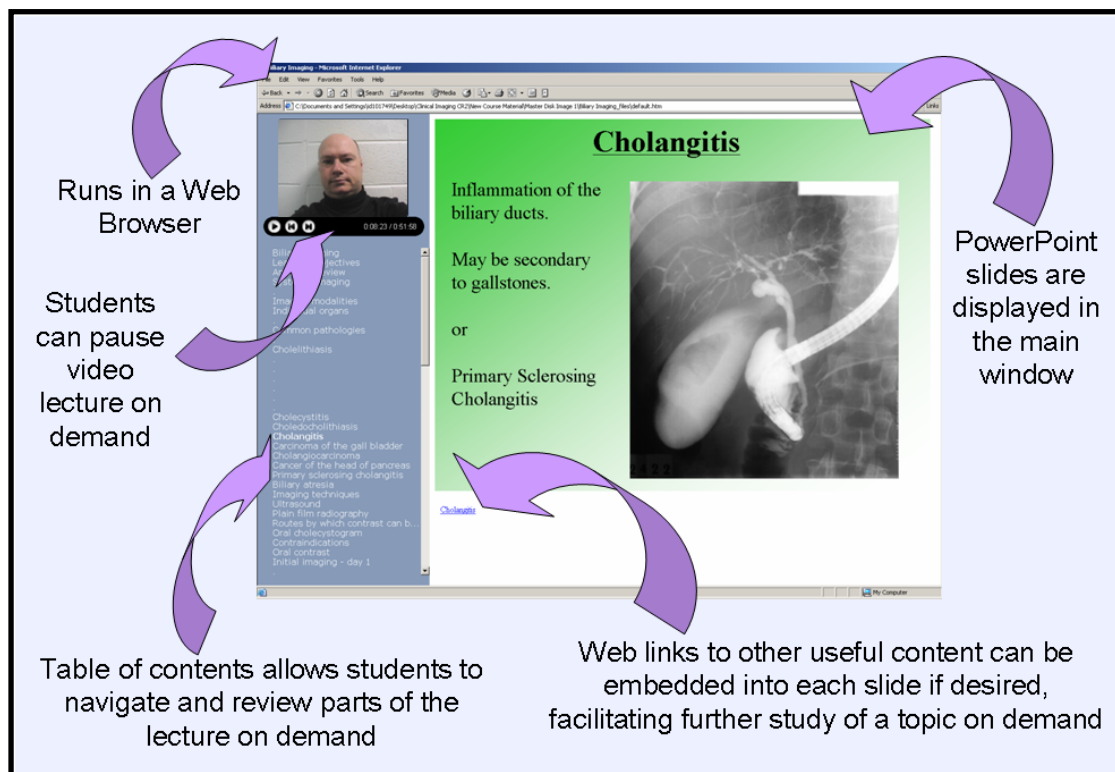


Figure 12: Microsoft Producer interface (an actual example from my early practice)

The feature set of this software interface was particularly suitable for diagnostic radiography due to its visual nature through its intensive use of radiological images; there is always plenty of visually stimulating material, with few slides that offer only bulleted text. Within the presentation interface, areas of interest are highlighted in real time (via animation) in synchronisation with the video-narration. The student can control the flow of the 'video lecture' by pausing, advancing and reviewing the material at will.

The testing of the efficacy of this technology as a replacement for didactic sessions was essential as a prerequisite to deploying a case-based approach into the curriculum because firstly, as noted above, perceptions of deficits in taught content were unlikely to be regarded as satisfactory by clinical partners (hospitals) that take students on placement; and secondly, the follow-on case-

based scenarios built upon underpinning knowledge acquired through engagement with the (video) lecture material, so learning deficits at this stage in the pedagogic design would result in suboptimal student performance in the subsequent case-based scenarios. By way of establishing an evidence-based rationale for the introduction of the technology into this context, two pilot studies were conducted to see whether the video lectures were effective. These are discussed in the next section.

### **4.3: Research questions**

A number of research questions have emerged over my years of deploying case-based teaching into this programme; these research questions are briefly introduced below and expanded on in the remainder of this chapter and Chapter 5.

- Question 1: Do video lectures effectively communicate information to students and facilitate their learning?
- Question 2: Are video lectures as effective as face-to-face lectures in communicating information to students and facilitating their learning?
- Question 3: How well are case-based learning opportunities received by students?
- Question 4: Are case-based units of study effective in supporting learning within the reported context?
- Question 5: Do the cases, when studied by triads of students, lead to quantifiable peer collaboration? (See Chapter 5).

- Question 6: Does collaborative study of cases confer a learning advantage over individual (lone) study of the same cases? (See Chapter 5).

#### **4.3.1: Question 1**

##### **Do video lectures effectively communicate information to students and facilitate their learning?**

As a (first) pilot study, I sought to find out whether video lectures could convey information effectively to students and whether they could learn from the information conveyed. This work demonstrated that the technology did indeed support such learning.

I built a resource using the *Microsoft Producer* software and piloted it with a group of eight students (with some elective material, outside of the core curriculum). I utilised a simple pre-intervention/post-intervention test where the intervention was exposure to the video lecture resource and the test was a short-answer written exam. Questions on the exam included both 'surface learning' questions and 'deep learning' questions. The 'surface learning' questions tested declarative knowledge and only asked the students to 'regurgitate' information that had been included on the resource. The 'deep learning' questions could not be answered purely by memorising facts, rather the student needed to understand concepts that were introduced and then apply this understanding to the question posed. The results of this work are given below as Table 2:

Table 2: Pre-intervention and post-intervention score

	Pre-intervention 'surface' score (%)	Post-intervention 'surface' score (%)	Pre-intervention 'deep' score (%)	Post-intervention 'deep' score (%)
Student 1	58	100	30	40
Student 2	28	94	0	40
Student 3	50	94	60	90
Student 4	82	100	50	100
Student 5	50	82	30	50
Student 6	58	82	100	100
Student 7	28	58	40	60
Student 8	62	58	40	40
<b>Mean</b>	<b>52</b>	<b>84</b>	<b>44</b>	<b>65</b>

This data was persuasive, but only demonstrated that video lectures were effective in absolute terms (without reference to the benchmark of the extant teaching method); to justify replacing face-to-face lectures, the technology needed to be shown to be effective in comparison to face-to-face lectures, demonstrating that nothing would be 'lost' through a move to the technology-based approach to delivery of information.

#### 4.3.2: Question 2

**Are video lectures as effective as face-to-face lectures in communicating information to students and facilitating their learning?**

Through a second pilot study, I compared face-to-face lectures with video lectures since I needed to find out how the technology performed relative to conventional lecture methods. Once again, I chose to offer an elective workshop outside of the core curriculum to students, so as to not interfere with their normal pattern of study. Sixty-five students attended this workshop (a

lecture and a problem-based exercise) in person and just five students elected to have the resources (a video-lecture and follow-up problem-based exercise) on a CD-ROM-based resource. The face-to-face and the video-lecture resources offered the same materials – a lecture on how to identify fractures in a variety of anatomical areas and a set of forty radiological images with which to practise the identification of fractures. Summary data are presented as Table 3:

*Table 3: Relative performance of face-to-face and video-lecture students*

Mode of Delivery	Rounded average of correct diagnosis
Face-to-face students (n=65)	70%
Video lecture student (n=5)	75%

This work demonstrated that video lectures were at least as effective as face-to-face lectures. This data, combined with the data from the first pilot, convinced me that little would be lost if I migrated all of my lecture provision to a video lecture format, and that I would be able to effectively liberate the classroom time for more interactive case-based activities that were aligned better with the professional learning needs of the students.

Of course, 70% and 75% performance in relation to diagnosis is not sufficient for clinical practice; at the same university the 'pass mark' for the post-graduate programme that qualifies radiographers to undertake diagnostic reporting is set at 95%. Here though, the data refer to undergraduate student performance in relation to activities that will prepare them for engagement in professional discourse, not the undertaking of formal diagnostic reporting.

#### **4.3.2.1: Introducing case-based learning into the programme**

Once I had developed a demonstrably effective process for students to acquire information in their own study time (via video-lectures), I was able to dedicate the classroom contact time so liberated to knowledge construction activities. Each classroom session followed on from a specific video-lecture and consisted of a series of activities that allowed the students to apply the information they had acquired to clinical scenario-based cases. This allowed for explicit linkage of theory to practice and created an opportunity for students to enhance their learning through problem solving, thus improving their opportunity to meet the stated learning outcomes of the module. This use of scenarios as cases aligns well with definitions of case-based teaching. Yadav *et al.* (2007) refer to learning opportunities where students draw upon authentic resources to solve problems within their disciplinary context, and Bennett *et al.* (2002) refer to real or hypothetical problem situations in the context of novices taking on the role of experts.

Although somewhat innovative in 2003, at the time of thesis presentation the teaching method described above is in fairly common use and is often referred to as 'the flipped classroom' or 'flip teaching'. Though truth be told, even in 2003, this wasn't completely novel; in an early description of the teaching method, Maier (1998) suggested just such an approach when discussing the advantages of using video to facilitate learning:

*“Videoing your lecture...replaces you physically, allowing you to use “the lecture hour” in an alternative way with students, for example extra seminars for small groups” (p.48).*

In my context, once the information transfer elements of the module had effectively been shifted into the students’ self-study time, the ‘classroom contact’ time was re-purposed to facilitate case-based learning, presenting the students with representations of clinical situations as short problems to solve in groups.

Since adopting these approaches in 2003 I have subsequently used various technologies to shift the didactic content into the students’ study time – in latter years, this was achieved via the Internet rather than via the CD-ROM-based approach that characterised my early practice. As my practice has developed, I have been able to add some additional technological richness into the follow-on classroom sessions, moving from the use of paper-based resources and a data projector (for the display of images) to the use of multiple laptops connected to the institution’s virtual learning environment (*Moodle*) – where the cases could be hosted in a coherent, multimedia environment.

As part of my developing practice, students were invited, as part of the scheduled programme, to a co-located computer-supported collaborative learning workshop where they would share a laptop and a table with two or three peers. They would together work through *Moodle* within a virtual space containing a number of scenarios relating to diagnostic imaging and pathology of the shoulder girdle. There were questions to which the students were

required to negotiate an answer with their peers and this was typed into *Moodle* for either immediate automated grading (via the 'Quiz' function) or become subject to tutor grading after the event. This laptop-based, VLE-articulated evolution of my case-based teaching was fairly resource intensive, I therefore considered it prudent to explore its effectiveness. Part of that exploration concerned the students' experiences of the method and this formed my third research question "How well are cased-based learning opportunities received by students?"

### **4.3.3: Question 3**

#### **How well are cased-based learning opportunities received by students?**

From those who attended, sixty-four students completed evaluation forms leading to the data offered as Table 4. A written evaluation questionnaire was chosen because of its suitability for rapid deployment to large numbers of students – other methods such as group interviews are not nearly as scalable and, if not specifically structured to avoid it, are vulnerable to being 'taken over' by dominant voices within the group.

Although sixty-four students filled out the questionnaire, some students did not answer all questions, leading to some minor anomalies in the figures reported.



Table 4: Reactions of students to the introduction of scenario-based learning

(n=64)	Response	Yes	Perhaps	No
Were there learning benefits in studying in this way?		61	2	1
Would you elect to augment your normal sessions with this sort of learning again?		50	3	9
Would you have studied the resources if only made available to you as an individual?		34	13	17
	Response	Yes	Same	No
Was it more enjoyable than a lecture?		50	10	3
Were there more opportunities to learn than from a lecture?		48	10	3
	Response	We all did	Me	Others
Who benefited most?		59	5	0

In summary, over 95% of students felt there were learning benefits to studying this way and no students felt others had benefited more than they had themselves as part of the collaborative case-based learning activity. The method was reported as being more enjoyable, more interactive and had more opportunities for learning than a lecture. Those students who said that it was about the same as a lecture for measures of enjoyability also added notes to the effect that 'the lectures are good too'. The (15%) of students who would not want to augment their normal sessions with this sort of learning cited pragmatics of bringing in and setting up laptops in lecture theatres.

Student perceptions of learning are one thing, but what evidence is there that the students actually do learn from the experience? My fourth research question asked "Are case-based units of study effective in supporting learning within the reported context?" This is answered below.

#### **4.3.4: Question 4**

**Are case-based units of study effective in supporting learning within the reported context?**

I conducted further research into this case-based approach, this time with case-based scenarios related to the diagnosis of chest x-rays. Learning was evaluated in two ways, with two groups of three students.

Firstly, I checked their performance in relation to solving cases; the students were given five chest x-rays, a list of five pathologies (Aspiration Pneumonia, Miliary Tuberculosis, Pneumoconiosis, Pneumomediastinum, and Ventricular Aneurysm) and a number of resources about each of the pathologies. The students' task was to match each chest x-ray with one of the named pathologies.

Secondly, I was aware that while solving the five inter-related cases the students would be engaging with the supporting resources and, as a consequence, they would learn from that process too. Furthermore this adjunct learning would be in parallel with, and somewhat independent of, their performance in matching the chest x-rays with the list of pathologies. For this second evaluation of learning, I used a pre-intervention/post-intervention test methodology with some additional new questions included just in the post-test. The results of both of these evaluations of learning are shown in Table 5. Students 1-3 formed one collaborative group and students 4-6 formed a second collaborative group.

Table 5: Learning from case-based learning - results

Group	Student	Correct diagnosis	Pre-learning activity test score	Post-learning activity test score	Additional questions performance score (post-learning)
1	1	40%	20%	75%	10%
	2	40%	20%	95%	30%
	3	40%	25%	80%	20%
	4	100%	10%	40%	0%
2	5	100%	0%	75%	0%
	6	100%	25%	90%	40%

It should be noted that this was elective study activity conducted for the purposes of evaluating the teaching method. The students were unfamiliar with the subject matter and diagnosis of chest x-rays is not a core part of the undergraduate curriculum (though it is for postgraduate students). Good learning gains were demonstrated in relation to the pre-test/post-test regime and even though students were aware of what they would be questioned on after the learning activity session (and thus may have specifically have sought answers from the resources), some learning gains were demonstrated in relation to the questions asked through the (previously unseen) additional questions too.

One group matched all five of the chest x-rays with the right pathology and the other group only matched two out of five images. There is no discernable pattern to the performance of the two groups, with a better 'score' in the matching performance of one group being counterbalanced by better learning gains as measured by pre-intervention/post-intervention test regime in the other.

#### **4.4: Summary of findings of context-case 1 and ramifications for practice**

Context-case 1 demonstrates the value of this sort of use of video for teaching in higher education. Video lectures can be used, with little or no loss of educational value, as a replacement for face-to-face lectures. In 2013 this is a significant finding as, following on from the government White Paper *Higher Education: students at the heart of the system* (Department for Business, Innovation and Skills (BIS)) higher education institutions are compelled to publish information relating to the delivery pattern of programmes to prospective students and this information is subject to audit by the Higher Education Funding Council for England (HEFCE). As a result of my work, my institution has accepted the premise that video lectures can replace, without loss of value, face-to-face lectures and has issued guidance that video-lectures, that are *scheduled* within a programme of study, should be categorised as 'lectures, seminars and similar' as opposed to 'individual study'.

The 'teaching' time liberated from the purposes of didactic delivery can be repurposed for knowledge application activities rather than information acquisition. When such activities are offered to students, they are highly valued.

Video is the core and precursor technology that underpins this form of teaching in my academic practice context. My appropriation of the technology has created opportunities for innovation and subsequent curriculum enhancement.

Context-case 1 presented me with food for thought as a teacher. With access to both physical and virtual space and with a need to support learning that could (potentially) be deployed in either domain, what were the affordances of each? As mentioned in Chapter 1, I chose to pursue doctoral study through an EdD, which included a taught component. Part of this programme was on the subject of 'learning spaces' and that focus allowed me the opportunity to articulate my practice at that time with relevant theory. Given that I have made a case in Chapters 1 and 2 that, for me, this doctorate has been a route to learning and professional development that goes beyond the research contexts described through the three context-cases. Below (Section 4.5), I offer an embedded piece of writing (written contemporaneously with the context described above) that demonstrates the learning I undertook at this stage in my doctoral study. This is important to me because it allowed me to begin to immerse myself within the specialised language of education as a research domain and allowed me to access a wider body of literature to guide my learning and development. This 'linguistic initiation' is discussed further in the 'adjunct narrative' section of Chapter 5.

#### **4.5: Adjunct narrative for context-case 1 - Cognitive and social affordances of physical and virtual learning spaces**

The term affordance refers to the particular properties of a system that make it facilitating of a particular process. It is attributed to Tolmie and Boyle (2000): *"Affordance means the properties of a system which allow certain actions to be performed and which encourage specific types of behaviour"* (p. 2)

As information and communication technology (ICT) continues its permeation into modern life, teachers at all levels of education; primary, secondary and (my own area of practice) tertiary, have the option of deploying ICT applications to some degree to support their students. Very often this does not result in choosing between the real world and the virtual world but in deciding how to create the right mix. Educational settings that combine ICT applications with face-to-face learning are often referred to as blended learning models, though terms such as hybrid and woven learning are also encountered in this context.

The learner experience of 'traditional' teaching or learning through the medium of an ICT application are obviously very different, but very often we are hoping for similar outcomes – in fact, many researchers have investigated whether there are differences in the learning outcomes achieved through online study versus a traditionally taught course by comparing two contrasting delivery methods (e.g. Hale *et al.*, 2009; Hrastinski, 2008; Kekkonen-Moneta and Moneta, 2002). Where such teaching (and thus learning) is instruction-heavy and assessments are made as to whether information has been effectively transmitted and effectively received, this is quite straightforward. However, if we believe that learning is a social activity that is inextricably linked to co-construction of knowledge and collaborative sense-making then it is incumbent upon us to ensure that the teaching and learning environments we construct and facilitate are able to support such underpinning social interactions.

The social nature of learning is often and appropriately exploited in educational sessions and whether it is referred to as collaborative learning, cooperative learning, peer supported learning or simply group work – we deploy techniques that invite or sometimes force students to work together to achieve a common outcome. What are the pre-requisites that we need to put into place before students are able to collaborate?

Collaboration is necessarily dependent on some interchange between participants and this process, whether within the real or the virtual world is dependent on some form of multilateral or bilateral discussion. Though our everyday lives initiate us into the realm of discussion, it is a mistake to think that spontaneous discussion between students in an educational setting is just waiting to happen. Brookfield and Preskill (1999) warn us about assuming that students even understand what discussion means in an educational context, let alone value it as a teaching tool. They go on to speak of students' mistrust of 'supposed democratic discussion' and state that attempts to engage students in such a way can be interpreted (by students) as merely a way of reinforcing academic power in a non-traditional way.

Where students perceive that facilitated discussion is in some way a mechanism for deploying academic power with the potential for unearthing transgressional misunderstandings, the situation often leads to the mere appearance of learning and understanding where little may exist (Bartholomae, 1986; Zamel, 1993). Sommers (1992) makes this point as a personal observation: *"I, like so many of my students, was reproducing acceptable truths, imitating the gestures and rituals of the academy, not having confidence enough in my own ideas, not trusting the native language I*

*had learned. I had surrendered my own authority to someone else, to those other authorial voices". (p.28)*

The risk of such superficial discussions occurring is dependent on a number of things, not least of which might be the extent to which specialised language is used within a particular academic community or discipline. Bourdieu *et al.* (1996) refer to such specialised language as code and discuss the difficulty 'apprentices' have in making sense of it: "*The code cannot be learnt except through a progressively less unskilled decoding of messages*" (p.5). This seems to imply that initiates are expected to learn this language in a somewhat osmotic way. I return to a consideration of the importance of the use of language by communities in the 'adjunct narrative' of Chapter 5 (Section 5.7) which leads me to suggest that good learning design should include ample opportunity for students to not just be exposed to specialised language, but to be given opportunities to actually use it – both in conversation and as a tool to apply the concepts coded within language to real 'problems'.

Perhaps we should not be surprised by students' suspicion to classroom discussion, since although the act of discussion itself is a part of everyday life, the physical context of the learning space may apply an overlay of expectation on the players involved in the social act of communication that takes place therein.



This is reinforced by research that explores students' expectations of lectures; Maunder and Harrop (2003) conducted a study that in part investigated the factors that students feel contribute to productive lectures. Twelve recurrent factors are identified with peer-to-peer discussion not emerging as a recurrent factor at all. Though interaction with the lecturer was an emergent factor, this was ranked eleventh out of twelve as a contributing factor. The most recurrent factor was the supply of a 'handout' that contains the main points – reinforcing the argument that the lecture as an educational transaction is perceived as having an instructional not a discursive purpose. If we are to transform these learning spaces into domains of collaborative learning, we need to first overcome the expectation of didacticism.

There is plenty of other evidence to suggest that to do anything else but lecture didactically within a lecture theatre is to meet with disapproval from students regardless of the benefits in achievement of learning outcomes from more discursive teaching methods. Huxham (2005) cites a number of authors to support this view (Van Dijk *et al.*, 1999; Lake, 2001; Goodwin *et al.*, 1991). In addition to the expectations of our students, there are additional difficulties in attempting to facilitate 'classroom' discussion, since there is not even a high degree of agreement among academics as to what actually constitutes discussion: Brookfield and Preskill (1999) write that some authors attempt to make distinctions in verbal exchanges by differentiating between 'conversation'; 'discussion' and 'dialogue', with 'conversation' being portrayed as less formal and 'discussion' necessarily leading to an advancement of an idea – a collective creation of new (shared) understanding.

If we accept this view of 'discussion' then this really is not very different from collaboration or collaborative learning. Dillenbourg (1999) gives a definition of collaborative learning as *"a situation in which two or more people learn or attempt to learn something together"* (p.2). There are dangers in assuming that discussion equates to collaboration though; as Blatchford *et al.* (2003) offer *"...there is more to group work than sitting students in groups and asking them to work together. There may be talk between pupils of course but this can be relatively low level and not about the work in hand, and rarely in service of a joint activity."* (p.155)

Though we should not expect rich discussion to spontaneously emerge from such teaching situations, it is possible to initiate sustainable discussions within lecture theatres through judicious use of structure and a high degree of facilitation. Fry *et al.* (2000) summarising the work of Lacoss and Chylack (1998) recount the views of American students in higher education:

*"Particularly appreciated were lecturers who incorporated responses from students, by soliciting questions during lectures...They welcomed attempts to jolt them out of the passive role in lectures and agreed that such interactive advances were 'well worth the initial awkwardness they felt'"* (p.77); though this is more along the lines of tutor-peer interaction than peer-peer interaction.

Huxham (2005) reports on a technique of introducing 'interactive windows' into lectures to stimulate discussion, he provides evidence as to how both the lectures themselves and the 'interactive windows' within them have consistently proved to be popular with students but he was unable to

demonstrate any statistically significant learning benefits that can be attributed to the inclusion of interactive windows, though the small changes measured were towards the expected trend of the intervention.

The aim of this section of my thesis is to identify the distinctive features of real and virtual learning spaces that make them suitable for collaborative learning. What are the distinctive features that may make the real world a successful collaborative domain?

In the real world it requires little effort to establish a social presence within a group setting. Our physical existence places us within the social domain and facilitates the possibility of our interaction with others. This can be contrasted with the virtual domain whereby we need to make an effort to interact with others; typically this will take the form of initiating or responding to a dialogic (or multilogic) transaction through a medium such as an asynchronous online discussion forum.

In many important ways, if a student does not actively take part in an online discussion they do not exist within the discourse transaction at all. Garrison *et al.* (2000) support the notion that creating a social presence in the virtual domain requires proactive efforts. They define social presence in this context as *“the ability of participants in the Community of Inquiry to project their personal characteristics into the community, thereby presenting themselves socially and emotionally as ‘real people’”* (p.94). Murphy (2004) when drawing from Henri (1992) and Garrison *et al.* (2000) suggests that social presence is

the critical factor in moving discussion to collaboration “*When a sense of community is formed through communicating on a social rather than just an informational level, interaction can move to a higher level and become collaborative*” (p.422). However, this position of active participation as being the route to learning is not uncontested, Beaudoin (2002) cites Fritsch’s notion (introduced in a virtual seminar in 1997) of ‘witness learners’, those who learn from more passive engagement in online seminars and verifies the phenomenon in his own practice context – classifying the learning as auto-didactic.

In the real world (in contrast to the virtual world), social presence is implicitly and inextricably embedded since even those who do not actively pursue discussion take up physical space and are therefore within the transaction frame since there is the opportunity to offer backchannel feedback such as nods, smiles and other gestures that convey participation in the discourse even without making explicitly active contributions.

As a teacher in higher education, the physical space in which I teach is almost always a lecture theatre, which places constraints and controls upon the mode of interaction. This is largely due to the physical arrangement of the participants whereby the students sit in rows facing the tutor and thus when limited discussions are initiated, students really only have discursive access to one or two other people. Reflecting upon the discussion so far, it would appear that the lecture theatre teaching space offers very little potential to foster peer-to-peer communication, discussion or collaboration but the explicit

social affordance of 'being there' does weigh heavily in its favour and actually offers a number of more implicit cognitive and social affordances over collaboration in the virtual world as a result:

- The mode of communication is largely naturalistic – we talk to one another every day.
- The temporal dynamics of discussion are such that talk flows naturally – this contrasts to an online situation where hours or days can occur between turns in a discursive transaction. This offers the opportunity for a very rapid dissemination of ideas that may result in a much quicker construction of shared meaning.
- Voice emphasis, physical gesture and facial reinforcement can enrich the meaning of any given communication act in a way that cannot be replicated by text based online interaction (though emoticons, such as ☺, do get used to try and reproduce some of the context lost in text based communication).
- Even passive players within the communication act are not really passive; they supply back-channel feedback to whoever is speaking through a process of active listening, giving reassuring nods when in agreement and frowning or shaking the head when in disagreement. These (pseudo-)passive cues can have a profound effect on the way a discussion evolves, introducing what amount to positive or negative feedback mechanisms into a debate or discussion.

As mentioned in the first paragraph of this ‘adjunct narrative’, teachers in higher education (and doubtless in other sectors) have a choice in how to mix (collaborative) learning opportunities from both the real world and the virtual domains. Given this and the social affordances that are on offer to support discussion and collaboration in the real world domain, what affordances does the virtual domain offer to support collaborative learning?

When considering discussion and collaboration in the virtual domain, this almost always means considering asynchronous text-based communication applications and although other technologies such as synchronous text communication and synchronous video communication are fairly easily deployed, they are only now beginning to grow in popularity (Hrastinski, 2008). It has been suggested that the asynchronous nature of online courses attracts learners to study online (*ibid.*). What are then, the social and cognitive affordances offered by asynchronous online discussions (AOD) that make it a suitable candidate for fostering collaborative learning?

- The ‘anytime, anyplace, anywhere’ affordances of AOD can be used to support an argument for deploying it to facilitate student discussion. This argument becomes especially persuasive for distance education where students have very limited opportunity to physically meet; though I would not disagree with this, the argument is weaker in the context of a hybrid learning environment (such as my own context of practice) since we can *choose* between the real world and the virtual world for any facet of the educational experience.
- Some of the affordances offered in the real world domain can, in some cases be a *dis*-affordance. The naturalistic temporal dynamics of

discussion as outlined above can promote inequity in student discussions, disadvantaging those who are expected to converse in a non-native language; or where students would simply benefit from some time to think about what is being said before responding. In these situations, the non-naturalistic temporal dynamics of an online asynchronous discussion is actually an affordance, which we could argue, produces a deeper if slower mode of discussion. Pilkington and Walker (2003) make this argument stating: *“In face-to-face classrooms non-native speakers (NNS) often struggle to keep up with the flow of discussion or have difficulty in expressing ideas in writing”* (p.42). They go on to cite a number of authors who have suggested that online discussion can be highly motivating and more inclusive for such students (Chun, 1994; Pennington, 1996; Warschauer, 1996; Beauvois, 1998). Although I certainly agree with this analysis, Pilkington and Walker’s paper focuses on *synchronous* online discussion, where the effects of the non-naturalistic temporal dynamics affordance are likely to be minimised since response times are in the order of seconds rather than the hours (or possibly days) of asynchronous discussions; though there are still some instances where the affordance of text-based communication itself is enough to allow NNS to participate more fully – an example of such a scenario would be where an NNS was fluent in the group language but was inhibited by a strong accent.

- One of the key affordances of AOD comes as a consequence of the act taking place on computer networks, meaning that participants are only

ever a couple of clicks away from being able to access any file on their computer or the Internet. This offers a great deal of potential for enriching discussion and promoting collaboration. Participants can 'send' web-links to one another; append files such as extracts of previous work, pictures or other media files. This ability to spontaneously include a citation to support an argument or to show another participant what you mean with pictures or video clips is a very powerful way to enrich discussion and is not generally possible in traditional face-to-face discussion domains. Kekkonen-Moneta and Moneta (2002) support this view stating *"The World Wide Web provides a platform for...downloadable files, graphics, animations, audio, and video....e-Learning tools and techniques have the potential to capture and even enrich and individualize the communications and interactions that normally take place in the classroom"* (p.423)

So far we have discussed the affordances that the real world and the virtual domains offer students to facilitate discussion / collaboration but we should not ignore the affordances that we as teachers enjoy by exploiting the affordances of each domain:

In the real world domain, when we attempt to initiate and sustain small group classroom (or lecture theatre) discussion in this context, we do so in the knowledge that we can see and hear our students, we can pick up on the 'buzz' of the parallel conversations and we can walk the room sampling the discussions and joining in where we want or need to. Things are very different in the virtual domain of AOD, but this mode of collaboration still offers some



useful affordances for teachers. Firstly, we see *all* of the discussions, since we can review the succession of threads at our leisure we can 'hear' (read) each student who contributes to the debate, this contrasts strongly with the real world model when the best we could do was to sample the ongoing discussions through real-time selective eaves dropping. Once we realise fully the power of the technology in this regard, we do not miss a word or a student.....or indeed the lack of a student. This degree of oversight suggests some obvious analogies with the social concept of the panopticon as introduced by Michel Foucault in his 1975 book *Surveiller et punir: Naissance de la prison* (translated to English in 1977 as *Discipline and Punish: The Birth of the Prison*).

Foucault's panopticon is a metaphor for social surveillance inspired by Jeremy Bentham's prison design of 1791 whereby a prison is conceived such that the cells are arranged in a circular fashion around a single guard tower. This arrangement when coupled with a cunning arrangement of windows and lighting allows a guard to be able see into each cell at will without being seen by the inmates themselves. It is important to grasp that the inmates themselves understand that they could be being observed at any time and thus (must) make the assumption they are being observed all of the time. This situation was predicted to have a profound effect on the behaviour of the inmates.

Foucault took this concept of behaviour being modifiable through the explicit possibility of surveillance at any moment and applied it to social institutions arguing that through a constant stream of information (knowledge), the state is able to exercise power over individuals and thus influence their behaviour

towards compliance. Foucault believed so strongly in this link between knowledge and power he would refer to it as a single concept; knowledge-power.

As society has continued to develop since Foucault's death in 1984 so has our ability to carry out surveillance on our population with increasing degrees of sophistication. Some authors choose the example of the increasing number of CCTV installations in town centres to illustrate this point (Norris and Armstrong, 1999).

In a very important way, virtual learning environment software such as *WebCT*, *BlackBoard* or the product I use, *Moodle*, represent perfect panopticons. Such applications offer us the opportunity to survey our students' interactions in detail, we can find out who has logged on to the system, when, for how long, what did they say, who did they talk to, what other resources or activities did they access? A screen grab with anonymised data from one such course is given as Figure 13:

Wed 17 August 2005, 04:25 PM			course view	E-Learning in the Faculty of Health - Aug. 05
Wed 17 August 2005, 04:25 PM			forum view forums	
Wed 17 August 2005, 04:25 PM			forum view discussion	Sharing your thoughts about e-learning
Wed 17 August 2005, 04:24 PM			forum view discussion	Sharing your thoughts about e-learning
Wed 17 August 2005, 04:24 PM			forum view discussion	Sharing your thoughts about e-learning
Wed 17 August 2005, 04:23 PM			forum view discussion	Sharing your thoughts about e-learning
Wed 17 August 2005, 04:22 PM			forum view discussion	What might you be doing with Moodle?
Wed 17 August 2005, 04:22 PM			forum view forum	Why are we here?
Wed 17 August 2005, 04:22 PM			course view	E-Learning in the Faculty of Health - Aug. 05
Wed 17 August 2005, 04:21 PM			choice view all	
Wed 17 August 2005, 04:21 PM			choice view	You overall experience
Wed 17 August 2005, 04:21 PM			choice choose again	You overall experience
Wed 17 August 2005, 04:21 PM			choice view	You overall experience
Wed 17 August 2005, 04:21 PM			choice view	How long did this course take you?
Wed 17 August 2005, 04:20 PM			choice view all	
Wed 17 August 2005, 04:20 PM			choice view	Module Evaluation
Wed 17 August 2005, 04:20 PM			choice view all	
Wed 17 August 2005, 04:20 PM			choice view	Assessment
Wed 17 August 2005, 04:20 PM			choice choose again	Assessment
Wed 17 August 2005, 04:20 PM			choice view	Assessment
Wed 17 August 2005, 04:20 PM			choice view all	
Wed 17 August 2005, 04:19 PM			choice view	Learning Activities
Wed 17 August 2005, 04:19 PM			choice choose again	Learning Activities
Wed 17 August 2005, 04:19 PM			choice view	Learning Activities
Wed 17 August 2005, 04:19 PM			choice view all	
Wed 17 August 2005, 04:18 PM			choice view	Communication
Wed 17 August 2005, 04:18 PM			choice view all	

Figure 13: A sample of engagement with a VLE by one student over a seven-minute period

In my own teaching I utilise *Moodle* to deploy a number of applications woven into the course with ‘pre-study’ material supplied prior to a classroom based session and additional activities offered as follow-on learning opportunities. On the first day of the module launch, one of the first things I did was to demonstrate the ‘logs’ facility on *Moodle* (as shown in the picture above) to students – immediately a plethora of hands shot into the air with a single question.... ‘Does that mean you’ll know whether we have looked at our video lecture before coming to class?’ It did, I said yes.

Some authors raise concerns in exploiting the panoptical potential of technology in this way, Epling *et al.* (2003) state that “...the concern we have tried to raise in this paper is that the ‘surveillance-capable’ nature of these technologies may mean that they are used in ways, which, we feel, are

*inimical to the underpinning philosophies of education in general and nurse education in particular” (p.417)*

I think that the perspectives articulated above in respect to panoptical technologies in the context of education, telecommunications and to an extent wider society are slightly skewed in that they seem to suggest that the concept of the panopticon as Foucault describes it is a wholly bad thing, ignoring the panoptical principle as a product or cultural artefact of a benevolent society not a despotic one. Bentham’s original prison concept should be considered in reference to the prison system it was proposed to replace, where discipline and compliance was enforced by brutality and conflict and CCTV systems are placed in public spaces for the protection of citizens by governmental organisations that have been elected into being by the same citizens. In the example from my own practice, the ‘panoptical potential’ needs to be considered in reference to the University’s good practice guide for *Moodle* usage whereby it is suggested that staff follow-up on any student who is not engaging with the virtual facets of the programme so as to proactively offer timely support.

Other advantages of being able to use the logs benevolently include being able to track the usage of particular resources; being able to check the scores of formative tests so as to verify whether the group is learning effectively from the programme – this allows for timely and targeted intervention by way of support to students prior to summative assessments. In this regard the panoptical potential of these technologies is deployed in a beneficial way for the group as a whole, perhaps sufficient justification for use of this knowledge-power. I should point out that in the closing remarks of Epling *et al.*’s (2003)

paper they do state: *“It may be that their use can, in certain circumstances, be justified”* (p.417).

Throughout this ‘adjunct narrative’ I have discussed the affordances offered by both the real world and the virtual learning domains, though in the earlier part of the section I have made play of a third way – to mix these domains to produce the right blend. There is much potential in such approaches and my own (researched) academic practice has been focussed on designing, piloting and evaluating just such a model. Part of this evaluative activity has been in the investigation of the efficacy of ‘designing-in’ student (peer) collaboration into classroom-based sessions to enhance the learning opportunities of students. This evaluation/research activity is the focus of the next chapter (Chapter 5).

## **CHAPTER 5: CONTEXT-CASE 2 - VIDEO AS A TOOL TO RESEARCH STUDENT LEARNING**

### **5.1: Summary of context**

This chapter offers the narrative relating to context-case 2: video as a tool for research. It describes academic practice broadly situated within the 2005-2008 timeframe (see Table 1) when I was carrying out the role of leader of innovation in learning and teaching (following my appointment as Senior Academic, Learning and Teaching within the Faculty of Health). In terms of the sector context, the 74 CETLs (including one at my own institution) had been identified and funded - leading to a step-change in investment in learning and teaching activity within funded institutions and a concomitant expectation to generate evidence of effectiveness of new approaches to learning and teaching. This chapter offers a case of video being used as a tool for research – specifically to capture a visual and audio record of students working together to solve clinical case-based problem scenarios. It describes research activity concerned with investigating whether the peer collaboration facet of the group-based approaches to teaching described in Chapter 4 confers additional value when compared to lone (individual) study of identical case-based resources.

### **5.2: The potential value of collaborative learning**

One of the features of the case-based teaching model discussed in the first part of Chapter 4 is the degree to which peers become a resource to each other through the educational affordances of peer collaboration. However, in

my context, the pragmatics of setting up the co-located computer supported collaborative workspaces had proven to be quite labour intensive and, other than the peer support, all of the resources were hosted on Moodle and thus could be offered to students for individual (rather than collaborative) study. I was therefore interested to know whether there was any additional value offered by peer collaboration in this teaching context. With this in mind I set out to research whether collaborative case-based learning conferred a learning advantage over individual (lone) study of the same case-based resources (Question 6). But before a comparison could be made between individual study performance and collaborative study performance, I had to be sure that the student groups were actually collaborating rather than just sharing a workspace and coming to a superficial agreement in relation to their 'group' answers to the case-based problems posed.

#### **5.2.1: Question 5:**

**Do the cases, when studied by triads of students, lead to verifiable peer collaboration?**

This is not a straightforward research question to answer – when does group activity become 'collaboration'? What activity markers might we look for and what are the methodological candidates we might use to observe them?

### **5.3: Researching collaborative learning**

The model of case-based teaching described above is conducted in a way that is consistent with the practice of computer supported collaborative learning (CSCL). Stahl *et al.* (2006) offer a useful potted account of the history and theoretical underpinnings of computer supported collaborative learning as

an academic field of inquiry. They provide the definition “...*an emerging branch of learning sciences. It is concerned with studying how people can learn together with the help of computers*” (p.409). While discussing how the concept of CSCL can be conflated with e-learning, they point out that CSCL is also concerned with the study of co-located learners who make use of the affordances of computers to provide a focus for shared discussion, and it is this ‘variant’ of CSCL that is the focus of this context-case.

One of the central questions to ask when undertaking CSCL research is, how can we reveal evidence that collaboration is occurring? One of the advantages of studying groups of co-learners rather than individuals is that co-learners reveal aspects of their cognition through their communication acts, whether these are asynchronous or synchronous text offerings, shared drawings or indeed face-to-face conversations in a co-located context such as that described in this chapter. This externalisation of cognition through various forms of communication is, of course, much easier to capture than the internal thought processes of an individual learner.

Stahl *et al.* (*ibid.*) remind us that, although these communication transactions are on display, *individual* contributions may not be usefully analysed at this level. The authors contend that meaning is not encoded within these individual contributions but rather distributed *between* individual contributions, with the true meaning of each utterance being dependent on references to previous contributions, thus being representative of a continually evolving



shared understanding – to analyse fragments in isolation is quite literally to miss the point.

It follows therefore, that any analysis of collaboration needs to focus upon the transactional aspects of discourse. This need influenced my selection of a suitable methodology as outlined below. Collaborating learners *display* aspects of their learning through their discourse allowing researchers the opportunity to observe and capture this activity. Through participation in the conferences of the International Society of the Learning Sciences, I was persuaded that video capture and analysis represented a good methodological candidate for my research. Although there are ethical dimensions to using video-capture as a research tool – for example Heath and Luff (1993) refer to the difficulty in preserving the anonymity of participants; I made a case (via formal ethical review) that we can justify its use since there is value in collecting non-verbal data. As such the choice of video offers additional and necessary data collection affordances over other methods.

Alibali and Nathan (2004) found that gesture accompanied 61% of teachers' utterances and, where analysis was restricted to utterances that focused on the instructional task itself, this rose to 77%. The authors also reported that the more abstract the content of an utterance, the more likely it is to be supported by some form of gesture. Though the context of my own research is different from these authors (theirs was undertaken with American school

children), it was not unreasonable to expect that some of the communication between the learners would be non-verbal.

It is important to emphasise that the ethical issues of what Goldman-Segall (1998) called digital video ethnography extend beyond simple anonymity issues; we need to guard against becoming voyeuristic spectators. At first glance it may appear that my chosen methodology ran just this risk; filming participants collaborating on a problem while I remained once removed and voyeuristic. However, I would contend that I was a participative agent in their discussions, albeit in a more detached way. The discourse of the co-located participants was mediated by the VLE-based case-space, which included an on-screen textual commentary - a set of instructions and narrations that I provided; consequently my words, a facet of my linguistic and textually encoded cognition, was available to the group. Thus, through an asynchronous and artefactual proxy; I was a contributor to the collaborative process, I was not an unengaged voyeuristic spectator.

It is worth discussing whether digital video ethnography should be considered as an objective or a subjective medium of recording learning activity; Goldman [formally Goldman-Segall] (2004) actually refers to digital video ethnographic accounts as being *fictional* since not only are the representations 'framed' by the author (or videographer), who controls what we do see, but they also control what we *don't* see. I offer a detailed consideration of 'framing' in Section 6.3.3 (of Chapter 6).

## 5.4: Methodology

Koschmann *et al.* (2004) believe video analysis deployed in this way shares many of the principles of conversation analysis and as such can be considered as a form of ethnomethodology which is described by these authors as being focussed upon the process by which individuals make sense of their own actions and those of others; these actions include discourse.

Koschmann *et al.* (*ibid.*) make an interesting advocacy for articulating video analysis techniques with Garfinkel's policies for ethnomethodological inquiry. In his 1967 book, *Studies in Ethnomethodology*, Garfinkel proposes five policies as a guide to undertaking such study, his third policy speaks to relevance and is summarised by Koschmann *et al.* as 'Policy 3 – Data is grounded'. In this section of their paper they say that it is the role of the video analyst to act purely empirically:

*"...we must 'bracket out' our pre-existing theories and understandings while constructing our analyses and introducing categories to account for behaviors [sic] only when we can empirically demonstrate their 'relevance' as evidenced by the talk and activities of the participants."*

(p. 283)

Given that I have argued above that I had some participatory agency in the collaborative discourse of the students I was researching, complete 'bracketing-out' of my understandings during the analysis phase of researching the discourse acts I had recorded was always going to be somewhat challenging. However, I did try to heed the implications of this

'policy' by developing a coding schema (to quantify collaboration) that articulated emergent student discourse with the writings of key authors. Of course, I was still able to select the authors and papers for incorporation into my schema and I was the one applying the schema to the discourse data; but this did allow me to place a little distance between any preconception of collaboration (and what it 'looks like') and what I eventually coded as evidence of collaboration.

Earlier in this chapter, I described how collaborative situations, through the verbalisation of the thinking of the participants, allow for aspects of joint meaning making to be on display through discourse. Chernobilsky *et al.* (2003) state that "*discourse is an essential tool of any collaborative activity*" (p. 2) and point us to activity theory as being helpful in analysing discourse, especially where this is supported by technology, since activity theory places artefacts central to the distribution of human cognition. Their approach led them to develop a methodology that I thought may have been very helpful in analysing the type of discourse and video captured data my method would generate.

Although their research investigated an online collaboration between students and my own research investigated face-to-face discourse, there were, nonetheless, important similarities. Chernobilsky *et al.* (*ibid.*) state that they intended to examine "*how tools shape the activity, while the activity shapes collaboration and discourse during the task*" (p.2). This resonated very well with my own context of utilising VLE-based case scenarios to catalyse peer discourse.

Their methodology was designed to facilitate two types of analyses:

- To construct chronological representations of discourse and tool-related activity (CORDTRA).
- To undertake a qualitative examination of the discourse exhibited by the participants.

Since the focus of the authors' research was online collaboration it made sense for them to represent the chronological dimension by the line number of each contribution or turn as it appeared in the online synchronous conferencing software. My requirements were different since 'line number' does not hypothecate turn taking and there was greater potential for overlapping talk to occur (though this actually occurs in online chat but remains hidden). Therefore, I sought suitable software capable of representing this sort of data. At the time, Michael Kipp's *Anvil* seemed to be a good match for my needs. A screen capture of this software in action is shown as Figure 14.

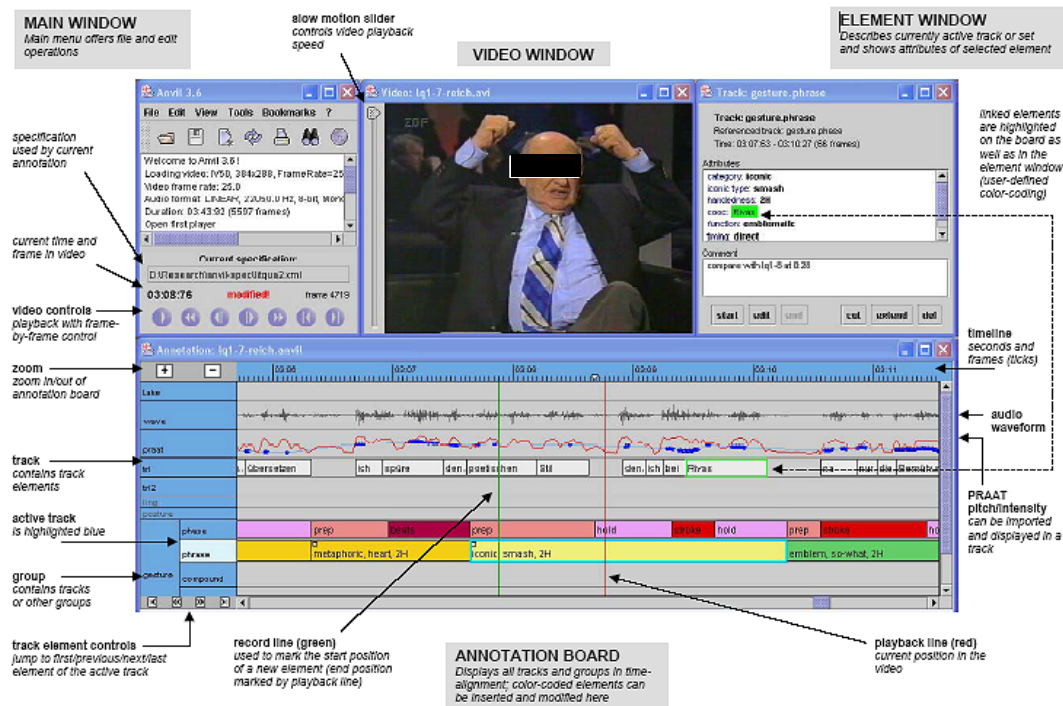


Figure 14: Screen capture taken from the Anvil website (Kipp, undated)

Following transcription, after all of the data had been assembled, I intended to undertake analysis in the following way:

- Firstly I intended to assess the amount of talk that occurred and the percentage of which was attributable to each participant in terms of the number of words spent in talk.
- Secondly I intended to code all of the verbal utterances to discourse function. The work of Hmelo-Silver and Chernobilsky (2004) implementing the work of Chernobilsky *et al.* (2003) offered the basis for the preliminary coding schema shown in Table 6.

Table 6: Coding schema adapted from Hmelo-Silver and Chernobilsky (2004)

<b><u>Channels of collaboration</u></b>	<b><u>Category</u></b>
1. Sense-making	New ideas
	Modification
	Agreement
	Disagreement
	Acknowledgement
	Summaries
2. Content	Task-related
	Tool-related
	Personal
3. Monitoring	Monitoring and Planning
	Meta and prompts
	Informational

Although this schema offered a number of ‘codes’ as markers for collaborative activity, I felt it was incomplete in terms of its suitability for a face-to-face context as the schema offered no way to code ‘backchannel’ data (such as ‘hmm’, ‘oh’ etc) and I therefore intended to add a 4<sup>th</sup> channel to document this data.

Although on the face of it, all of the categories seem sensible enough, I did not exclude the possibility of the participants engaging in discourse that I had not predicted and accounted for. Rather than using a 5<sup>th</sup> channel – ‘other’, I intended to remain flexible, taking a grounded approach with the data and evolve the channels and categories from the discourse data as it emerged from the preliminary analysis. Robson (2002) supports this stance, guarding

against using pre-determined coding categories if the research is likely to use emergent data. He does however, go on to say that since we always bring 'conceptual baggage' to our analysis, it can never be truly grounded *exclusively* in the data – this is in line with my own concerns regarding to adherence to Garfinkel's 3<sup>rd</sup> policy when conducting video analysis.

Although context-case 2 as described in this chapter is centred upon the video recording of triads of students as they work together to solve case-based problem scenarios, the data to be collected goes beyond that which allows for observation of speech acts and accompanying gestures within physical space. I was also aware of the need to capture, represent and analyse 'screen capture' data relating to the students' interactions with the VLE. At first glance, this seems as if it should simply be a case of making note of the mouse clicks and various window openings and laying them onto a time line; but I was also aware of the potential for some participants to use the mouse cursor itself as a gesture tool – this would be detectable by correlating such activity with supportive utterances such as 'look here'.

One of the reasons for selecting video as a data collection method is to include gestures within the recorded discourse. I was therefore interested to explore schema candidates that may help with the coding of collaborative markers from such visual data. A useful framework for coding gesture has been described by Wells (1999) based on the work of McNeill (1992). The broad categories are listed below:



- Action
- Point (to object or aspect of situation)
- Demonstration
- Gesture: Iconic
- Gesture: Metamorphic (including abstract pointing)
- Gesture: Attitudinal
- Emphasis

On reading Wells' paper it was clear that these categories emerged from preliminary analysis of the data he collected. So, rather than try to appropriate such (3<sup>rd</sup> party) schema I committed to take a similar approach myself while keeping one eye on these categories as potential coding candidates.

Having justified video as an appropriate tool to research collaborative learning, what were the specifics of my chosen methodology? First, I had to find a way to 'represent' the video data, to re-visualise it in a way that would allow me to conduct the analysis and articulate it with the analytical schema I developed. Although there are a number of specialist tools with which to analyse video data, such as *Transana* and *Anvil*, I found these tools to not be fully aligned with my needs, I therefore developed my own. I used a twin-screen computer that allowed for a video-editing package to be displayed on one screen while I ran *Microsoft Word* on the other. Using a table format, I was able to transcribe the peer-to-peer discourse, append screen captures of what the students were looking at on the screen and embed single-frame snapshots from the video footage of any gesture they made. An indicative setup of this analysis workspace is offered as Figure 15.

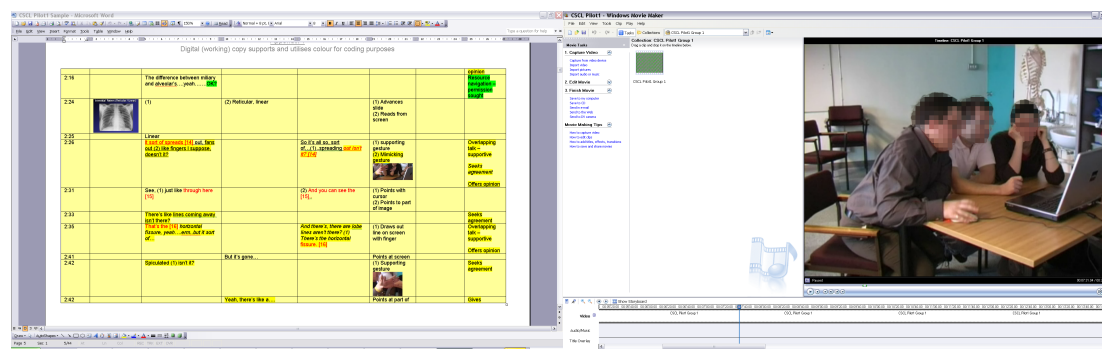


Figure 15: My video analysis computer screen workspace

As well as showing a frame from the video footage on the right-hand screen, Figure 15 also shows how this transcription of the collaborative activity was undertaken by recording the data directly into *Microsoft Word*. The table (on the left-hand screen), unreadable in Figure 15 (readable colour examples are available in Appendix 2) comprises eight columns:

1. Time index – time progresses down the table.
  2. Screen-capture data – this represents whatever participants were looking at on the screen at any particular time. Screen captures are shown at each change point and it can be assumed that they remain on the screen until the next screen capture is displayed.
  3. Transcribed speech from student 1
  4. Transcribed speech from student 2
  5. Transcribed speech from student 3
- (Each student's speech transcription was annotated with a numerical reference to indicate points of gesture or overlapping talk)

6. This column recorded action notes, such as laughing or key gestures. Each gesture was 'screen grabbed' and included as a small still image within this column.
7. This column represented the group focus and as such allowed for coding of broad activity (this information was also extended across the whole width of the sheet as a background colour (for easy overall reference) – the coding name for each focus space remained in this column.)
8. This column allowed for the recording of collaborative markers, which were coded with coloured text to match the specific transcribed text entries to which they refer.

The ability within *Word* to use colour was put to good effect in both transcription and analysis. For transcription purposes, for example, overlapping talk within any individual time indexed section (each row) was represented as red text and annotated with a numerical reference.

Of course, being able to represent the video and audio data is just part of the work to be done; for collaboration to be quantified there is the need to use an analytical schema with which to interrogate the data. Building on the work of Hmelo-Silver and Chernobilsky (2004) I developed this schema further by interrogating the work of other authors who had researched peer-collaboration and trying to apply their 'markers' for collaboration to my own data set. I chose the markers based on how well they fit the observable data; by viewing video footage time and again, I built up a sense of how collaboration was being enacted and where I could recognise collaborative markers from the studies I

had read, I tried to incorporate them within my schema. This approach addresses the weaknesses of quantitative discourse analysis cited as by Mercer *et al.* (2004) “*pre-determined categories or other target items will limit analysts’ sensitivity to what actually happens*” (p.196). Mercer *et al.* go on to compare the use of such pre-data coding schema to an approach where the coding scheme emerges from the data ‘any categories emerging are generated by the research data (i.e. are outcomes), not based on prior assumptions underlying the coding scheme’, this second approach is cited by the authors as being a strength of a more qualitative approach to handling this sort of data.

Through the process of transcribing the data, I became very familiar with the dialogic activity and began to form views as to what aspects of the communication may represent collaborative activity and was able to develop ideas from relevant literature:

- Dillenbourg and Traum (2006) argue that feedback between collaborators is important in establishing common ground, demonstrating continuing attention and indicating a readiness to progress with the task at hand. Building on this premise I developed the following codes (Table 7) as collaborative markers (the examples given are real samples taken from the analysed video footage as shown in Appendix 2):

Table 7: Codes for markers of collaboration derived from Dillenbourg and Traum (2004)

Major code	Sub-code	Example
Establishing common ground	Seeks agreement	"See – that looks overexposed, do you see what I mean?"
	Gives agreement	"Yeah, that looks dark to me." [paired with above]
Demonstrating continuing attention	'Back-channel feedback'	"Hmm"
Indicating a readiness to progress	Resource navigation – permission sought	"OK, happy with that?"
	Resource navigation – permission given	"Yeah" [paired with above]

- Pea (1993) cited in Hmelo-Silver and Chernobilsky (2004) states that 'Exchanging information is an important part of learning together as knowledge is constructed socially through joint efforts towards common objectives'.

This is similar to my own adaptation of Dillenbourg's (1999) definition of collaborative learning: 'A situation in which two or more people learn or attempt to learn something together through shared activity'. This led to the development of the following codes (Table 8) as collaborative markers (the examples given are real samples taken from the video footage analysed in Appendix 2):

Table 8: Codes for markers of collaboration derived from Pea (1993)

Major code	Sub-code	Example
Information exchange	Offers opinion	"I think the thing is, the important comparison is the difference in alveolar... the difference is not between alveolar and normal but between alveolar and military."
	Acknowledges opinion	"Yeah, I agree" [paired with above]
Activity sharing	Question – task planning	"Go for it?"
	Reply – task planning	"Yeah, we'll click for that one." [paired with above]

Building on these concepts I developed the following codes for ‘information’ Stahl (2005) argues that when one considers collaborative learning, rather than concentrating on individuals it may be informative to study how processes of learning take place at the group level. The allied concepts of shared cognition and ‘joint meaning making’ may thus be important markers for identifying collaborative learning and to that end I developed the following codes for joint meaning making (Table 9).

Table 9: Codes for markers of collaboration derived from Stahl (2005)

Major code	Sub-code	Example
Joint meaning making	Overlapping talk - supportive	<i>“Diffuse means across the whole area, focal means (localised)<sup>1,2</sup>”</i> <i>(“local”)<sup>1</sup> (“yeah”)<sup>2</sup></i> [Bracketed text represents overlapping talk by different participants]
	Topic question	<i>“What’s round pneumonia?”</i>
	Topic answer	<i>“Just lumps”</i> [paired with above]
	Concept reinforcement	<i>“Like you said, it’s general blotchiness across the whole of the chest”</i>

All of these codes, derived from articulating the data I collected with the work of the authors cited above, are aggregated as a composite schema shown as Table 10 with a set of indicative ‘scores’ generated by its application to a 20-minute video-sample of collaborative activity.

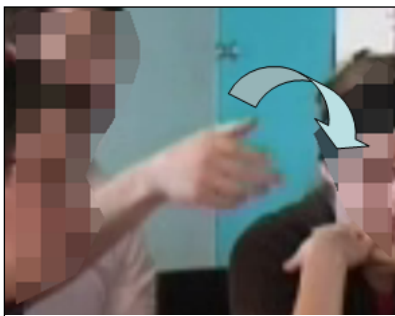
Table 10: Collated analytical schema - markers for collaboration; results of sampled data (Appendix 2)

Code	Number of events recorded in indicative sample
<b>Establishing common ground</b>	
Seeks agreement	40
Gives agreement	27
<b>Demonstrating continuing attention:</b>	
Back-channel feedback	76
<b>Indicating a readiness to progress</b>	
Resource navigation – permission sought	22
Resource navigation – permission given	17
<b>Information exchange</b>	
Offers opinion	84
Acknowledges opinion	34
<b>Activity sharing:</b>	
Question – task planning	13
Reply – task planning	4
<b>Joint meaning making</b>	
Overlapping talk – supportive	16
Topic question	5
Topic answer	7
Concept reinforcement	4

In addition to the coded (verbal) discourse data shown above, the video transcription method allowed me to record gesture. Gesture does seem to be important as a marker for collaboration within the data set presented as Appendix 2, since there have been some gestures where, similar to the results reported by Alibali and Nathan (2004), relatively abstract concepts were grounded with gesture ('paint flick'; 'pulling apart'; 'radiating lines'; 'white

chest'). In my final representation, I didn't find it useful to explicitly code gesture in the way that Wells (1999) has describes, but I was able to record and represent gesture by appending 'video captures' of gestures to speech acts, thus enriching the representation of the significant speech acts with the accompanying gestures made by the participants.

The 'paint flick' concept and associated gesture (mentioned above) was quite striking – one of the students described a particular appearance (nodular, miliary pattern) on a chest radiograph as looking like it had been flicked with paint (see Appendix 2; time index: 3:52); communication of this concept was augmented with a gesture (Figure 16):



*Figure 16: Original 'paint flick' gesture seen at time index 3.52 (Appendix 2)*

This gesture and the accompanying conceptual label of 'paint flick' is internalised by other members of the group and is used by another member multiple times within the session (Appendix 2; time indices: 04:45; 05:31; 06:58 and 14.22). Each time the 'paint flick' gesture is used; in fact, on two occasions *only* the gesture is used to indicate an opinion that a 'paint flick' appearance is present:



At time index: 4:45 *"Like you say, that's like a paint flick"* (Figure 17)



Figure 17: Gesture seen at time index 4:45 (Appendix 2)

At time index: 5:31 *"That's the, sort of like the err miliary one isn't it?"* (Figure 18)



Figure 18: Gesture seen at time index 5:31 (Appendix 2)

At time index: 6:58 *"Is a bit, sort of, paint splatter, I'd say it was miliary myself, yeah"* (Figure 19)



Figure 19: Gesture seen at time index 6:58 (Appendix 2)

At time index: 14:22 “*Nodular is like you said, flicking of the paint, I like that analogy*” (Figure 20)



Figure 20: Gesture seen at time index 14:22 (Appendix 2)

I think this sequence offers a good example of the value of collecting non-verbal communication acts in addition to verbal acts; since although the terminology to describe a military pattern changes during the sequence from ‘paint flick’ to ‘paint splatter’ – the associated gesture remains unaltered, connecting the two concept labels to the same concept.

It is probably worth pointing out the ‘find’ tool within *Microsoft Word* enabled me to find these references to ‘paint flick’ very quickly within the electronic version of Appendix 2 and I was able to ‘copy and paste’ the screen captures into this thesis with ease – this example illustrates some of the affordances this readily available (not specialised for video analysis) software offers the video analyst / researcher.

Also, through use of this transcription method, I have been afforded an opportunity to chart the progress of the overall activity through the identification of ‘focus’ – these have been adapted from Pilkington (1999) and represent the overall activity of the group at any time. A coloured background in Appendix 2 represents each focus, they are:

- Prepare
- Co-explore
- Debate
- Concept construction

Though these foci haven't been used for data analysis directly, using these foci and representing them in different background colours allows for rapid visual scanning of the data by utilising the 'print preview' tool within Microsoft Word as shown in Figure 21.

Figure 21: A screen capture of the data set (Appendix 2) when viewed in the 'print preview' tool of Microsoft Word

This feature proved very convenient for rapid navigation of coded data and enabled me to quickly identify some sub-clips that I used to pilot an alternate discourse analysis methodology, described below in Section 5.4.2.

### 5.4.1: Further reflection on my use of *Microsoft Word*

The use of *Microsoft Word* was a good fit to my need to use the codes from this schema to mark up the data – the codes could be counted by using the 'find and replace' tool; also, the text highlighter tool, the use of coloured text,

coloured backgrounds and font modifiers were all useful in marking up the data. Additionally, media such as screen-captured images were easily embedded within the body of the table and rapidly transferable to other documents on demand (such as this thesis).

*Microsoft Word* also has a word-count utility and the tabulated presentation of the data allows for word-counts to be done for columns, rows or individual cells as appropriate; for example, Student 1 contributed 1968 words, Student 2 contributed 709 and Student 3 contributed 1335 words to their collaborative discourse over the sampled period represented as Appendix 2.

Although necessarily based upon subjective interpretations of human communication, I was able to discern with some confidence that my case-based model of teaching, when enacted with triads of students, did lead to true (and quantifiable) peer collaboration.

#### **5.4.2: Potential alternate methodology**

As is evidenced above and through the inclusion of Appendix 2 in this work, although I decided to apply a 'coding and counting' method (of discourse analysis) to measure collaboration as my preferred method, I did explore another methodological candidate too. While attending the International Conference of Computer Supported Collaborative Learning in Taipei (May 30<sup>th</sup> through June 5<sup>th</sup> 2005), I was exposed to a newly proposed method for conducting analysis of collaborative discourse. Spada *et al.* (2005) offered a paper centred upon a more naturalistic approach to assessing collaboration; their method takes the form of asking a number of observers to score collaboration as demonstrated on a section of video on a scale of one to ten

according to (in their context) nine 'dimensions'; only the dimensions they chose for their context that demonstrated a statistically significant level of inter-observer reliability were used to produce an aggregate score of collaboration.

This naturalistic approach is supported by key workers in the field of digital video ethnography such as Zemel and Goldman (personal conversations: Computer Supported Collaborative Learning 2005, Taipei) both of whom believe that there is a real risk in losing much of the essence of collaborative discourse if we try to code the data into our own personally created (chosen) channels because by so doing we must necessarily be approximating and potentially distorting the data.

Though potentially there were considerable advantages in adopting this methodology - naturalistic interpretation and rapidity of analysis, I had some questions in relation to the level of detail that might be discernable. The method would be strong in relation to making an assessment of overall collaborative activity but might (I anticipated) be less effective in identifying the key transactions in discourse that facilitated effective collaboration. This was important because if collaboration, as an activity, conferred a learning advantage over individual (lone) study (in my practice context) then being able to recognise when, and from what stimulus, collaboration occurred would be useful; allowing me to go on to actively design-in opportunities likely to encourage collaboration within the case-based resources I was developing.

In order to 'get a feel' for this methodology of video analysis, I conducted a small pilot. This pilot 'study' took place while conducting a workshop on behalf

of the Higher Education Academy (Introduction to Pedagogic Research Methods, 16<sup>th</sup> May 2007); the HEA had asked for volunteers who were in the throes of conducting pedagogic research and who would be prepared to introduce their methods to peers as a focus for discussion. As well as presenting the more conventional discourse analysis methods (as offered above and as Appendix 2), I conducted a live test of the Spada *et al.* (2005) (descriptor and ratings) methodology.

The brief pilot study conducted at the HEA-sponsored event took the following form:

- Using the analysis methods outline above, I identified **two** 1-minute video segments from the data set that seemed to reflect (from the (colour coded) coding schema) different foci of collaborative activity.
- I constructed descriptors ('dimensions' in the terminology of Spada *et al.*, 2005) for each of the coding channels I had identified in my main pilot study (with some minor adjustments)
  - Dimension 1: Establishing common ground  
*Evidenced through tentative questioning that seeks to establish whether or not participants share preconceived notions. May manifest as dialogue transactions that 'seek agreement' and 'give agreement'.*
  - Dimension 2: Demonstrating continuing attention  
*Evidenced through active listening. May manifest as brief verbal utterances.*
  - Dimension 3: Indicating a readiness to progress

*Evidenced through dialogue that seeks to establish whether all participants are ready to proceed. May manifest as dialogue transactions that 'seek permission to proceed' and 'gives permission to proceed' or discussions regarding navigation through the task.*

- Dimension 4: Information exchange

*Evidenced through the offering and acknowledgement of opinions. May include the offering of new information to the group through the sharing of individual experiences or knowledge; or from a new analysis of a concept being discussed.*

- Dimension 5: Overlapping talk – supportive

*Evidenced through supportive overlapping talk, may manifest as one participant either attempting to complete a sentence for another participant or simultaneous vocalisations of on-topic concepts.*

- Dimension 6: Distribution of cognition

*Evidenced through the referral to or reuse of concepts, language, terminology or opinions previously offered by other participants within the group.*

- I produced worksheets for the workshop participants containing the descriptors, some relatable examples and a 1-10 rating scale.
- Participants watched the first video clip and were then asked to give subjective ratings on their sets of scales; participants then watched the clip for a second time, modifying their ratings 'on the fly' as appropriate.

- This process was repeated for the second clip.

Collated ratings for each of the descriptors for each video clip are tabulated as Table 11.

Table 11: Collated ratings for the 13 raters for each of the two video clips

Number of raters giving this score (out of 10) to the associated dimension:	1	2	3	4	5	6	7	8	9	10
Video clip 1										
Dimension 1	0	0	0	0	1	1	5	6	0	0
Dimension 2	0	0	0	0	0	0	3	4	6	0
Dimension 3	0	0	1	0	2	4	4	2	0	0
Dimension 4	0	0	0	1	0	3	6	3	0	0
Dimension 5	0	0	1	1	3	5	1	2	0	0
Dimension 6	0	0	0	1	2	2	6	2	0	0
Video clip 2										
Dimension 1	0	1	0	2	2	2	5	1	0	0
Dimension 2	0	0	0	2	2	1	4	2	2	0
Dimension 3	0	0	0	0	4	2	1	2	2	2
Dimension 4	0	0	0	0	0	1	3	7	2	0
Dimension 5	0	0	0	1	7	1	3	1	0	0
Dimension 6	0	0	0	2	3	3	3	2	0	0

The participant cohort comprised 13 members of academic staff across a range of disciplines, from a range of institutions. For the method to be of use in my context, there would need to be good inter-rater agreement for at least some of the descriptors. I chose to calculate the Free-Marginal Multirater Kappa (Multirater  $\kappa_{\text{free}}$ ) value for each of the descriptors as a test for inter-rater agreement<sup>3</sup>. Free-Marginal Multirater Kappa (Randolph, 2005) is an alternative to Fleiss' multirater kappa (1971); like Fleiss' index it is a chance-adjusted measure of inter-rater agreement. Unlike Fleiss' index it is suitable

<sup>3</sup> Calculated using an online Kappa calculator at: <http://justusrandolph.net/kappa/>



for free-marginal distributions – that is to say when raters are not acting on prior knowledge of any fixed relationship between the rating they give and the number of times they can give that rating – i.e. there is no *a priori* expectation of a pattern of distribution.

To calculate Multirater  $\kappa_{\text{free}}$  I used the ratings of each of the clips as separate ‘cases’ whereby any clustering of rate distributions *within* the (case) data sets relating to each video had a positive effect on the Multirater  $\kappa_{\text{free}}$  value even if the ‘zone of clustering’ was at a different point in the rating scale for each clip. The resultant combined Multirater  $\kappa_{\text{free}}$  value for each dimension is given as Table 12. Higher Multirater  $\kappa_{\text{free}}$  values represent higher chance-adjusted inter-rater agreement; -1.0 represents perfect disagreement, 0 represents an agreement level consistent with chance and +1.0 represents perfect agreement.

Table 12: Multirater  $\kappa_{Free}$  for Dimensions 1-6

Dimension	Multirater $\kappa_{free}$
1	0.160
2	0.131
3	0.060
4	0.217
5	0.160
6	0.095

Although Kappa statistics are to be used with caution, I justify its use here by making no attempt to use the figures across different cohorts of raters; rather I used it to ascertain whether, for *these* video clips, with *these* dimensions with *this* cohort of raters, evidence of inter-rater agreement can be found. Such a finding may have persuaded me to investigate the method further, but that was not the finding. Landis and Koch (1977) tentatively suggest that values  $<0.20$  should be considered to represent 'poor agreement' and that values of  $0.21-0.40$  should be considered to represent 'slight agreement'. Given that only one of the dimensions had a Multirater  $\kappa_{free} > 0.2$ , I did not pursue this method. I do however have to acknowledge that the time I invested in working with the raters to establish good shared understanding of the dimensions was short and that greater investment in developing such shared understanding prior to embarking on the rating phase of the method may well lead to better results.

## 5.5: Comparing collaborative with individual study

### Question 6:

## Does collaborative study of cases confer a learning advantage over individual (lone) study of the same cases?

As mentioned earlier in the chapter, I was interested to find out how students who studied the case-based learning units individually, not as part of a peer group, performed when compared to students who studied the cases as a collaborative triad. Table 13 re-presents the data from Table 5 but with some additional entries for those students who studied the chest x-ray interpretation set of cases individually.

Table 13: Additional data, students 7-11 studied individually

Mode of study		Correct diagnosis	Pre-learning activity test score	Post-learning activity test score	<u>Additional questions</u> performance score (post-learning)
Collaborative Group 1	Student 1	40%	20%	75%	10%
	Student 2	40%	20%	95%	30%
	Student 3	40%	25%	80%	20%
Collaborative Group 2	Student 4	100%	10%	40%	0%
	Student 5	100%	0%	75%	0%
	Student 6	100%	25%	90%	40%
Individual students	Student 7	40%	15%	80%	40%
	Student 8	100%	0%	90%	0%
	Student 9	60%	20%	60%	60%
	Student 10	40%	5%	80%	0%
	Student 11	100%	10%	60%	20%

Although no performance enhancement as a consequence of collaborative study was found, there remains an advantage in making such case-based units of study available to students as a collaborative learning opportunity. When asked whether they would have undertaken the learning opportunity if it

were offered as an individual study activity (Table 4, Section 4.3.3 of Chapter 4), only 53% of students answered 'Yes'. Given the high learning gains that I have demonstrated can emerge from such a model of case-based teaching (Table 13), it would seem sensible to ensure that such learning opportunities are offered in such a way that students will engage with them. I would contend therefore that a collaborative model of engagement remains the best strategy to achieve engagement across the whole student group and to ensure the greatest number of students benefit from this way of teaching.

## **5.6: Summary of findings of context-case 2 and ramifications for practice**

Students, when working in triads, make aspects of their cognition visible through their discourse. This, when captured with video, offers the researcher access to a rich seam of data to investigate learning processes. In my context, I sought to ascertain whether or not students were actually collaborating when they were working in groups and whether any such collaboration conferred a learning advantage upon those working in groups when compared to those working alone.

Although I found good evidence of collaboration through the application of a bespoke schema drawn from other authors (Hmelo-Silver and Chernobilsky (2004); Dillenbourg and Trauma (2006); Pea (2003); and Stahl (2005)), I found no evidence that this collaborative activity offered any learning advantage over individual study of identical resources within the parameters

of how I measured learning. However, as introduced in Chapter 4 (Table 4), the likelihood of students engaging with these sorts of case-based units of study is much greater when offered as a collaborative classroom activity than as an individual self-study activity.

### **5.7: Adjunct narrative for context-case 2:**

My learning has of course been shaped by having directly undertaken research activities but it has also developed through adjunct engagement with communities of practice; particularly influential has been my engagement with the International Society of the Learning Sciences.

As explored in Chapters 2 and 3, my professional development (my learning) has been located within a particular multifaceted context; part of this context includes my doctoral study. As part of the EdD Learning and Learning Contexts programme, we (the students) were invited to think about how knowledge is constructed and how it is socially mediated – especially through language. This opportunity to explore such thinking overlapped with my early engagement with the International Society of the Learning Sciences; particularly through my participation in ICLS 2004 (International Conference of the Learning Sciences 2004) and CSCL 2005 (Computer Supported Collaborative Learning 2005).

I became a member of ISLS in 2004 for two (linked) reasons. Firstly the advertising materials for ICLS 2004 conveyed a sense of a conference (and community) that appeared potentially useful to me as I began to plan aspects of the research described in this thesis – mainly context-cases 1 and 2. Secondly as my (University) work responsibilities began to include leadership

of learning and teaching innovation, I developed an aspiration to access a research community with a focus on learning. Thus at the very point when, through my doctoral study, I was given many opportunities to think about learning and how it was constructed, I was drawing some answers from the Learning Sciences community.

In Chapter 3 I contended that an academic working in higher education might belong to more than one community of practice, I cited Shulman's (2000) idea of two communities – 'discipline-based' and 'professional educator' (the latter equating to what I have referred to as a community of academic practice). However, when the discipline *is* academic practice (or the study thereof) the two communities are necessarily conflated; broadly though, these overlapping communities can be seen as somewhat analogous to a community of 'Excellent Teachers' (see Figure 8a in Section 3.4 of Chapter 3) and 'Pedagogic Researcher' (see Figure 8b in Section 3.4 of Chapter 3). So for me, much of the research literature I was accessing through the 'publishing sub-community' (see Figures 7 to 10 in Section 3.4 of Chapter 3) and indeed the conversations I was having with the 'conversational community' (see same figures) were a product of the community of the International Society of the Learning Sciences.

### **5.7.1: Engaging with the Community of the International Society of the Learning Sciences**

In 2004 I joined the International Society of the Learning Sciences and attended the conference in Santa Monica where I began to be exposed to some facets of the collective knowledge of the community. To begin with, the

specialised language used by the participants was bewildering but I soon became aware that my intended model of teaching (as described in context-cases 1 and 2) might, in the terms used by the community, be referred to as 'co-located computer supported collaborative learning'.

It was at this conference where I began to form the view that video methods might represent an attractive methodological candidate for pursuing an emerging research interest; to find out whether or not my co-located computer supported collaborative learning model would offer learning advantages over similar *Moodle*-based scenarios offered for individual study. Additionally, attending the International Conference of the Learning Sciences (ICLS) 2004 served to catalyse my own fledgling appropriation of the specialised language of the Learning Sciences community and so facilitated an enhancement in my ability to identify and use a body of research literature that was very well aligned with my research need.

Through attendance at the Computer Supported Collaborative Learning (CSCL) conference in Taipei in 2005, ICLS 2006 in Bloomington and the 2007 CSCL conference in New Brunswick I enhanced my exposure to video methods to study group collaboration. Pre-conference workshops that I attended in Taipei and in New Brunswick were particularly influential in getting me to explore the potential of alternative video analysis paradigms, such as using actual 'source' video *as data* rather than adopting a transcription, coding and counting method by default (see Section 5.4.2, this chapter).

However, the most profound learning opportunities came from my exposure to the specialist language of the discipline and my observations of the

community as it interacted; it was clear that there were key agents within the community – those from whom panel chairs always took questions, they almost always appeared on lists of citations; and in the more social sessions they could be found to be the centre of attention.

I became interested in such community dynamics and how the ‘status’ of these prominent individuals impacted on the ways in which community knowledge was constructed. This thinking led me to develop the model described below as my second adjunct narrative.

On a more pragmatic level, my engagement with this community at that time facilitated my appropriation of the specialist language of the domain and allowed me to create a list of key workers in the field, allowing me to navigate far more effectively much of the literature that would come to shape my thinking and my research activity.

### **5.7.2: Specialist language, communities and agency**

My reflections on the appropriation of the specialist language of a community of practice gave me cause to explore further, leading me to develop a conceptual model that allowed me to structure my thoughts and to make sense of how appropriation of specialised language underpins successful (and ultimately influential) participation in a community of (academic) practice. My model led to the development of three key concepts:

1. Nucleation Paradigms – ideas/theories expounded by participants within a community that are compelling enough (through evidence and agency) for other community participants to place them central to their own thinking.



2. Participation Vectors – the direction (and speed) of ‘travel’ (in terms of meaning-making) of community members in relation to the progressive incorporation of (available) ideas/theories.
3. Linguistic Shell – the concept-vocabulary that is necessary to appropriate before a community participant can engage fully with community discourse and make sense of new/competing ideas. This notion of a ‘linguistic shell’ is similar to the concept of legitimate peripheral participation introduced by Lave and Wenger (1991). To explain the concept the authors state:

*“To begin with, newcomers’ legitimate peripherality provides them with more than an ‘observational’ lookout post; it crucially involves participation as a way of learning – of both absorbing and being absorbed in - the ‘culture of practice’.” (p. 95)*

My concept of the ‘linguistic shell’ differs from Lave and Wenger’s concept of ‘legitimate peripheral participation’ in two ways. Firstly, it focuses exclusively on appropriation of specialised language – i.e. it is a pre-requisite for being absorbed in a ‘culture of practice’ and secondly it defines an educational imperative – I argue that the role of the educator is to facilitate learner transition of the linguistic shell.

The model proposes that communities are arranged around central foci and the ideas represented within the community’s central core are constructed and advocated by an influential subset of the wide community. The model provided me with a cognitive framework to consider:

- How learners may enter, interact with and ultimately influence a community of (academic) practice;
- The dynamic nature of the community and its ability to refocus on new or modified paradigms as new evidence and ideas are introduced to the community;
- The implications this has for academics who teach in higher education and specifically as they relate to their role as designers of learning opportunities.

These descriptions are made with reference to the range of interactions that occur between members of the community and how these interactions lead to a hierarchical arrangement of separate community spaces. The position of paradigms within the hierarchy is shown to be dependent upon the position and participation vector of community members.

It is further proposed that the positions of these paradigms within the hierarchical framework are not static but are dependent upon the dynamic collective cognition of a conversant subset of the wide community, while describing how those members outside this subset but within the wide community must undergo a process of linguistic initiation before they are able to contribute to this collective cognition.

### 5.7.3: The role of education in society

Education can be viewed as the process by which we facilitate knowledge construction in others or have knowledge construction facilitated in us. This statement, though superficially simple, suggests a hierarchy of understanding, a cognitive gradient between the 'teacher' and the 'learner'. This view of education is one of many possible definitions and philosophies. Harris (1999: p. 1) labours this point offering us many different viewpoints on the aims of education varying from *"to lead out the individual nature in each man and woman to its true fullness"* to *"to inculcate the materialist outlook and communist mentality"*. For the purposes of this 'adjunct narrative' I'm choosing to define education by the effect it has on our society, I am not alone in being an exponent of this viewpoint, Barrow (1999: p.16) comments that *"...we might have extrinsic reasons for educating people (such as to the serve the economy)"*; Standish (1999: p. 35) suggests that an aim of education might be *"...to serve the needs of society"*. These statements as to the purpose of education resonate well with the concept of professionalism discussed in Chapter 3 and how professions (and thus professional education and development) articulate with the wider world (See Sections 3.2 and 3.4.2 in Chapter 3).

What is our motivation, both individually and collectively as a society, for engaging ourselves in the educational process? As a society we need plumbers, doctors, train drivers and perhaps even astrologers but we are not born with such skills, we learn them – society needs such skills and our

education system coupled with a differential monetary reward system attempts to secure a supply of suitably skilled individuals to carry out these necessary activities.

Education can therefore be seen as one of the mechanisms for transforming a person into a citizen – an active participant in a symbiotic community; a mutual dependent of peers. Winch (1999: pp. 75-76) supports this view stating *“Not everyone can do everything and everyone can only do a limited number of things really well. Because of these constraints, public education systems have to find a way of ensuring that common knowledge, assumptions and practices, as well as a huge variety of specialised occupations, are present in society”*.

The ‘common knowledge, assumptions and practices’ referred to by Winch (*ibid.*) is an important concept since it teases out the dual utility of citizenship; pragmatically we are able to fulfil a societal role than enables us to generate the income required to live, but on a more fundamental level, the role we play allows us to articulate with society and thus frames our social space as a human being. Wenger (1999: p. 4) supports this, referring to knowing as *“a matter of participating in the pursuit of such enterprises, that is, of active engagement in the world.”*

Pursuing the pragmatic role of citizenship, do we educate our progeny with a view to merely replacing the retired and the dead or do we expect something more? Centuries of societal, artistic, political, and technological progression

illustrate that each generation does more than merely replicate the tasks of their mentors and ancestors; each generation expands collective knowledge through the novel construction of ideas, theories and skills, advancing the frontiers of understanding and its application. This process implies that education does not simply facilitate the learning of existing knowledge by others but equips students (or any other learner for that matter) with the skills to discover and create *new* knowledge. Standish (1999: p. 35) in discussing multiple aims of education gives one of these as *“to pass on and **develop** those ways of knowing and understanding which are the common heritage”* [bold text is my emphasis]; Wenger (1999: pp. 263-264) refers to education as *“an investment of a community in its own future, not as a reproduction of the past through cultural transmission, but as the formation of new identities that can take its history of learning forward”*.

I understand that the processes under discussion here may only apply to highly developed societies; those communities that are marginalised without the resources or freedom to engage in pure academic discourse, may indeed educate their progeny with the intention of providing the continuation of vital community practices, skills and vocations. The advancement of the leading edge of human knowledge and its application is utterly dependent upon a number of societal prerequisites that are tied to the resources available to any community; the extent to which the model proposed in this ‘adjunct narrative’, as it applies to any given academic societal system, is dependent upon the degree to which community members are free to engage in free-form academic discourse.

Where societal structure permits and facilitates the construction of new knowledge, it is imperative that this is disseminated so that new ideas are able to influence and catalyse the evolution of society. If we consider this process to be the vehicle of human societal advancement, one could argue that education is its engine. To take that metaphor forwards, what are the mechanics of this engine's function? What aspects of the educational system provide the power for the forward motion that facilitates human societal advancement? It may be argued that this power is produced through the creation and application of novel ideas or paradigms and that these paradigms are constructed within, disseminated through and communicated beyond specialised communities of academic and professional practice. Where free-form activity of academic endeavour and communication is allowed to occur, communities of academic practice develop. These communities are defined by the shared activity of their members and are characterised by the specialised language they employ, this view is shared by Bizzell (1992: p113) who states: "*academic discourse **constitutes the academic community***" [emphasis (bold) in original]. Such specialised language is used within the context of an accepted and *expected* body of knowledge and as such constitutes a prerequisite to full community participation.

This use of specialised language has the potential to cause problems for the efficient function of the community and more particularly for those initiate members who are only just beginning to grasp the concepts encoded within

the language that is used. Bourdieu *et al.* (1996: p. 5) refer to this specialised language as code and discuss the difficulty ‘apprentices’ have in making sense of it: ‘The code cannot be learnt except through a progressively less unskilled decoding of messages’. This seems to imply that initiates are expected to learn this language in an osmotic way, as we might learn any second language. I propose that we might consider that one of the primary functions of an education system (particularly in the higher education / tertiary sector) should be the facilitation of the ability of these ‘apprentices’ to comprehend and use the specialised language of their prospective community of practice so as to equip them with the primary prerequisite skill necessary for full community participation. Wenger (1999), in discussing all communities of practice, highlights the interdependence of the community and its members:

*“For **individuals**, it means that learning is an issue of engaging in and contributing to the practices of their communities.*

*For **communities**, it means that learning is an issue of refining their practice and ensuring new generations of members”. (p.7)*

[Emphases (bold) in original]

#### **5.7.4: Nucleation paradigms and participation vectors; a new model to describe the hierarchical and dynamic nature of communities of academic practice.**

For the reasons I described at the beginning of this section (Section 5.7) I had the opportunity to reflect on my participation within the community of the

International Society of the Learning Sciences and to articulate my experience with my doctoral study. As a consequence of reflecting on my community participation (and observations) within the context of the opportunity for 'reflexive analysis' (see Section 2.2.5.3 of Chapter 2) I developed a new model as a framework to help me think about and explain what I had experienced and observed through my participation.

My model that describes how community members form separate spaces within any given community of practice and describe how these spaces define and are defined by the dissemination activities of members as mediated by academic discourse. These separate spaces are hierarchical and represent:

- ***The wide community*** – all community members.
- ***The initiate community*** – new members of the community who are not fully conversant in the specialised language of the conversant community.
- ***The conversant community*** – those community members who successfully appropriated the specialised language of the community and may (or may not) engage in unpublished academic discourse.
- ***The published community*** – those community members who have engaged in formal discourse through publication.
- ***The influential community*** – those members who have engaged in formal discourse through publication and whose ideas demonstrate influence on others through affirmative citation.

The relationship of these spaces is shown graphically as Figure 22.



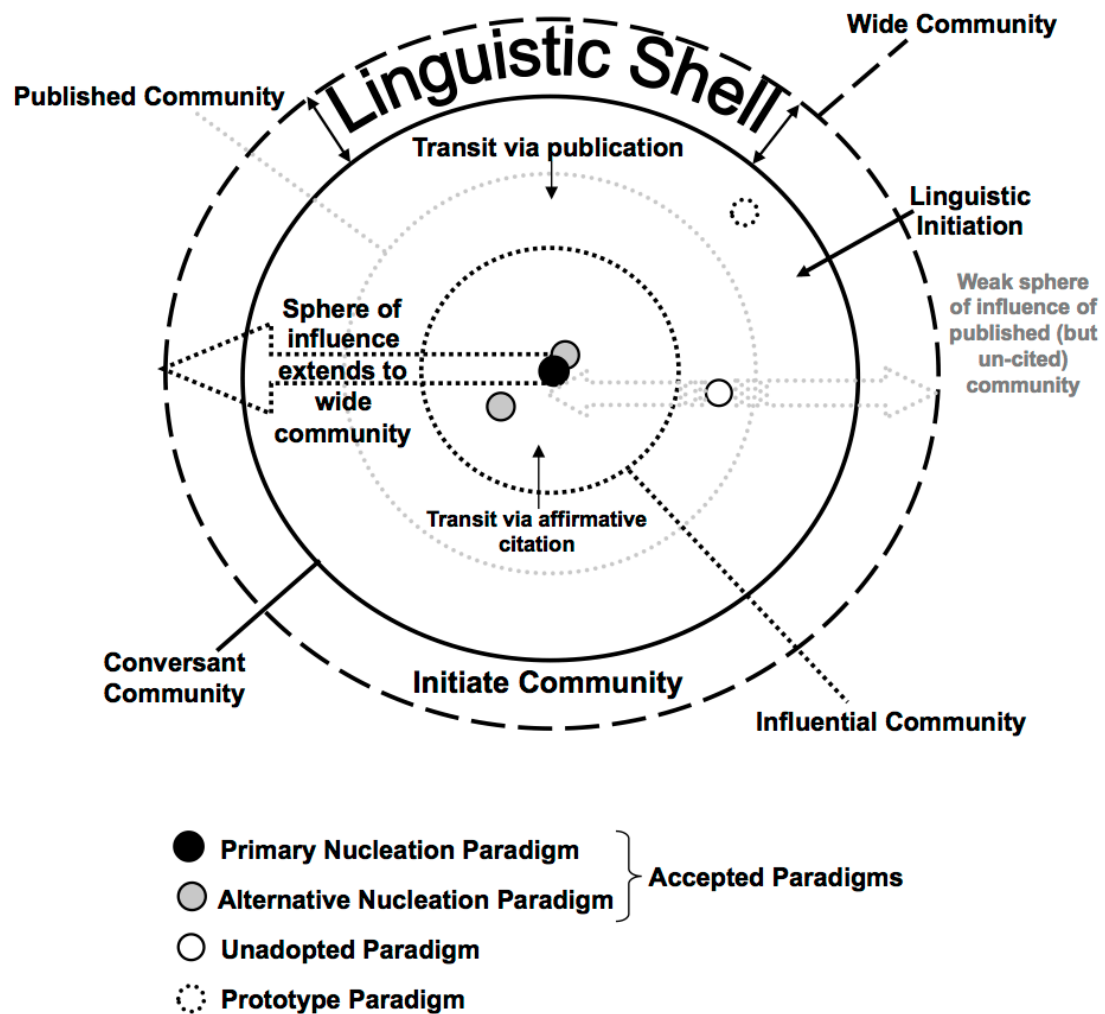


Figure 22: Nucleation Paradigms model – see below for explanatory orientation

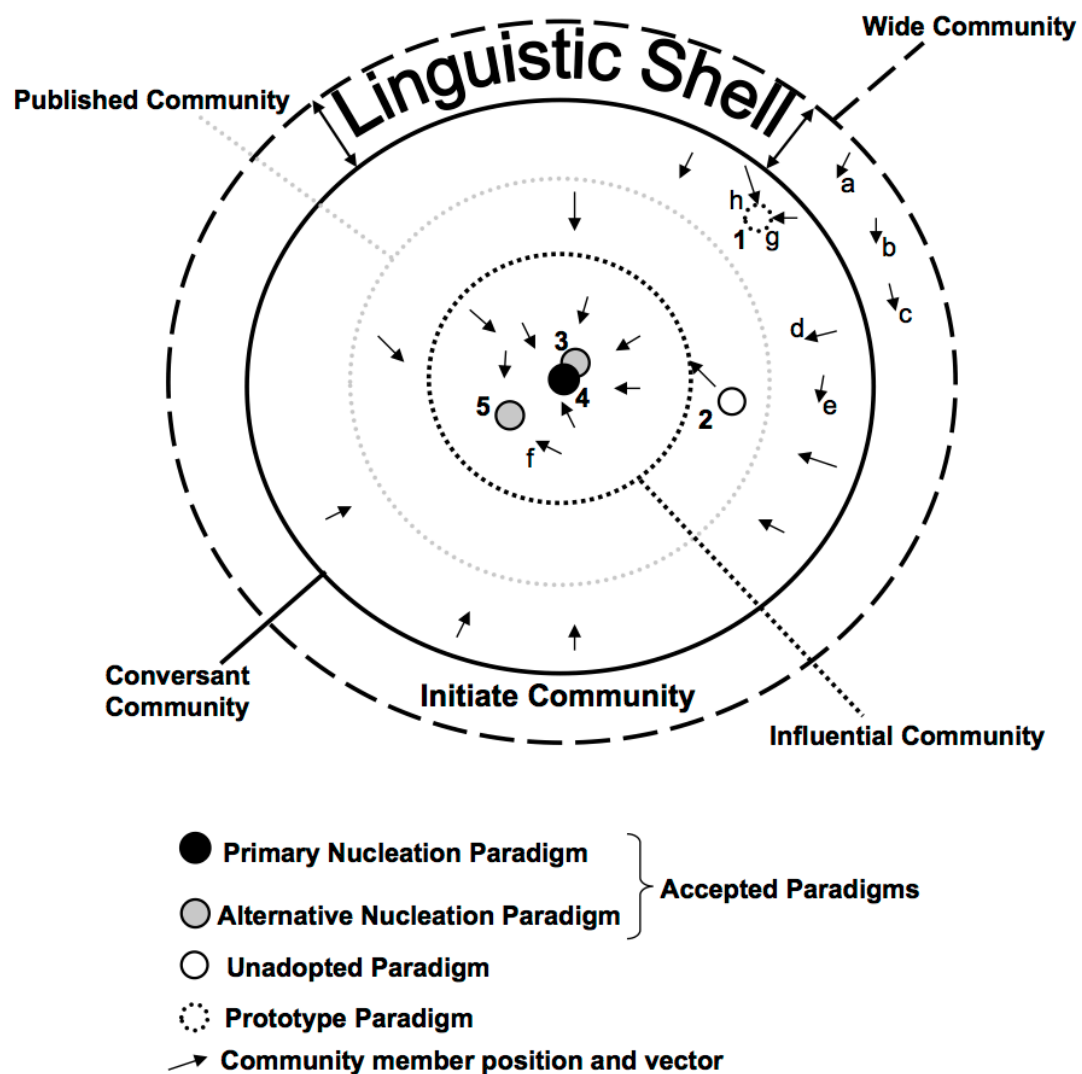
The community space, through the activity of its members, develops paradigms - sets of ideas and belief structures that have the potential to act as nucleation centres around which some community members may aggregate and others may orientate towards. [The concept of ‘nucleation’ is borrowed from the physical sciences and refers to the phenomenon whereby a small particle acts as the focus for aggregation - such as the growth of a crystal or the formation of a raindrop.]

The paradigms that become accepted by large sections of the community are conferred the status of nucleation paradigms and are thus located within the

influential community space. They have an associated aggregation of influential community members who advocate and support the ideas as they are represented by the paradigm.

A sphere of influence extends from such paradigms through the whole community space facilitated by the publications of advocatory influential community members. This reinforcement through publication leads to members of the whole academic community to orientate themselves towards this point of view. This orientation defines the direction of travel of a member within the community space and thus dictates their participation vector within it (see Figure 23). The greater the number of community members orientated towards a particular paradigm, the closer that paradigm is located to the centre of the community. The most centric paradigms are known as 'primary nucleation paradigms' and can be regarded as accepted viewpoints.

Alternative academic positions are known as 'alternative nucleation paradigms' and are situated at a distance from the centre of the community system but nonetheless may be influential. The number of advocate members who are orientated towards this paradigm determines this distance from the centre. Two other types of paradigm are also proposed within this model. The 'prototype paradigm', which represents an unpublished idea or academic position, and the 'unadopted paradigm' – which, though published, has not been affirmatively cited in publications authored by other members of the academic community.



Example paradigms are labelled by number

Example community members are labelled by letter

Figure 23: Fully populated Nucleation Paradigm model

A key feature of this model is the concept of the 'linguistic shell'; this is what separates any community of practice from the wider macro-society. The depth of the linguistic shell is directly proportional to the conceptual complexity of the community's subject matter and thus represents the volume of information encoded within the specialised language used in discourse between its members. Initiates wishing to engage with the discourse generated by the

conversant community must first learn the specialised language and the concepts that are encoded within the terminology. I refer to this process as 'linguistic initiation' and may be interpreted as being a purpose of education. It is worth reflecting on this point since I have argued that the role of education in a developed society is the construction and dissemination of new knowledge. Communities of (academic) practice as described here have a function to do just that. Therefore as educators, it could be argued that our primary task should be to educate our students to a level whereby they have become conversant members of the community, thus fulfilling their societal function as agents of new knowledge construction – or at least to have ability to do so.

As described above, these spaces are populated by individuals whose placement within the system is dependent upon their history of community activity. The concept of history is important, having a profound effect on the way the community system functions by influencing the dynamics of discourse and indeed the very nature of the information that is disseminated to the wide community and to the macro-society. This concept needs further explanation and I shall give an account of a possible scenario by way of illustration. Imagine a paradigm that has been created by a conversant community member, we'll call him Dr X. He constructs a new idea or theory that is shown as paradigm 5 in the system diagram shown as Figure 24.

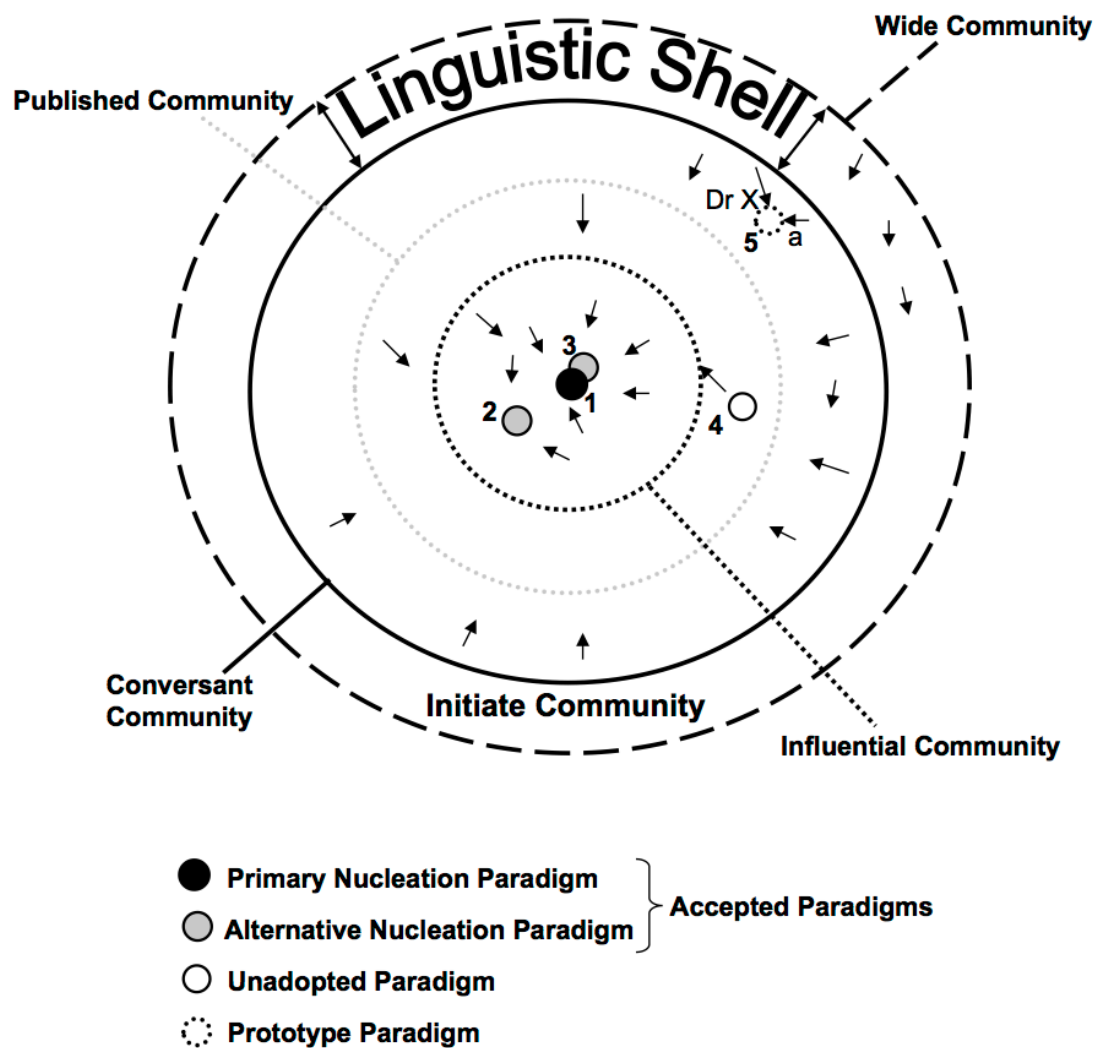


Figure 24: Modelled position of Dr X's prototype paradigm within the (wide) community of practice

Dr X's idea at this point in time is unpublished and is therefore is represented as a 'prototype paradigm' within the conversant community space, outside of the sub-space of the published community. It is important to appreciate that Dr X's idea may still have a degree of local influence despite being unpublished, since his immediate colleagues and those individuals who engage in informal discussion with Dr X through his collegial network may be aware of his work. One such advocate is his colleague 'a'.

Dr X writes up his ideas and proffers it for publication – it is accepted, as shown in Figure 25.

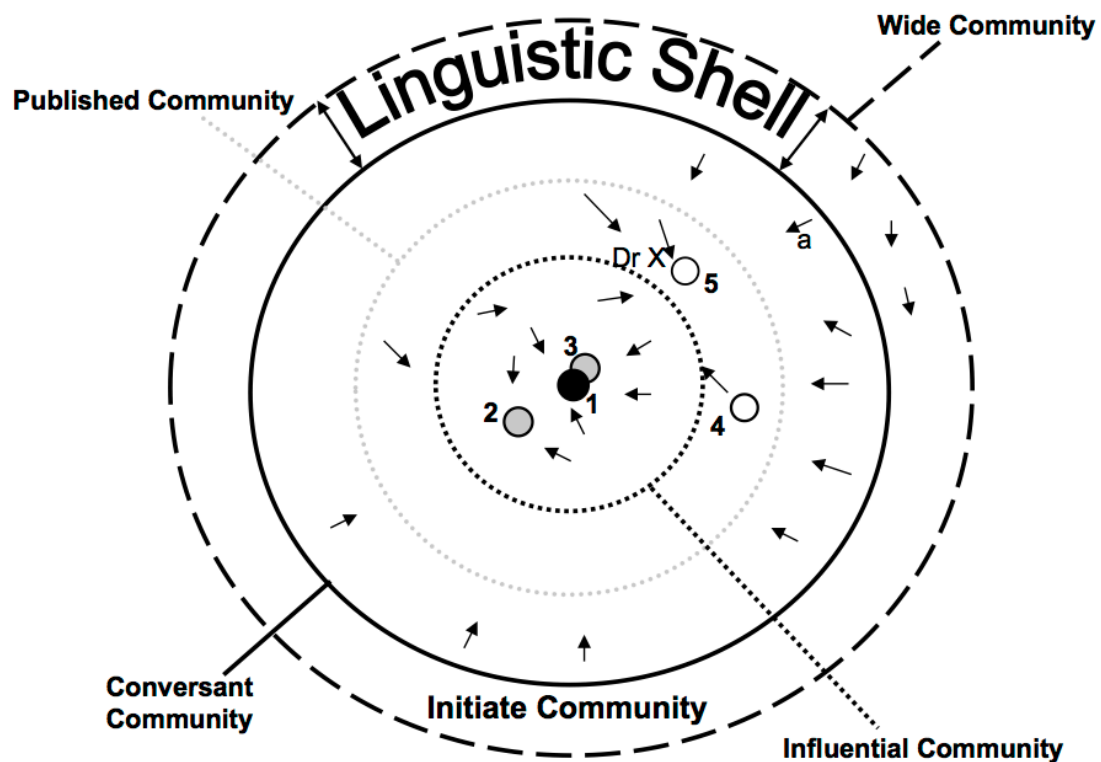


Figure 25: Transition of Dr X into the published community and the elevation of his idea from a 'prototype paradigm' to an 'unadopted paradigm'.

Dr X and his idea are now located within the published sub-space of the conversant community and his idea moves from being a 'prototype paradigm' to an 'unadopted paradigm'; although some members of the community are aware of Dr X's idea, it is yet to be adopted by the community. An interesting point to note is that some of the participation vectors of other members (both inside and outside of the influential community) have changed their orientation as they read his paper – they find his idea and his underlying argument persuasive. Dr X is beginning to influence the wide community. Dr X's colleague 'a' retains his participation vector towards (Dr X's) Paradigm 5 but

remains within the unpublished sub-space of the conversant community, since he has yet to disclose his advocacy through publication.

Dr X's work is then affirmatively cited by other authors and Paradigm 5 (and Dr X) transits into the influential community. Through citation his work has demonstrated explicit formal influence on the community. As such advocacy and consequent dissemination of his work continues, so a greater number of members change their participation vector towards Paradigm 5, as shown in Figure 26.

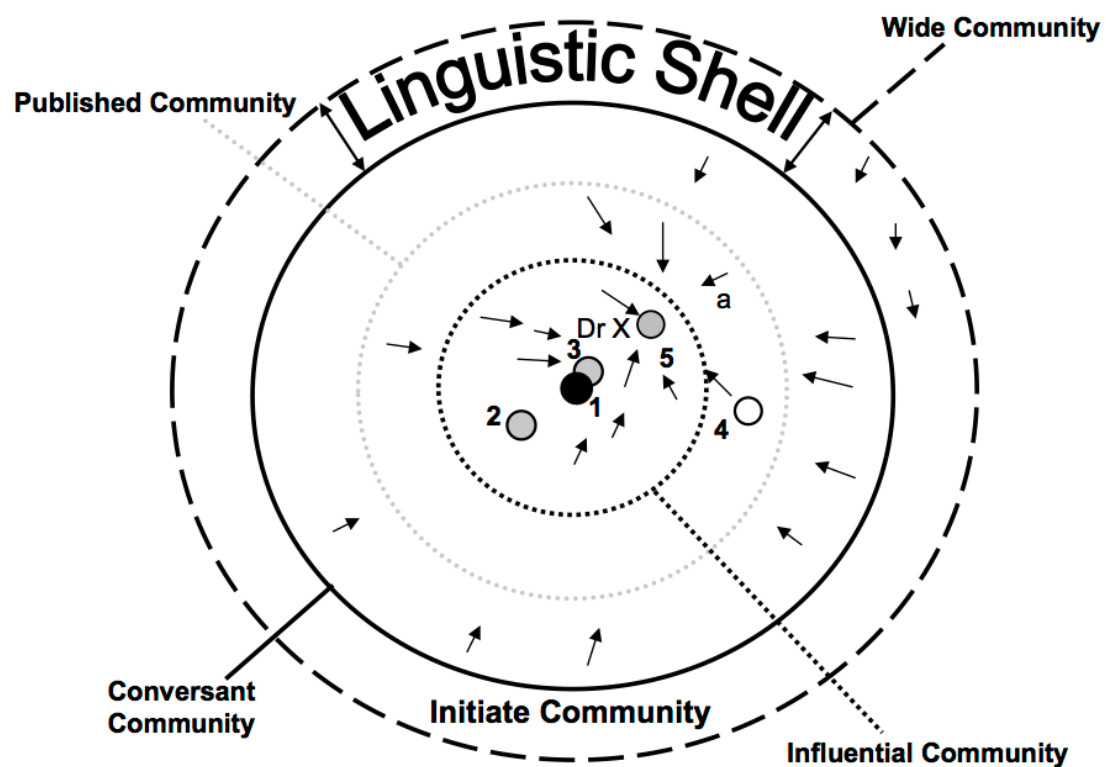


Figure 26: Transition of Dr X into the influential community and the elevation of his idea from an 'unadopted paradigm' to an 'alternative paradigm'.

Meanwhile, Dr X's colleague 'a' has published a paper that advocates the work of Dr X and 'a' moves into the published sub-space. Dr X's paradigm is now truly influential and is thus considered as an alternative paradigm. As

more and more of the community members change their participation vector towards Dr X's idea, the 'bulk vector' of the influential community begins to favour Paradigm 5 over other paradigms and the community begins to realign, aggregating around this new idea and the previously primary nucleation paradigm (Paradigm 1) is relegated to the status of alternative paradigm as shown in Figure 27. No paradigm has primacy within the community.

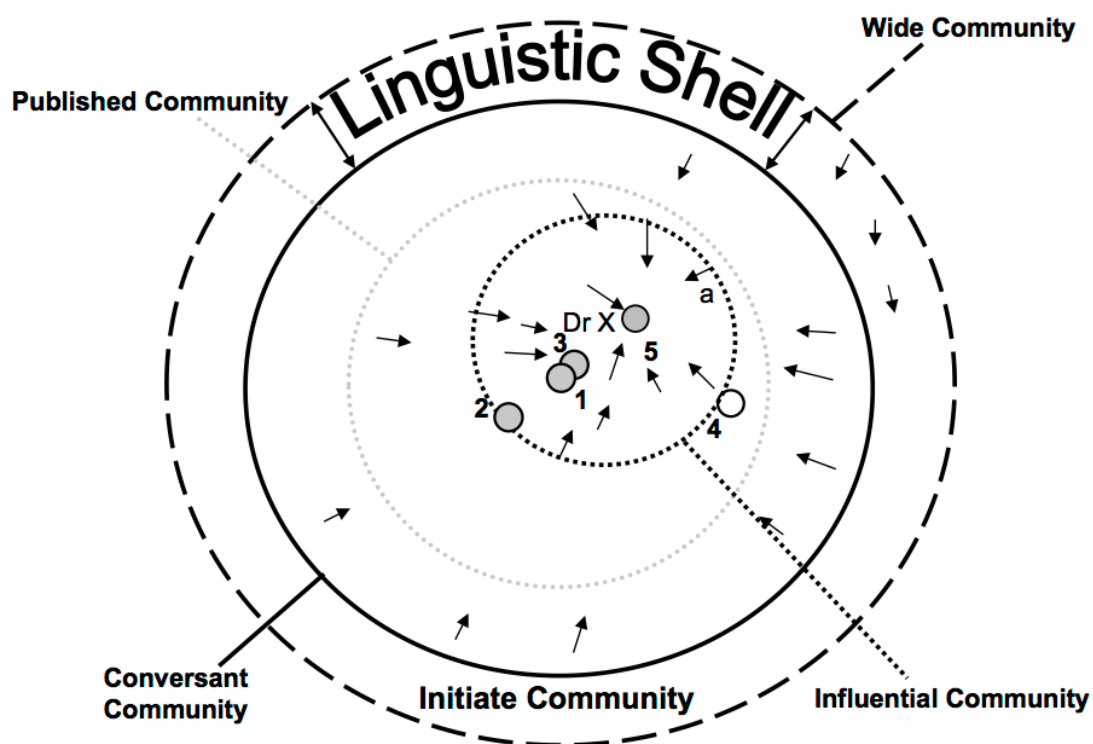


Figure 27: The influential community becomes more centred upon Dr X and Paradigm 1 (the extant primary nucleation paradigm) has lost its status.

Now that the influential 'bulk vector' has changed from being orientated towards Paradigm 1 to Paradigm 5, the position of the influential community begins to shift. As this Paradigm 5 enjoys greater scrutiny and study, so the numbers of papers written that orientate toward this academic position increases and the published sub-space of the conversant community begins



to align with this academic position, mirroring the movement already undertaken by the influential community but with a time lag dependent upon the publication cycle rate as shown by Figure 28.

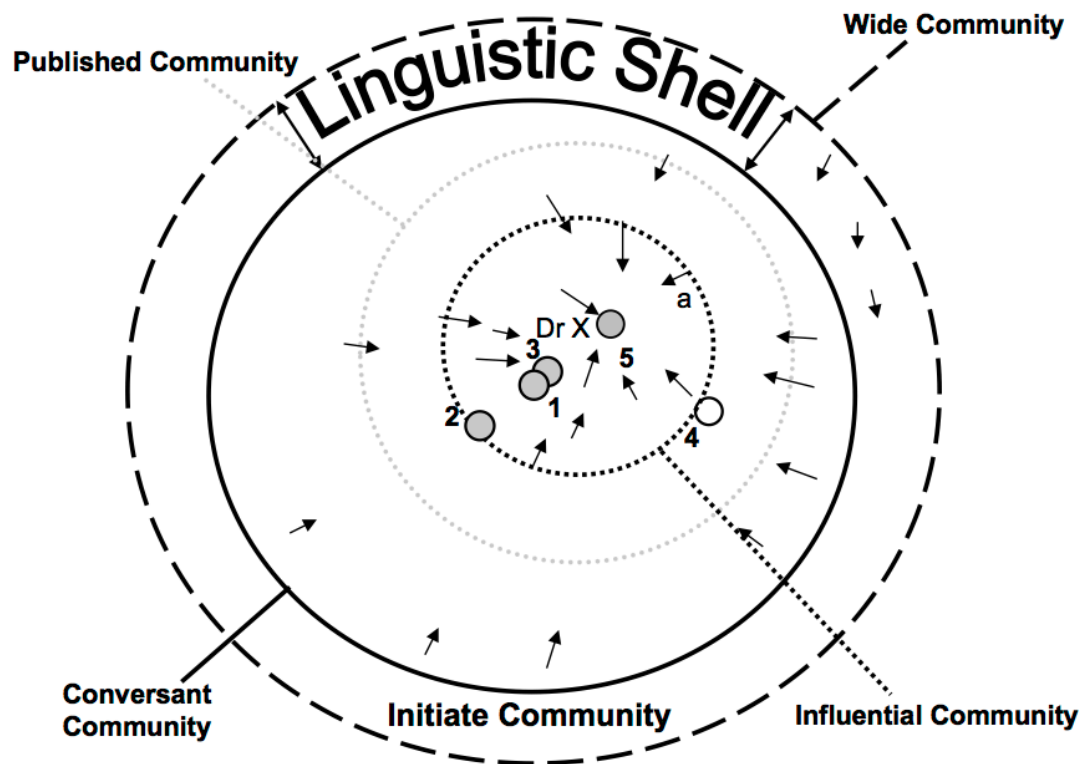


Figure 28: As the influence of Dr X and Paradigm 5 continues to influence the community, the published community (through the balance of publications that place Paradigm 5 at their centre) moves to become centred around Dr X and Paradigm 5.

As the body of published work that advocates or articulates with Paradigm 5 increases (including those that cite the work of colleague 'a'), so it becomes the primary nucleation paradigm. Since this is now the accepted view, it defines what needs to be taught to new community members in order to enable them to fully understand the discourse of the conversant community. The linguistic shell therefore evolves, encoding and incorporating these new concepts and thereby realigning itself to the influential and published spaces. It is interesting to note that the movement of the community in the 'direction' of

Dr X's idea has had the effect of rejecting Paradigm 2 from the influential community. This paradigm now holds the status of an unadopted paradigm since the ideas it represents are incompatible with the accepted ideas of Dr. X's Paradigm 5. See Figure 29.

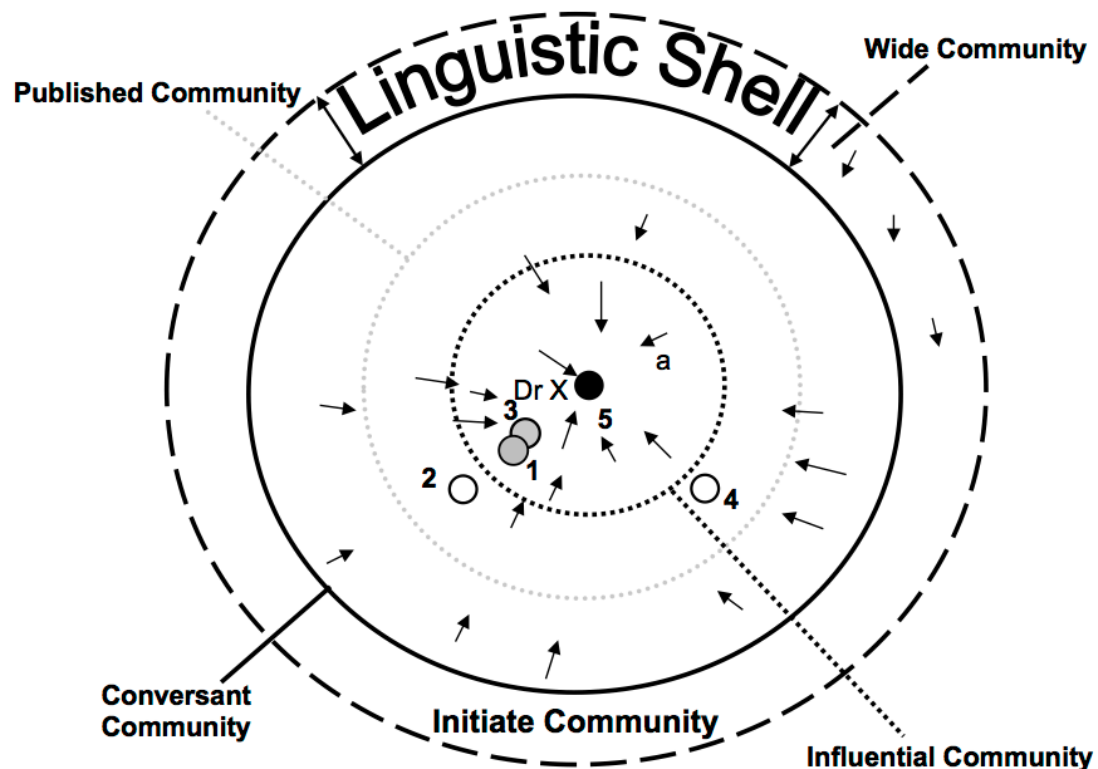


Figure 29: Paradigm 5 is now central to the 'group cognition' of the wide community. The 'linguistic shell' has evolved to incorporate new concepts and associated language - it too is now centred upon Paradigm 5, and by association, Dr X.

As can be seen the linguistic shell, which defines the learning that as educators we must facilitate is directly influenced by the academic position of the influential and the published sub-space of the 'conversant community'. It can be further seen that the academic position is somewhat democratic since each member of the 'conversant community' chooses their own participation vector. It is the sum of these vectors that defines which academic position becomes the 'primary nucleation paradigm' and thus the concepts to be

encoded within the specialised language of the community. These dynamics therefore define what is to be learnt by the initiate community in order that they may transit the 'linguistic shell' and participate within the 'conversant community'. The concepts encoded within the specialised language of the 'linguistic shell' define the educational challenge to be met by those who teach; our job is to facilitate the transition of members of the 'initiate community' into the 'conversant community' so that they are able to draw on, and subsequently contribute to, the knowledge within.

Earlier in the paper I introduced a concept of history of community activity and stated that it had a profound effect on the dynamics of the system. This is best illustrated by thinking about how Dr X's next big idea will be received by the community. He is now a very influential member of the community; the founder of the Primary Nucleation Paradigm and his work is very quickly disseminated throughout the community. Since the history of his thinking is already encoded within the discourse of the academic community, there exists a degree of distributed knowledge and cognition – any concept Dr X brings to the community is likely to build upon his previous thinking. Even a new idea is born from his existing cognition, which is to a degree already shared by the community. Therefore, there exists a pre-contextualised audience for his ideas and the possibility of ready acceptance. It can be argued therefore, that although the paradigms at the centre of the community are positioned there democratically, through the participation vectors of all community members, those who are most closely aligned with the influential nucleation paradigms have an advantage in disseminating future work. It may also be argued that

this academic power is a consequence of simple professional credibility, but I argue that the more important process may be the close alignment these influential members enjoy to the distributed cognition of the community. This alignment exists because they are the architects of this distributed cognition because they have, in fact, *distributed* their cognition through their previous contribution to the academic discourse of the community.

Zariski (1997: p. 1) offers an opinion that any shared paradigm infers distributed cognition since any knowledge can only ever be created by the individual and thus represents a converted state of mind: *“Knowledge therefore is socially mediated through language and individually constructed. It therefore cannot be transmitted but must be recreated by individual minds.”* If this is true then the architects of distributed knowledge may indeed be preaching to the converted when publishing their further thoughts since by virtue of shared knowledge, the mind set of their audience mirrors their own.

#### **5.7.5: Ramifications of this model to the design of learning systems in higher education**

By discussing the concepts introduced in this proposed model of communities of academic practice I have tried to substantiate the premise that the primary role of education is to facilitate learners' transition through the 'linguistic shell' and have attempted to demonstrate how this occurs through a process of linguistic initiation - a facilitated decoding of the specialised language of the community so as to reveal and to integrate into cognition the concepts held within. It is insufficient for all learners who enter the 'conversant community' to

merely be able to share of the knowledge and cognition of the community; rather, there must be at least *some* new members who have the capacity to ask informed questions of existing influential paradigms and to offer new perspectives and ideas. Mercer (2000) cited by Cook (2002) substantiates this view stating:

*“The creation of human knowledge is not simply the accumulation of facts, skills and ways of making sense of experience. It is also a process of evolution, in which alternative explanations, proposals and solutions compete for survival”. (p. 8)*

Thus, we (members of the community and indeed wider society) have a need for new prototype paradigms to be conceived and to be offered to the community for peer review. I would argue that this is important, since it suggests that although we need to facilitate the transition of learners through the ‘linguistic shell’, we should not do it in such a way that the entrance vector of participation into the ‘conversant community’ is necessarily perfectly aligned with the Primary Nucleation Paradigm of the time, lest we wish to assure the perpetuation of the academic status quo. By way of illustration, the quote offered by Sommers (1992) (see section 4.4.1 in Chapter 4) is worth revisiting:

*“I, like so many of my students, was reproducing acceptable truths, imitating the gestures and rituals of the academy, not having confidence enough in my own ideas, not trusting the native language I*

*had learned. I had surrendered my own authority to someone else, to those other authorial voices". (p. 28)*

Wenger (1999) articulates a similar concept to the participation vector and also advocates that the direction of travel should not be fixed:

*"...education must strive to open new dimensions for the negotiation of the self. It places students on an outbound trajectory toward a broad field of possible identities" (p. 263).*

As educators, we need to find ways to meet these dual aims of facilitating linguistic initiation while ensuring that we do not constrain the entrance participation vectors of our learners.

While we try to help our students to negotiate the 'linguistic shell', we need to be particularly careful to safeguard against the appearance of specialised linguistic fluency where little truly exists. Bourdieu *et al.* (1996: p. 14) highlight this phenomenon as a real threat to learning *"Students who are least apt at deciphering the language of teaching can always rewrite a version of a lecture for the benefit of the lecturer in which no unmistakable nonsense ever stands out"*; Zamel (1993: p. 28) in citing Bartholomae (1986) states *"when students struggle to appropriate academic discourse in this way ...the consequence of learning can become more a matter of imitation or parody than a matter of invention or discovery"*. The video-based approach I used to research and verify peer collaboration between students offered me a means to 'see' the

cognition of students - made visible through their discourse. For those educators interested in gaining insights into the student understandings that underpin the use of specialised language, such a method offers an excellent opportunity to gain such insights and to establish whether authentic understanding underpins student use of language. Where such authenticity is not found, this is of course diagnostic of a need for better academic practice, not grounds for student chastisement!

### **5.7.6: Ramifications of this model to the professional development of academics working in higher education**

In Section 3.4.1.3 (of Chapter 3) I made reference to 'Full Engagement Scholars' as a term as it relates to my model of professional development (Figures 7-11 in Section 3.4 of Chapter 3). I argued that 'Full Engagement Scholars' were the only individuals (of the typology comprising Excellent Teachers, Pedagogic Researchers and Full Engagement Scholars) who could draw full benefit from the opportunities for experiential learning as modelled by Kolb (1984) (see Figure 9, in Section 3.4.1.3 of Chapter 3). 'Full Engagement Scholars' articulate fully with the professional community of academic practice (Shulman's (2000) 'Professional Educator' community) and as such, according to the model described above in Section 5.7.4, will need to be fluent in the specialised language of the 'conversant community' and will need to publish into that community before they can become part of the 'influential community'. It was for this reason that, in Section 3.4.3 (of Chapter 3) I stated *"those practitioners who remain exclusively within the informal 'conversational sub-community' will never really be influential within the wider*

*community and may in fact be structurally prohibited from making the transition to the 'publishing sub-community' without first up-skilling themselves in relation to full appropriation of specialised language".*

It should be noted that the concept of the 'conversational sub-community' discussed in Chapter 3 is different to the concept of the 'conversant community' in Chapter 5. The 'conversational sub-community' (of Chapter 3) are Scholarly Teachers who access their professional community through (somewhat informal) networking and learn and share experiences through conversations with colleagues. The 'conversant community' (of Chapter 5) are Pedagogic Researchers or Full Engagement Scholars who have completed a process of 'linguistic initiation' and are able to become members of the 'influential community' subject to publication and subsequent citation.

So for me, as someone engaged in a structured process of professional development, full engagement with my professional community through my transition of the 'linguistic shell' has been highly significant as a development opportunity; as has my continued immersion in teaching practice whereby I have been able to apply new learning, to research my own practice and to learn further from the sum of this activity.



## **CHAPTER 6: CONTEXT-CASE 3 – VIDEO AS A TOOL FOR STAKEHOLDER ENGAGEMENT**

### **6.1: Background to the context-case**

In September 2008 I was successful in securing £397 000 of funding to run a project known as T-SPARC (Technology-Supported Processes for Agile and Responsive Curricula) under Jisc's Institutional Approaches to Curriculum Design programme. Twelve projects were funded nationally; the project I designed sought to change the working practices that related to curriculum design and programme approval and to support those changes with new technology-supported processes; broadly, the aim became to democratise the curriculum design process so as to give a greater say in programme design to a greater range of stakeholders.

One of the unusual features of this Jisc programme was the insistence by Jisc that each project spend between nine and twelve months in initial review. We were actually forbidden from doing development work and were asked to conduct a 'baseline evaluation' of curriculum design processes.

At this stage the intention was that institutions would conduct a form of baseline evaluation and define some measures to be revisited at the end of the project. I was not at all convinced that this would be a useful approach; these were four-year projects and any measures of success declared at the time of project-start were likely, I felt, to be less than optimally relevant at the time of project-end. Additionally, there was the problem of attribution – a four-year project seeking to address an endeavour as wide-reaching as institutional approaches to curriculum design was likely to be affected by a

number of variables that sat outside the project's scope or even ability to discern. To expect that the notional formula of '(end context) – (starting context) = project impact' seemed to me to be naïve at best and obstructive at worst.

This problem of attribution is well known; Saunders (2011) refers to it as:

*"...the difficulty is in identifying the extent to which a particular intervention has created a specific outcome" (p. 89)*

White (2010) states that:

*"Many suggest that it is difficult, if not impossible, to attribute a change in outcomes to a specific intervention since there are so many different factors involved, so we had best look instead for a contribution"*  
(p.159).

White does go on to say that such a standpoint *"confuses attribution with sole attribution"* (p. 159) and suggests approaches that seek to attribute that which is attributable by the use of multiple approaches. Saunders (2011) argues for:

*"... 'inductive' methods which rely on a very strong research component that depicts what is currently 'the case' in any social or economic environment and then inductively establishes (backward mapping) the causal connections to specific interventions or resource allocations" (p.100).*

These suggestions are useful and it is notable that neither benefit especially from a focus on baseline evaluations.

A second consideration in shunning a baseline evaluation approach was the crucial importance of allowing stakeholders themselves to declare, explore and shape what was important – i.e. that which should be valued. Initial pressure from the evaluation consultants commissioned by Jisc was that project teams should conduct a baseline evaluation to establish ‘parameters for success’ right at the start of the project, before any stakeholder engagement activities could be conducted. For a project like ours, which was seeking to change the working practices of stakeholders, it seemed immoral to me to establish ‘parameters for success’ ahead of finding out what their needs were.

Bhola (2000) puts forward an interesting model of evaluation that embraces a greater degree of ambiguity in relation to the nature of impact and its origins. He puts forward a model with three categories of impact:

1. *“Impact by design – outputs resulting directly and immediately from the intervention;*
2. *Impact by interaction – outcomes arising from interactivity with concurrent interventions by other agents;*
3. *Impact by emergence – unimagined outcomes emerging from the original intervention through its interactions with other interventions and its interfaces with historical and cultural process in place but not easily discernable”* (p. 161)

Hansen (2005) offers a typology of evaluation models, one of which is the ‘Actor model’. Within that model she offers a ‘Stakeholder model’ variant that

places at its centre the notional question “*Are stakeholders satisfied?*” (p. 449) and has criteria for evaluation “*Formulated by clients*” (p. 449).

Both the Bhola (2000) and the Hansen (2005) models reinforce the legitimacy of taking steps to ensure that evaluation (especially where stakeholder engagement is key) remains open to revealing value of the unanticipated and the importance of the values held by others.

Given the scale and scope of institutional approaches to curriculum design as a cultural process, it would have been difficult to predict what a successful outcome should look like for all stakeholders involved in the activity. This implicit understanding, that curriculum design as an institutional process is highly complex, was later borne out when I facilitated a workshop with representatives from four other universities who were also running one of the twelve national projects<sup>4</sup> where we used our collective understanding of university processes to ‘map’ curriculum design (and approval) activities across all parts of our institution. This process generated a map shown as Figure 30.

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<sup>4</sup> University of Cambridge, Cardiff University, City University and University of Greenwich

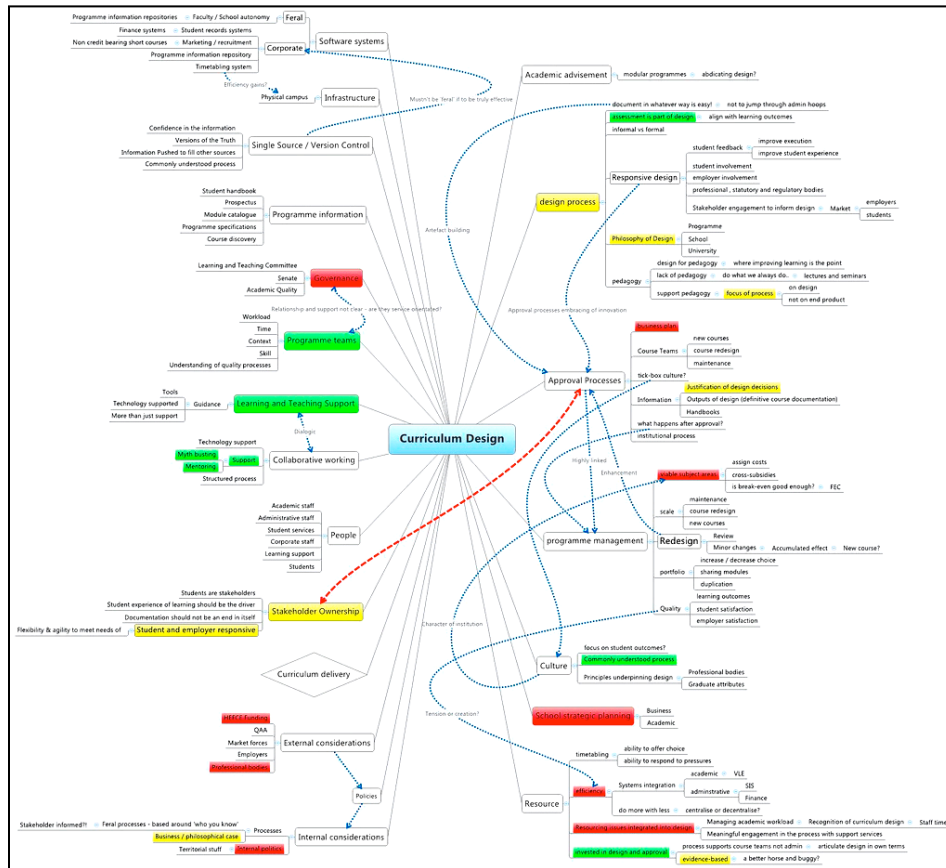


Figure 30: Representation of the complexity of curriculum design and approval as an academic process (T-SPARC Project Flickr space, 2010)

Although the textual details of Figure 30 are not discernable at this print size, the pattern of complexity is well demonstrated.

Instead of agreeing to the suggestions of the evaluation consultants commissioned by the funding body, I negotiated permission from Jisc to undertake a different form of base-lining activity. Instead of conducting a baseline *evaluation* (making some value judgements as to what latent change was important at the beginning of the project) I conducted a baseline *review* of the ‘lived experience of curriculum design’. I conducted this as a ‘video review’; this choice being informed by the underpinning experience of my previous work (as described in Chapters 4 and 5).

## 6.2: Use of video

The agreement I came to with Jisc was liberating as it freed the project team from conducting activity that was tightly bound within the expectations of evaluation and instead allowed us to pursue something more emergent in focus and more narrative in style. I chose to use video as the basis for our project review for two reasons: firstly, the resultant review<sup>5</sup> would be more engaging to stakeholders than a fully text-based document and secondly (and more importantly) I wanted the review to offer accounts of the lived experience of curriculum design and programme approval at Birmingham City University without a veil of additional interpretation that can result from methodologies which rely upon transcription-based approaches alone. In part this choice had a philosophical motivation, I wanted to try to minimise approximation of narrative accounts, additionally part of this decision related to a need to 'sell' the project to the rest of the University. The curriculum design and approval 'problem', the solving of which was the project's aim, needed to be seen as a 'real' problem for stakeholders – i.e. something that impacted on their working lives; having video footage of people talking about those issues provided a 'real' context.

It is useful to convey the use of video in this project, and the new approaches to curriculum design that cascaded from it, in three parts:

- Initial video-based review of the lived experience of curriculum design and approval;

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<sup>5</sup> Can be found at: <http://blogs.bcu.ac.uk/tsparc/t-sparc-baseline-review/>

- First pilot phase – Design of the MEd Learning and Teaching in Higher Education;
- Second pilot phase – wider appropriation of new approaches to curriculum design.

### **6.2.1: Initial video-based review**

[For the purposes of this thesis, the data relating to context-case 3 can be regarded as secondary data, collected as part of a funded project.]

Following an initial (email) call for volunteers, interview data was gathered from a mixture of stakeholders – academics, academic managers, staff from Academic Registry and a student. All six faculties were represented, though not all of the interviews were captured on video (at the request of the stakeholders). The interviews were based around questions that can be found as Appendix 3.

Nineteen people were interviewed, eleven were videoed and footage from nine of those was used in the published review. One video was not used because of technical difficulties and another was not used because the interviewee did not wish to be published on YouTube; instead, their footage was transcribed and converted to an animation (with voice simulation) via Xtranormal ® for inclusion on YouTube in an anonymous format, see Figure 31.



*Figure 31: Screen capture of the anonymous representation of a colleague's interview contribution.*

The source video files amounted to about ten hours of material; the method of analysis is summarised below

- A project support officer and I conducted initial analysis separately.
- When an interviewee raised a coherent concept it was noted down as précised point (a textual label for the concept raised).
- Our two sets of notes were compared and an overarching thematic schema was agreed (a similar process was undertaken in relation to the textual data taken as notes at the non-videoed interviews).
- I then made a second pass through the video data creating 'mini-clips' of each salient point – these 'mini-clips' were then tagged with the codes of the thematic schema. There was no need to generate further codes at this point; every 'mini-clip' could be accommodated within the schema without a need to expand it and every theme code was used to tag 'mini-clips'.
- Once all of the 'mini-clips' were organised, the most indicative clips to represent the coding theme were published within the review.



This process of creating a schema from the available data and coding accordingly was informed by my experience of building a schema to analyse peer collaboration in context-case 2 (described in Chapter 5).

#### **6.2.1.1: Review findings**

[Much of the text reported as review findings are drawn from the baseline review authored by me for Jisc. I am the sole author of the source review.]

Sixteen themes relating to the ‘lived experience of curriculum design’ emerged from our analysis of the video narratives. They were:

- ‘Drivers for design’
- ‘Coordination’
- ‘The availability of information’
- ‘Relationships and mechanisms’
- ‘Stakeholders’
- ‘Constraints’
- ‘Compliance’
- ‘The Programme Director’
- ‘Holistic and distributed approaches’
- ‘Authenticity’
- ‘Textual representation’
- ‘Specialised language’
- ‘Audience’
- ‘Staff support’
- ‘Existing use of technology’
- ‘Time and space for design’

Although a number of research methods could have led to the development of these themes (surveys, focus groups, interviews with field notes etc), no other method would have allowed for the simultaneous construction of an artefact that could be so readily used as evidence of stakeholder engagement in the project. The ability to take the video artefacts and embed them in the project website allowed other stakeholders (peers of the interviewees) to see that the T-SPARC project team, at least to some degree, was aware of the needs of stakeholders. Additionally, Jisc as the project sponsor, with a sector leadership interest in the use of technology, indicated high levels of satisfaction in the nature of the outputs of the review.

Each of the sixteen emergent themes and some analytical comments, are given in Sections 6.2.1.1.1 to 6.2.1.1.16 by way of sharing the findings of this work. Additionally, a transcription of all of the interviewee data used in the review is made available as Appendix 4.

#### **6.2.1.1.1: Drivers for design:**

Staff reported that drivers for design often originated from workplace settings, whether this was for the design of a new course or for the iteration of an existing one. There was a sense that the starting point was a consideration of the types of skills that might be required by our students when they enter post-university employment.

One interviewee reported that the changing tools available to academics, particularly e-learning tools may offer new opportunities that could only be fully exploited with a wholesale change in curriculum design and that their very emergence could prompt a redesign of a programme.

Another interviewee described how the success of a particular programme may lead the development of a new parallel but related course which might address the needs of the emergent market; especially where existing provision is oversubscribed.

There was a sense that programme design need not be confined to those opportunities afforded by periodic review; rather programme design should be seen as an ongoing iterative process. Some interviewees indicated that they utilised the University's Minor Change mechanism to effectively do just that, while other interviewees began to speculate (during the conversation) of a future idealised process of curriculum design and approval being linked more explicitly to the annual monitoring and quality enhancement cycle.

#### **6.2.1.1.2: Coordination**

The primary method of coordinating programme design activity often revolved around an initial 'away day' event for the programme team. This event was used to identify the 'job to be done', to explore and discuss programme philosophy and to begin the process of sharing the workload. Ongoing coordination was felt to be most effective if done on a face-to-face basis. Furthermore there was an expectation that staff had 'conceptual baggage' to drop before they could be engaged effectively in the design of a new programme.

#### **6.2.1.1.3: The availability of information**

Although staff found it quite straightforward to access templates for their documentation, access to other information that might be useful when undertaking curriculum design (progression statistics, external examiners reports, module and programme evaluations etc) required a good deal of work to track down. Some staff highlighted the importance of having access to good market analysis information, one participant (not captured on video) emphasised the need for market information to be made available through a dialogue with marketing staff rather than through access to a one-way information source.

#### **6.2.1.1.4: Relationships vs. mechanisms**

Effective 'relationships' were seen to be far more important than effective 'mechanisms' in enabling a good curriculum design process. Policies and defined mechanisms were not seen to contribute significantly to the curriculum design process. Building relationships – professional, and even social, with fellow academics (within a course team and across the institution), senior managers, students and external examiners are cited as being the most important factor in 'getting the job done'.

Where good relationships with stakeholders exist, it was thought to be very useful to be able to demonstrate their engagement in curriculum design at the point of approval (the approval panel event); this was thought to be best accomplished by their attendance at the event as their direct advocacy was persuasive.

#### **6.2.1.1.5: Stakeholders**

Staff identified a wide range of stakeholders in the curriculum design process but there was evidence of a wide variance in the degree to which these stakeholders have the opportunity to input into the curriculum design process. Although employers and students were frequently present at approval events as advocates for the new (or redesigned) programme they had much less influence over the work that had brought everybody to that point – this was thought to be particularly the case in relation to student engagement.

#### **6.2.1.1.6: Constraints**

Many of the programmes at Birmingham City University (BCU) lead to awards that lead to registration with a Professional Statutory and Regulatory Body (PSRB). These PSRBs lay down requirements in the form of stated competencies or learning outcomes, which form the basis of the design for programmes that seek to offer a route to professional registration. However, it is recognised that the constraints placed upon designers of programmes by PSRBs should not lead to a situation whereby the ‘professional agenda’ eclipses the responsibility of staff to develop the most effective and engaging programmes.

The video data I collected demonstrate the different professional communities that exist amongst staff at BCU. On hand they are aware of, and are immersed in, what I (citing Shulman, 2000) referred to in Chapter 3 as discipline-based communities and on the other, as designers of curricula, they

are part of the academic practice community too, what Shulman (*ibid.*) referred to as the 'professional educator' community.

#### **6.2.1.1.7: Compliance**

Staff in the University are well versed in what is required of them in terms of documentation at the point of approval and for the most part they are effective in meeting that expectation. Where this becomes problematic is when production of the documentation itself becomes the focus of curriculum design work rather maintaining a focus on curriculum design; in such cases, it was felt that a context of tight adherence to documentary requirements might not create the best environment to support innovation in curriculum design.

As the various video clips are presented, so particular philosophical viewpoints of the interviewees are stitched together. The visual nature of the approach to presenting the data in this way (see Figure 32, enhanced further in the full video-based version of the review<sup>6</sup>) allowed for rapid attribution of comments, which to an internal (University) audience, where the various interviewees were known as peers and institutional managers, was important in establishing an understanding that the project was being underpinned by engagement with those who would eventually have to live with the new approaches being proposed.

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<sup>6</sup> <http://blogs.bcu.ac.uk/tsparc/t-sparc-baseline-review/>



*"I do think there is a tendency for people to use tried and tested methods to comply"*

Figure 32: A screen capture from the video data included as part of the baseline review<sup>1</sup>.

Anonymity, as an ethical dimension to this approach is discussed in section 6.3 (this chapter).

#### **6.2.1.1.8: The Programme Director**

The Programme Director / Programme Director Designate has a pivotal role in facilitating the curriculum design process and the person allocated the role may act as academic lead and / or administrative support for the rest of the course team. A number of Programme Directors (within the interviewees) commented that on a spectrum running from 'programme administrator' to 'academic lead' they found their day-to-day role was located closer to the 'programme administrator' end than the 'academic lead' end. The Programme Director is often the person who effectively chooses whether a 'holistic' or a 'distributed' approach to curriculum design will be taken (see next section).

#### **6.2.1.1.9: Holistic and distributed approaches to design:**

By 'holistic', I mean a design approach where the entire programme team have input into the entire programme. By 'distributed' I mean a design approach where there is early hypothecation of the programme into modules, which are then designed largely by individuals (not teams) and then collated as a programme at a later stage. Despite this being the most common mode

of design, interviewees felt that distributed models were less effective in designing the best possible programmes.

The Programme Director / Programme Director Designate is very often the person who is empowered to decide whether the programme design process will be 'holistic' or 'distributed'; they are also the person identified as having responsibility for trying to make a coherent programme from the draft module designs that are submitted to them by other members of the design team.

#### **6.2.1.1.10: Authenticity**

The programme documentation was thought to be somewhat inauthentic by most interviewees. They felt that much of the essence of the design choices the team had made and 'what it is the students would be doing' on a daily basis was lost within the formal documentation they prepared for the approval panel (their perceived primary audience). However, two interviewees of the seventeen interviewed felt that efforts to try to 'capture' the programme in formal documentation allowed for further clarification of thought and ideas.

One respondent pointed out that formal documentation for approval is normally collated or written by a single individual and as such the document becomes framed by their agency and that this represented a risk to authenticity as it related to the views of the wider team:

*"It will be my words which will go into that document – which I hope will represent the views of everybody that has had input into it, but if I have a particular phraseology, it will be apparent in the documentation"*

*(Programme Director, Foundation degrees)*



#### **6.2.1.1.11: Textual representation**

Interviewees welcomed the idea of being able to supplement the representation of their programmes at the point of approval with multimedia elements. They were also interested in the potential use of Mahara (an e-portfolio application) for this purpose; particularly its ability to support the reconfiguration of the content for a range of different stakeholder groups. This approach was also thought to offer enhanced opportunities for staff to reflect on their own teaching practice.

Although the affordances of Mahara were persuasive, in the final version of the new process (and system), we used a single technology for all facets of the curriculum design and approval process. Thus, the evidence (supplementary to documents) shared with those conferring approval was shared via a bespoke version of *Microsoft SharePoint*.

What comes out of the video clips is a clear sense of awareness that those who are conferring approval upon programmes and those who will study them (students) are valid stakeholders in the curriculum design process and that we should construct artefacts that make sense across these audiences.

#### **6.2.1.1.12: Specialised language**

Academic language used throughout the curriculum design and programme approval process can limit the effectiveness of employer engagement in this process. This is thought to be especially important since the scoping of the employment 'requirements' of a graduate is frequently the first stage in the design process.

*“I do think there is a way that we phrase things within the University which requires translation for anybody that’s not used to H.E.”*

*Programme Director 2*

This resonates well with the discussion relating to specialised language that I offered in Section 3.5 (of Chapter 3), and Section 5.7.4 (of Chapter 5) particularly the notion of needing to undergo ‘linguistic initiation’ before being able to contribute to and draw from the ‘conversant community’.

#### **6.2.1.1.13: Audience**

It was felt that the primary audience for programme documentation was the Approval Panel. Although there was an understanding that programme documentation had a number of audiences (in theory), the crucial nature of satisfying the approval panel meant that documentation was written with (almost exclusively) that audience in mind. This meant that the utility of the documentation for other stakeholders was thought to be lower than it might be. There was a sense that programme documentation was ‘for the University’ rather than for the programme team, students or employers.

Additionally, some doubt was raised as to whether the Approval Panel actually offers scrutiny of the ‘right things’ or offers an opportunity for discussion of things of interest and importance to the programme team.

Comments that emerged from this theme planted the seed for the most transformational change to the curriculum design and approval processes. At the centre of the new (SharePoint-based) system to support curriculum design

and approval was the primary objective for staff to focus on designing courses and not just on preparing documentation.

#### **6.2.1.1.14: Staff support**

Staff support was recognised as being available to staff in a variety of forms at my institution, including the provision of accredited Masters level modules to support curriculum design<sup>7</sup>.

Since the time of filming, I've led the development of a new MEd programme – MEd Learning and Teaching in Higher Education, we now have thirteen 30-credit modules for staff to choose from. The response to this need for development has cascaded from my immersion in staff's 'lived experience' of curriculum design. The development of the MEd programme was the first to be piloted with a version of the new curriculum design and approval methods. The design of the programme was underpinned by a video-based approach to stakeholder engagement and is summarised in section 6.4 (this chapter).

#### **6.2.1.1.15: Existing use of technology**

Some basic electronic systems such as shared drives and email were already being used to facilitate team conversations and collaborative work and some other technologies such as Google Docs and Moodle (my institution's virtual learning environment) had also been utilised to facilitate collaboration, but the need for more effective mechanisms which could embrace better the need to involve a wider group of stakeholders was recognised.

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<sup>7</sup> Prior to embarking on the T-SPARC project (and a related University curriculum redesign initiative, the University offered 150 credits of level 7 provision relating to curriculum design. After these initiatives (as a consequence of revealing staff support needs) we (now) offer 390 credits of provision.

Although version control of definitive documentation wasn't seen as a particular problem, this was only the case because the Programme Director / Programme Director Designate took responsibility for administrating and collating their own definitive archive. It was acknowledged that though this worked, it was inefficient and restricted what might be achievable if collaborative approaches to curriculum design were better supported.

There was some highlighting of the potential difficulties that can be encountered when trying to collaborate electronically with those in other, external, settings – particularly the Health Service, where there are very non-porous firewalls.

*“There are massive problems getting access to servers through the Health Service”*

*Programme Director 2*

#### **6.2.1.1.16: Time and space for design**

Creating and allowing for effective opportunities for staff to have wide ranging discussions in relation to curriculum design was regarded as an important factor before a holistic approach to curriculum design could be enacted. However, it was recognised that it is possible to rapidly develop programmes and launch them within very short time frames; but it was also considered to be the case that a capacity to be able to do this on a more routine basis is likely to become more important as we seek to become more responsive to the needs of our stakeholders.

### **6.2.1.2: Discussion**

This review was just a starting point but I learnt much about the ‘lived experience’ of curriculum design and I supplemented what I’d learnt by running a number of engagement events with our staff. The end result of this baseline reviewing activity was that I identified the need for new design and approval processes that would:

- Encourage innovation
- De-prioritise the production of documentation as a (primary) curriculum design activity
- Provide more opportunities for stakeholder engagement
- Provide better opportunities for influential stakeholder engagement
- Offer a formative, rather than summative, approach to programme approval
- Ensure single data entry points where possible – i.e. no duplication
- Do a better job in relation to version control of documents
- Provide pedagogic and regulatory support for each stage of the curriculum design process
- Provide greater transparency in module design and facilitate a deconstruction of the silos that can characterise programme design when undertaken by multiple people.

A full description is outside the scope of this thesis but a new institutional process and a new technical system have been successfully developed according to the needs that were articulated by our stakeholders through the

video-based approaches I took in relation to stakeholder engagement. Video continued to play a part in the dissemination of project progress. In total, 87 clips were posted to the project's YouTube channel.<sup>8</sup>

### **6.2.2: First pilot phase**

Once a pilot (*SharePoint*-based) system was in place, it was used to support the design and approval of a new MEd programme for academic staff: the MEd Learning and Teaching in Higher Education. Once again, video was deployed to support the design and approval process. On this occasion a curriculum-planning event of the programme team (designate) was videoed (see Figure 33) and the resultant footage was broken up into 86 clips and organised into 13 thematic folders:

- Negotiated study module
- Assessment module
- Design module
- Dissertation
- Employability module
- Innovation module
- Learning technology module
- MEd market
- Overall structure and philosophy
- PGCert<sup>9</sup>
- Research module

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<sup>8</sup> <http://www.youtube.com/user/TSPARC/videos>

<sup>9</sup> The institution's mandatory Postgraduate Certificate in Learning and Teaching in Higher Education

- Student engagement
- The T-SPARC<sup>10</sup> process

Additionally, the PGCert folder came to host 10 sub folders:

- Assessment
- Competence issues
- Indicative content
- Market and structure
- Module 1
- Module 2
- NMC<sup>11</sup> requirements
- Pass/Fail or graded
- Philosophy of the PGCert
- SEDA<sup>12</sup> accredited front end

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<sup>10</sup> Technology-Supported Processes for Agile and Responsive Curricula – a Jisc funded project under their 'Institutional Approaches to Curriculum Design' programme (see section 6.1, this chapter).

<sup>11</sup> Nursing and Midwifery Council – in addition to having to meet the professional requirements of the Higher Education Academy, for those working in the professions of nursing and midwifery, members of that professional community also have to articulate their development with the requirements of the NMC in relation to clinical education. In this way they act as an external influence of the 'wider world' – see section 3.2 (Chapter 3).

<sup>12</sup> Staff and Educational Development Association – a national professional community of practice.



Figure 33: Screen capture of video footage taken at the MEd programme team curriculum-planning event.

The 86 indexed video clips were hosted on the pilot T-SPARC (bespoke version of *SharePoint*) and members of the course team were encouraged to comment on them via embedded discussion forums. These video clips served two purposes. Firstly, as an aid to recollection for those who were designing modules and secondly as evidence of wide team engagement, demonstrating the origins of design thinking to those conferring approval. Additionally, the provision of discussion forums facilitated team dialogue in relation to design decisions being made.

### 6.2.3: Second pilot phase

The first stage pilot work saw the use of video with programme team members to inform programme design and approval. In the second stage of pilots the new processes carried the expectation that programme teams would include a wide range of stakeholders in their design activity and that they would offer evidence of such engagement through the appending of artefacts to the new (*SharePoint*-based) system.



In order to help staff achieve this, investment was made in technology-based solutions<sup>13</sup> for programme teams to capture such evidence. This support came in the form of 70 (Flip) video cameras, 30 MP3 audio recorders, 3 Voxur units and 1 Miituu unit. The Voxur and Miituu units are video interviewing devices whereby individuals can record video-based questions and have stakeholders record video-based answers in response. As part of a wider University initiative of enhancing student engagement practice, particular encouragement was made to engage students in the curriculum design process. Figure 34 shows the relationship of engaging students in curriculum design to other (linked) University initiatives.

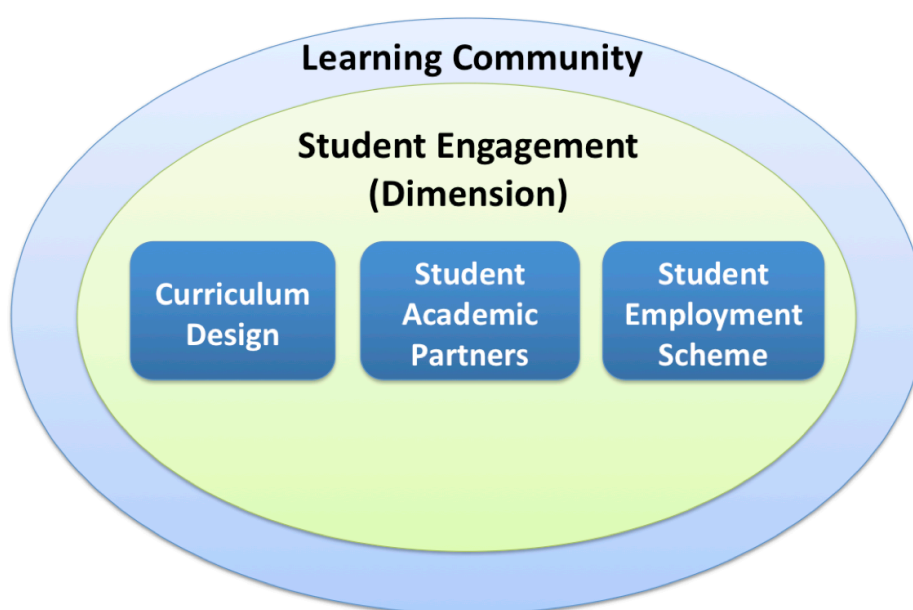


Figure 34: Relationship of student engagement, curriculum design and other University initiatives (Bartholomew et al., 2013)<sup>14</sup>

<sup>13</sup> <http://blogs.bcu.ac.uk/tsparc/category/voxur-units/>

<sup>14</sup> The Learning Community initiative was an overarching programme of activities conceived to address students' sense of belonging to the University. The initiative was multifaceted but included: student engagement in curriculum design; the Student Academic Partners Scheme (where students undertake paid employment to work with staff on academic projects of mutual interest; and the Student Employment Scheme (where students are employed through an internal temporary employment agency in relation to general University business.)

This suite of initiatives, under the heading of ‘learning community’ has been made, in part, in response to the Browne review (2010) and the 2011 White Paper: Higher Education – Students at the Heart of the System. Rather than adopt an institutional response to the relatively high growth in student fees that seeks to offer students value in terms of an enhanced ‘consumer’ experience, we have sought to offer added value through partnership working experiences (Figure 34). Central to the institution’s offering are opportunities for influence and work experience and empowerment.

With respect to new opportunities for students to be engaged in curriculum design activity, examples of how these video-based methods secured such engagement are offered below. Video was used:

- To collect the views of clinical Radiotherapists (potential Master’s students) in relation to the composition of a new MSc Radiotherapy.<sup>15</sup>
- To collect the views of students on the Psychology Graduate Diploma prior to design.<sup>16</sup>
- To collect the views of students on the BSc Building Surveying course as part of redesign.
- To collect the views of students on the Postgraduate Certificate Education and Training programme as part of redesign.

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<sup>15</sup> <http://blogs.bcu.ac.uk/tsparc/2010/07/post-from-kate-chadwick-joint-pg-lead-for-radiotherapy-experiences-so-far/>  
and  
<http://blogs.bcu.ac.uk/tsparc/2011/02/is-meaningful-engagement-without-risk/>

<sup>16</sup> <http://blogs.bcu.ac.uk/tsparc/2011/02/voxur-uni-of-greenwich-t-sparc-pilots-and-an-example-voxur-clip-from-one-of-our-pilot-teams/>

To give an example of the activity undertaken through these pilot studies, I offer more detail in relation to the Graduate Diploma Psychology pilot. In this case, sixteen questions asking about experiences of assessment were put to twenty-five students yielding a total of 366 video clips. These clips formed a set of resources for the programme team to refer to during their design work.

This context-case offers an example of how, under the new approaches to curriculum design, the collection of video-based data can contribute to the auditable evidence of the student voice being incorporated into curriculum design decisions. Although good work has been undertaken in relation to stakeholder engagement in curriculum design, widespread translation of such engagement into tangible (and attributable) curriculum change is less well pronounced than it might be. The cultural inertia around influential stakeholder engagement in curriculum design is discussed in this chapter's adjunct narrative (Section 6.4).

### **6.3: Ethical dimensions of using video**

Although, video is at the core of the academic practice described through all three context-cases, context-case 3 introduces the additional feature of publicly sharing the video data collected. Because of this, the ethical considerations relating to the use of video is incorporated into this chapter. I contend that these considerations fall into three categories:

- Data protection
- Issues relating to a lack of anonymity
- Framing

I offer a discussion below for each as they relate to my work.

### **6.3.1: Data protection**

In the UK, data protection is governed by statute under the Data Protection Act of 1998. Redsell and Cheater (2001) summarise the broad principles of the act as:

*“... ‘personal data’ should be processed fairly and lawfully; that subjects must have given explicit consent to the processing of data; that data should only be obtained for one or more specified purpose; that it should be accurate and contemporaneous and disposed of once it is no longer necessary. However, there are several exemptions, which apply to the processing of ‘personal data’ for ‘research purposes under relevant conditions’. One of the exemptions states that personal data can be processed for a different purpose to the one it was collected for and kept indefinitely provided ‘that the data are not processed in such a way that substantial damage or substantial distress is, or is likely to be, caused to any data subject’.” (p. 509)*

Aware of the responsibilities we had in relation to the collection and use of video data in the T-SPARC project, I worked with the University’s Information Manager to access his advice and to collaborate with him to develop a form of words that could be used to inform consent for participation in video-based narrative collection and analysis.<sup>17</sup> This collaborative work led to a form of

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<sup>17</sup> <http://blogs.bcu.ac.uk/tsparc/2010/07/voxur-units-and-the-data-protection-act/>

wording that we were able to use with all of our student and employer stakeholder engagement work (Appendix 5). Inherent within this form of words is a philosophical position that stakeholder narratives are valuable and valued and that attribution to agency is an important part of engaging stakeholders in work such as curriculum design.

### **6.3.2: Issues relating to lack of anonymity**

The lack of anonymity is of one of the affordances of video – especially when it is being used for group discussion, I discussed these benefits in section 1.4 (Chapter 1) under the heading of attributability, but Erickson (2011) offers an engaging account of these benefits from a 1967 perspective of using video when it first became available to researchers:

*“Having previously recorded such discussions using audiotape alone, one single videotape seemed marvelously [sic] illuminating; I could see who the speakers were addressing as they spoke – a particular individual, a subset of the group, or the whole group.”* (p. 181)

Of course, anonymity and attributability are flip sides of the same coin. I contend that, for context-case 3 in particular, the transparency of agency was of paramount importance as was the continuity of evidence relating to message; for example, a set of minutes from a meeting that (hypothetically) states that *“the students present declared that presentations were their preferred method of assessment”* is qualitatively different from a video clip of

students declaring the same to camera, especially where the message is somewhat unexpected.

In terms of behaving ethically in relation to anonymity, the approach I have taken is to be very transparent with stakeholders, ensure they are able to give consent from an informed perspective and to try to emphasise the philosophical position of valuing their narrative over a transcribed approximation of it.

### **6.3.3: Framing**

Those conducting video research are empowered to influence the footage they use. This power has many dimensions and occurs at many stages as shown below:

- Capture
  - Agency
  - Temporal
  - Screen
- Edit
  - Sampling
  - Order
- Analysis
  - Coding
  - Interpretation
- Dissemination
  - Selection
  - Context

### **6.3.3.1: Capture framing**

A researcher using video to collect data ultimately has the power to shoot or to not shoot; this in itself offers the greatest ability to frame data collection.

Data is collected or is not collected. In addition to this overarching power, the researcher also has the power as to who to capture on video and who to not capture (capture framing). They also get to choose when they capture somebody (temporal framing) – this year, next year; on a Monday, on a Wednesday; during the day, during the evening; or before an ‘event’, during an ‘event’ or after an ‘event’. There are a myriad of choices to be made and they all influence the video data collected. Additionally, the video researcher gets to choose when the camera is on and when it is off during any given session – thus selecting, at the point of capture, what is included and what is excluded.

As well as framing the data (as explored in this typology) video researchers also get to choose the physical framing of their video – i.e. what is actually shown within the frame (screen framing): how wide to shoot – include the background context? Three-quarter composition to include hand movements? Close-in, facial expressions only? Such choices fundamentally influence the data that is captured and how it can be analysed and disseminated in the future. Additionally, there are myriad of more subtle framings that can be made that relate to screen framing – such devices as eye contact with the camera, the way the subject(s) is/are lit, what they are wearing, the angle of the camera, can all have an impact on subsequent analysis of data and the way it is perceived post dissemination.

### **6.3.3.2: Edit framing**

Additional framing power is made available to the researcher at the point of editing the collected footage. Just because footage is collected does not necessarily mean that it will be included within the analysis part of the video research workflow (sampling framing) – often this will be because of technical issues such as the audio being unusable due to high levels of background noise. Additionally, it is possible that only *parts* of clips will be used, with the researcher using their sampling power to select mini-clips. In my workflows, I almost always build mini-clips but I ensure that all of the video is used. However, it is possible for edit framing power to be used to only take forward selected parts of any contribution.

Often, multiple video clips are collected from a range of individuals and the video researcher needs to aggregate these in some way. In many research applications (and always where video is disseminated as a shared artefact), the various video clips are placed into a running order (order framing). This influences how the video clips are experienced.

### **6.3.3.3: Analysis framing**

Often video data are analysed using a coding schema, here particular clips are labelled with a particular 'code' by way of linking it to a particular point of relevance (coding framing). This is not special to video research but nonetheless there is the potential here to frame the video data in line with researcher subjectivity. Even if coding schema are used that approach authenticity of subjects' intended meanings, the researcher still has the power



to interpret individual and collective comments/accounts and to offer their own view as to the importance of the comments made (interpretation framing). Again, this is not special to video-based research but the veneer of 'authenticity' offered by being able to see people voice such views makes it a more serious risk than other methods that don't 'seduce' viewers to such a degree.

#### **6.3.3.4: Dissemination framing**

In some research contexts, dissemination of research outputs includes parts of the video footage itself (Stanford University's Web-Diver, my own T-SPARC project); the video researcher holds power as to what to include in such outputs (selection framing) and also gets to choose how, when, where, with what such data gets disseminated and how long it remains available (context framing).

Many of the issues raised here can be seen as a strength to the video researcher, video data is quite flexible at every stage and offers a lot of researcher choice. Post dissemination though, it would be a mistake to view video accounts as entirely authentic. Of course, researchers take steps to mitigate some of the tensions here, ceding many of the choices to the stakeholders themselves, for example by giving students *Flip* video cameras and inviting them to use them in way that communicates the narrative they wish - thus sharing the framing power; but of course this does not lead to a reduction in framing, just the reduction of a monopoly upon it.

For my part, I try to use fixed camera positions, take care with audio, use full clips, involve others in the development of coding schema and give the stakeholders/interviewees an opportunity to see, comment on and veto footage before it is disseminated. It is not a perfect addressing of the issues but as with all social research, no method is completely free of subjective bias.

#### **6.4: Adjunct narrative**

In section 6.1 (this chapter), I made some play of the need to engage stakeholders in both the T-SPARC project and the processes relating to curriculum design that the project was to develop. When the University was awarded funding to run the T-SPARC project I was managing (on behalf of the University) a curriculum redesign initiative known as RoLEx (Redesign of the Learning Experience), a pan-institutional quality enhancement project tasked with facilitating the migration of the entire undergraduate portfolio from a 12-credit module structure to a 15-credit module structure whilst enhancing, and making more efficient, the programmes we offered our students. We learnt a great deal during this project. We learnt that student aspirations in relation to being involved in the redesign, and thus quality enhancement, of their own learning were set at a very low level; that faculty staff tended to engage with students, and other stakeholders, in a tokenistic way and that our curriculum design and programme approval mechanisms, although robust in scrutinising the end *product* of curriculum design (as represented by the definitive documentation) were poor at having any oversight of the design *process* itself.

The low student expectations of involvement in quality enhancement through curriculum redesign were problematic and we soon realised that we needed to manage the expectations and aspirations of those entering higher education and to expand the ways in which students could engage with the University in the common aim of enhancing the student learning experience. A number of initiatives emerged from this intent, which focused upon a new relationship with students and the Students' Union leading to the development of the Student Academic Partners scheme and the Student Employment scheme (see section 6.2.3, this chapter).

Although the notions of stakeholder engagement in curriculum design as laid out above are laudable, it is not always clear that stakeholders necessarily aspire to be engaged or whether indeed they frame the concept of engagement in ways we can predict or hope. As we began to tackle this issue, with a colleague I drew upon and adapted the Ladder of Engagement model as described by Rudd *et al.* (2006). Our adaptation (created to support RoLEx) is shown as Table 14.

Table 14: Stakeholder engagement model. Bartholomew and Freeman (2011), adapted from Rudd et al. (2006).

Level of engagement	Notify	Inform	Consult	Involve	Collaborate	Empower
	Stakeholders may encounter untargeted project publicity	Stakeholders are regularly and reliably informed, made aware of their rights and ways of participating in the project	Project staff obtain views of stakeholders. Stakeholders receive full feedback on decisions taken	Project staff work with stakeholders throughout decision making process to ensure views are understood and taken into account	All aspects of decision making processes are undertaken in partnership with stakeholders	Stakeholders set agendas for change. Self organisation and responsibility over management is held by stakeholders
Stakeholder roles	Information made available	Stakeholders informed	Stakeholder consulted	Stakeholder input	Stakeholder shaped	Stakeholder owned
	Stakeholders as passive recipients of information without context.  Dialogue with project staff is not expected	Stakeholders as passive recipients of broadly contextualised information  Dialogue with project staff is implicitly welcomed but not explicitly invited	Stakeholders as respondents  Designated consultation space/time in meetings  Feedback/right of reply strategies  Some dialogue with project staff is expected	Stakeholders as project team members  Stakeholder appointment on POG  Participation in skills training	Stakeholders as collaborators  Stakeholders on management committees  Stakeholder shaped policy making  Stakeholder interest/action groups	Stakeholders as designers (independent)  Distributed decision making  Stakeholder managers  Stakeholder 'ownership' of resources, events, policies and learning
Engagement tools	Untargeted publicity  Access to minutes and documents  Static website	Briefings  Regular blogs  Targeted letter	Comment/opinion polls  Focus groups (stakeholders as respondents)  Project staff led consultation workshops  Project staff led questionnaires, interviews	Workshops  Voting  Active focus groups  Joint-led consultations  Interviews (open-staff directed)	Stakeholder-led consultations  Interviews open/closed (stakeholder directed)  Open forums  Rich picture activities  Away days with stakeholders and project teams	Stakeholder managed programmes  Stakeholder agenda setting  Stakeholder managed consultation activities and tools development
Anticipated effect	Potential for peripheral general awareness	Potential for informed, contextualised awareness	Confirmed widespread contextualised awareness  Emergence of reaction data	Emergent reaction data is not framed exclusively by project staff  Stakeholder agendas are collected and recognised	Agendas emerge only from collaborative activity with stakeholders	New mechanisms are established which are stakeholder owned  Project is self-sustainable with no expectation of project team intervention

As can be seen, this representation offers a view that very little 'engagement' occurs below the 'Involve' level and only at the 'Collaborate' level do stakeholders begin to take true ownership of the agenda. As an institution, we began to share our model with stakeholder groups as a way of trying to communicate the step-change in activity we contended was required for real progress on stakeholder engagement to be made.

## CHAPTER 7: CONCLUSION

This concluding chapter has two broad purposes, firstly to offer a review of the findings and outputs of the work described herein and secondly to review the thesis as a response to the expectations of doctoral study.

### 7.1: Review of findings and outputs

My original contribution to knowledge is multifaceted and falls into two categories:

- Conventional research outputs as a consequence of investigations conducted through the three context-cases.
- Theories (as models) that have emerged as a consequence of reflecting on experience, both contemporaneously while carrying out the activities described in the context-cases and during the thesis write-up stage as I sought to make sense of my overall research experience.

These contributions to knowledge are summarised below.

- In Chapter 2 I explore the format of case-study research and put forward a modelled typology of case-study research that seeks to collate the work of Bassey (1999); Dooley (2002); Merriam (1988); Simons (2009); Stake (1995); Yin (1993); and Yin (1994) into a unified framework (Figures 4 and 5). Work from these authors is combined with my own contention that it is helpful to differentiate between case study as a narrative account and case study research as a process of *making sense* of lived experiences as represented by narrative

accounts. The resultant typology categorises types of case study research according to 'method' and 'focus'. 'Method' incorporates the 'form' of the case study research, the 'motivation' for undertaking it and the 'paradigmatic structure' – the philosophical position from which the research is being conducted. 'Focus' incorporates the case study's 'relationship to theory', the 'narrative mode' that is used to present the data and the 'purpose' of the research outputs – i.e. what activities will they inform?

- In Chapter 3 I explored the concept of professionalism as it related to: professional frameworks (using the UKPSF as an example); the Scholarship of Teaching and Learning (SoTL); communities of practice and Kolb's (1984) model of experiential learning. This exploration led to the development of a model that placed Kreber's (2002) dichotomous concepts of 'scholarly teaching' and 'scholarship of teaching' onto a common spectrum that spanned a community of professional practice (Figure 7). The model introduces three types of member of the professional community (of academic practice): Excellent Teachers, Pedagogic Researchers, and Full Engagement Scholars. By mapping the model onto Kolb's (1984) model of experiential learning (Figure 9), I was able to show that only the Full Engagement Scholarships optimise their opportunities for learning.
- In Chapter 4 I introduced the first of three context cases – 'Video as a tool for teaching'. Here, I shared research into the efficacy of video-

lectures as a replacement for face-to-face lectures in my context. Four research questions were answered through this context-case:

- Question 1: Do video lectures effectively communicate information to students and facilitate their learning?
- Answer: Yes they do. I reported good gains in student learning following their engagement with video-lectures (Table 2).
- Question 2: Are video lectures as effective as face-to-face lectures in communicating information to students and facilitating their learning?
- Answer: Yes they are. I reported very similar student performance for students who engaged with learning resources delivered through video-lectures compared to those who engaged with resources delivered through conventional face-to-face methods (Table 3).
- Question 3: How well are case-based learning opportunities received by students?
- Answer: They are well received by students. I reported very positive evaluation data relating to student perception in relation to learning benefits and enjoyability (Table 4).
- Question 4: Are case-based units of study effective in supporting learning within the reported context?
- Answer: Yes they are. I reported student performance both in relation to students' ability to make accurate diagnoses and in relation to the learning that occurred as a result of their engagement with the supporting resources. Although diagnostic



accuracy was mixed across the sample, good learning gains were found in relation to engagement with the supporting resources (Table 5).

- In Chapter 5 I introduced context-case 2; a continuation of the work introduced in Chapter 4, but here with an emphasis on using video to research student learning. Specifically I reported how I had investigated student collaboration. The context-case addressed two research questions that followed on from Chapter 4.
  - Question 5: Do the cases, when studied by triads of students, lead to quantifiable peer collaboration?
  - Answer: I reported extensive research activity in relation to answering this question and was able to demonstrate a good deal of evidence that students were engaged in activities that could legitimately be categorised as collaboration (Appendix 2).
  - Question 6: Does collaborative study of cases confer a learning advantage over individual (lone) study of the same cases?
  - Answer: I found no evidence that collaborative study of cases conferred a learning advantage to individual study of the same resources (Table 13). However, students reported a strong preference for undertaking the study collaboratively and many would have not engaged with the (effective) learning opportunities if they had only been offered for individual study (Table 4).

In Chapter 5, I also described a novel method of using *Microsoft Word* to conduct discourse analysis. I reported how I found the affordances of *Word* with its comprehensive ability to mark up text, to append media, to tabulate data and to allow for the rapid viewing of large amounts of data to be of great value in representing the sort of data I collected and to mark-up evidence of collaboration in accordance with the bespoke schema I developed.

Although I shared a bespoke schema for recognising collaboration in my context (Tables 7-10), I would not advocate the use of this schema in other contexts. Central to its design was how the coding schema emerged from the data I had collected and such an approach would require other authors to develop their own bespoke schema from their own data.

The ‘adjunct narrative’ of Chapter 5 offered a new model to explain the dynamic and hierarchical nature of communities of (academic) practice. Through that model I introduced the concepts of the ‘linguistic shell’ (where initiates into a community appropriate specialised language that decodes the conversations of the community); ‘nucleation paradigms’ (ideas that compete for the patronage of community members); and ‘participation vectors’ (the direction and speed of travel of community members in relation to the centre of the community and the position of the ‘nucleation paradigms’ within the community).

- In Chapter 6 I described how my familiarity with the use of video led to its selection as the means to collect data for the baseline review of the

‘lived experience’ of curriculum design. The data collected revealed sixteen themes around which academic staff discussed their experiences in relation to curriculum design as an academic practice (Section 6.2.1.1).

In Section 6.3 I introduced a consideration of the ethical dimensions of using video as a data collection technique. Of the three categories of ethical issues discussed (data protection, anonymity and framing), I offered a detailed consideration of the ethical issues relating to framing; and I developed and offered a categorisation of the ethical issues of framing comprising ‘capture-framing’, ‘edit-framing’, ‘analysis-framing’, and ‘dissemination-framing’ (Section 6.3.3).

Consideration of the custom and practice of involving a range of stakeholders (students, employers, representatives of professional bodies) in curriculum design led to the development (with a colleague) of a model of stakeholder engagement (Table 14); this model has been useful to demonstrate to those who lead curriculum design how they might generate more effective engagement from stakeholders.

Overall, the work communicated within this thesis offers a number of linked outputs that together make my original contribution to knowledge.

## **7.2: Coherence of thesis narrative**

As mentioned in Chapter 1, this thesis is somewhat unconventionally structured; the case study approach has led to the reporting of a range of academic activities with a common theme of video with adjunct sections

reflecting the learning that has cascaded from undertaking a structure programme of professional development through research. Boud and Tennant (2006), when referring to professional doctorates note how the final ‘product’ of a professional doctorate may “*vary from the conventional thesis*” (p. 296) and also make mention of the inclusion (within the thesis) of reflective work of an academic nature. Winter (2000), when referring to doctorates in education, notes that the thesis may be a “*collection of reflective exercises*” (p. 25). I would contend therefore that although my approach to thesis construction may be somewhat unconventional, it is not without precedent.

Although the three context-cases are presented as separate research activities, the common theme of video is not happenstance. Firstly, the context-cases are broadly causal – the use of video for teaching (context-case 1) created the context for the use of video to research collaborative learning (context-case 2); and my familiarity with video as a data collection method led to me using it to research the ‘lived experience’ of curriculum design in context-case 3. Secondly, context-cases 1 and 2 (and the associated ‘adjunct narratives’) cascade directly from the sector investment made into learning and teaching following the publication of the White Paper: *The future of higher education* (DfES, 2003). In Figure 2 (Section 1.6 of Chapter 1, reproduced below for convenience as Figure 35) I demonstrated the relationship between the White Paper (*ibid.*), my academic activity and this thesis.

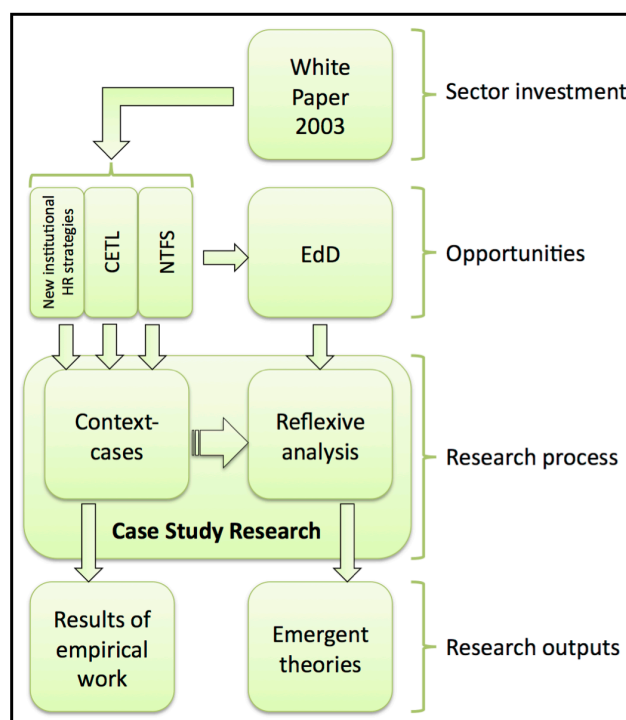


Figure 35: Reproduction of Figure 2 - Overarching conceptual structure of my thesis

The sector investment made as a result of the White Paper (DfES, 2003) led to new approaches to the allocation of human resources to the scholarship of teaching and learning – examples of which (in relation to my own institution) can be found in Bartholomew *et al.* (2009); the expansion of the National Teaching Fellowship Scheme; and to the funding of the Centres for Excellence of Teaching and Learning. I was a beneficiary of investments made in all of these areas, as shown through the examples of resource allocations offered in Table 15.

Table 15: Sources of funding that facilitated the academic activities described in this thesis.

	Source of funding		
	Local investment in learning and teaching	National Teaching Fellowship Award	BCU's Centre for Excellence in Teaching and Learning
Investments made in time, equipment and travel that underpinned the work described in this thesis	Task Group Fellowship – buyout for two days per week to develop video lecture delivery methods.	The majority of my doctoral fees.	Laptop computers for use by students to ( <i>inter alia</i> ) undertake computer supported collaborative learning (CSCL).
	Bulk CD Writer for initial distribution of video-lecture media.	Travel to ISLS conferences post 2004	Expansion of wireless Internet infrastructure to facilitate ( <i>inter alia</i> ) CSCL.
	Travel to ICLS 2004	Video cameras	
	Establishment of Senior Academic Posts in Learning and Teaching allowing me to commit to researching aspects of my practice.	Computer equipment (suitable for the video analysis techniques described in Chapter 5)	
	A contribution to my doctoral fees.		
	Reward and recognition mechanisms that allow for professorships to be conferred for 'excellence in learning and teaching'		

I have endeavoured, through this thesis, to offer an authentic account of (themed) aspects of my professional development that have cascaded from my engagement with a structured programme of study (University of Birmingham's EdD) within the context of the opportunities made available as a consequence of the White Paper of 2003.

### 7.3: Reflecting on the professional nature of my doctoral study

The Framework for Higher Education Qualifications (FHEQ) in England, Wales and Northern Ireland (Quality Assurance Agency, 2008) makes reference to the aims of professional doctorates (such as the Doctor of

Education – EdD) stating: *“Professional doctorates aim to develop an individual’s professional practice and to support them in producing a contribution to (professional) knowledge.”* (p. 25)

Fenge (2009) notes, in relation to professional doctorates, that there *“is not only an emphasis on developing knowledge but also a focus on developing practice”* (p.169). Lester (2004) links professional doctorates directly to professional development stating: *“a more accurate way of conceptualizing the practitioner doctorate from the practitioner standpoint would therefore be as a vehicle for self-managed development as a leading professional taking forward an area of practice”* (p. 761). A central part of my justification to structure my doctoral research around my three context-cases, the associated adjunct narratives and the models that emerged from the process of write-up has been that this reflects my authentic journey of professional development. As Lester (*ibid.*) suggests, I have used my doctorate as a vehicle for professional development.

Bourner *et al.* (2001), reporting data from 1998, identified a number of differences between PhD programmes and professional doctorates in England; although the study is a little out of date now, it reinforced the notion of the ‘professional researchers’ (PhD) and ‘researching professional’ (professional doctorate) binary. This notion *partially* aligns with the model I put forward in Chapter 3 (Figures 7-11) whereby the above term of ‘professional researcher’ maps well to my notion of the ‘Pedagogic Researcher’ and the above term of ‘researching practitioner’ maps well to my notion of the ‘Full Engagement Scholar’; my third type of professional community member (put

forward in Chapter 3), the ‘Excellent Teacher’, would equate to something like ‘practicing professional’ if placed into the context of the nomenclature used by Bourner *et al.* (*ibid.*) above. As stated in Chapter 3 (Section 3.7), through my doctoral study, I have adopted the identity of a ‘Full Engagement Scholar’, a ‘researching professional’ in the nomenclature used by Bourner *et al.* (*ibid.*). From that perspective, it would appear that I have been well served by my choice of studying an EdD rather than a PhD.

#### **7.4: Review of the impact of my work**

In Section 7.2 (of this Chapter), I showed in Table 14 how all of my research activity had been funded through initiatives that had cascaded from the White Paper: *The future of higher education* (DfES, 2003). In Chapter 1, and at various points throughout the thesis, I have contended that doctoral study funded by (and within the context of) sector-wide initiatives has given me the opportunity to develop my academic practice, to research that developing practice and to develop professionally as a consequence of research undertaken. Of course, the sector investment made as a consequence of the White Paper (*ibid.*) was not to create opportunities for me to develop but to bolster the scholarship of learning and teaching so that the learning experiences of students may be enhanced as a result. One approach to review the return on investment would be to review the impact of the work undertaken by those who benefitted from the investments made.

As I mentioned in Chapter 1 (Section 1.1), I am one of fewer than ten people nationally who benefitted maximally from the investments that were made into the sector following the publication of the White Paper (*ibid.*) and as I argued



in Chapter 2 (Section 2.2.2) – I could be regarded as a ‘critical case’, i.e. if no impact could be evidenced as a consequence of my (funded) work then it is unlikely that any significant impact has been achieved through the work of those who benefitted (to any degree) from the investments made. Making such an assessment of impact is in alignment with a suggestion from Lester (2004) who calls for more authentic outputs in relation to professional doctorates - outputs that do not necessarily lead to publication in the conventional sense but instead speak to impact within the wider community of practice.

In relation to the academic practice that underpins the context-cases shared in this thesis, I can report a number of strands of impact:

- In relation to context-case 1, my use of video-lectures as a delivery method was used as the basis for a new suite of Foundation Degrees, firstly in Radiography and then in wider aspects of Health and Social Care. Video lecture technology was also adopted onto the Ultrasonography MSc programme in order to support the teaching of physics, this freed up classroom time for problem-solving workshops. In relation to district nursing, I worked with colleagues to produce video-lecture based resources to educate community district nurses on the care for patients with multiple sclerosis. This work was also supported by charities: The MS Trust and the MS Society.
- In relation to context-cases 2 and 3, the use of video as a way to collect data has subsequently been supported (by me) in a large range of contexts:

- To record, analyse and represent the lived experience of students with disabilities.
- To record, analyse and represent the lived experience of students in relation to induction processes.
- To record, analyse and represent the lived experience of international students.
- To use video techniques to allow people with learning disabilities to be involved in the selection of students onto the learning disabilities pathway of the nursing programme at Birmingham City University.
- To use video-based techniques to conduct evaluations of students' experiences of placement on paediatric intensive care.
- To support colleagues at the University of Greenwich to use video-based technology to gather student views on curriculum design process.

Less tangibly, but perhaps more importantly, my deep engagement in learning and teaching practice (through the roles that were created in my institution as a response to the White Paper (2003)) has led me to hold a fairly influential role at my current institution whereby I have significant input into the generation of all policy that relates to learning and teaching and much of the policy that relates to academic quality. At the time of thesis submission, I am on the cusp of leaving my role of Head of Curriculum Design and Academic Development at Birmingham City University to become Director of Learning Innovation and Professional Practice at another university, a role that holds responsibility for all aspects of learning and teaching, academic quality and student academic support. The White Paper (*ibid.*) has created a context in

my own institution(s) whereby 'Full Engagement Scholars' are being selected as the individuals entrusted to lead institutional policy relating to learning and teaching and academic quality; I would contend that the embedding of 'Full Engagement Scholars' into the decision-making mechanisms of universities represents a very good outcome in relation to the aims of the White Paper (*ibid.*).

### **7.5: A reflection on the effectiveness of this thesis**

This thesis spans ten years of engagement in academic practice; this has necessarily led to a broad focus through the inclusion of multiple case studies and professional contexts. While I acknowledge the value such an approach has brought, its limitations, which include the absence of detailed study of any single area, are also acknowledged.

### **7.6: Concluding remarks**

In Chapter 1 I set out the structure of this thesis making a case for my work to be used as an exemplar of practice following the sector investments made as a consequence of the White Paper (*ibid.*). In Chapter 2, I argued that the write-up of this thesis was itself a research activity in its own right, one that led to professional development. In Chapter 3, I continued to explore notions of professionalism and professional development and linked these concepts to experiential learning through engagement with a community of (academic) practice. In Chapters 4-6, I share accounts of academic activity with the unifying theme of video use, and I showed how undertaking research led to additional 'adjunct' learning. And finally, in Chapter 7, I have argued that a

professional doctorate is the right vehicle to support learning from the sorts of activities I have been undertaking. Furthermore, I have argued that the sorts of outputs I have generated (summarised in Section 7.1 of this Chapter) are inline with the expectations of a professional doctorate.

Of course my thesis and my learning do not exist in isolation. The EdD programme I enrolled upon has number of learning objectives to be fulfilled, I review them below, offering brief summaries of where evidence of achievement can be found (Table 16):

Table 16: EdD (*Learning and Learning Contexts*) learning objectives (University of Birmingham, 2004: p. 4).

<b>Learning Objectives: “By the end of the programme students will have provided evidence of:</b>	<b>Evidence offered within the thesis:</b>
<i>1. A critical understanding of how knowledge is generated, used and shared in learning communities;</i>	In Chapter 3 I offer a model of how experiential learning cascades from engagement with a community of practice.  In Chapter 5 I offer a model that describes how linguistic initiation is a prerequisite for meaningful engagement with a community of practice; furthermore I theorise how such communities of practice are hierarchical in their function.
<i>2. Using research to inform professional practice;</i>	Chapters 4, 5 and 6 describe three cases of how I used my research activity to inform my practice
<i>3. A critical understanding of how space and technology can affect learning and how learning can be embedded in a range of meaningful contexts;</i>	The ‘adjunct narrative’ of Chapter 4 (Section 4.5) offers a structured consideration of the cognitive and social affordances of physical and virtual learning spaces. Context-cases 1 and 2 are focussed on the use of technology within physical learning spaces.
<i>4. A capacity to engage critically with current research on learning and how it might be supported;</i>	Context-case 2, introduced in Chapter 5 engages with research relating to collaborative learning and shares my approach of researching students’ learning using video.
<i>5. A capacity to design and conduct research on an aspect of learning and its contexts which demonstrates originality, transparency, fitness for purpose, accessibility and a concern for ethical issues;</i>	Three discreet facets of practice-based research are shared through the thesis. Research tools include surveys, interviews, pre and post-tests and video-based discourse analysis.  The ethical issues relating to the use of video are explored in Section 6.3.3 (of Chapter 6).
<i>6. An ability to present systematic analyses of research to a broad range of users including other user communities;</i>	Aspects of this thesis have been shared, through publication, with a range of users through the Learning in Higher Education series of anthologies. Bartholomew (2014 – forthcoming); Bartholomew and Bartholomew (2011); Bartholomew <i>et al.</i> (2009); Bartholomew <i>et al.</i> (2010); Bartholomew <i>et al.</i> (2013);
<i>7. A capacity to update and extend skills and knowledge in the areas of information management, self-organisation, reflection and evaluation, risk management and relate these to professional learning contexts;</i>	The research (and related academic practice) activities I have undertaken over the duration of study have been diverse and comprehensive. I have developed new skills in relation to video production and analysis and project management. The way the thesis is constructed as a piece of case-study research makes the thesis rich in reflection. Chapter 6 describes stakeholder-aware models of evaluation and Chapter 7 has evaluated my learning as it relates to the expectations of doctoral study.
<i>8. Engaging with research networks that promote interdisciplinary research into learning.”</i>	Throughout my research activity, I have been a member of the International Society of the learning Sciences and a member of Jisc’s Learning and Teaching Practice Experts’ Group.

Given the expectations of the EdD programme, as communicated through its stated objectives (Table 16), the approach I have taken to research a themed spectrum of my academic practice would seem to be well aligned with need. Achievement of the learning objectives aside, there is no doubt in my mind

that my doctoral study – including the thesis write-up itself – has been a highly valuable learning opportunity, leading to a good deal of professional development (see Appendix 1 for how this maps to the expectations of the UK Professional Standards Framework for Higher Education). Furthermore, the structure that my doctoral study has brought to my academic practice has yielded additional value in respect of the sector investment made (in me) after the publication of the White Paper: *The future of higher education*; offering me an opportunity to share my practice in a coherent and collated manner.

## **Appendix 1**

### **'Mapping' of academic activity described in Chapters 4-6 to statements within the UKPSF**

In Section 2.1 I made claims that the activity that I describe in chapters four, five and six allow me to demonstrate activity that adheres to many of the statements that make up the three dimensions of the UKPSF. I justify each that I have made a claim for below:

- A1 – Design and plan learning activities and/or programme of study: Context-cases 1 and 2, as described in chapters four and five, offer accounts of the design and planning of learning activities.
- A2 – Teach and/or support learning: Context-cases 1 and 2 emerge from a teaching context.
- A3 – Assess and give feedback to learner: The online resources described in context-cases 1 and 2 include (formative) assessment activities that include automated and tutor-generated feedback mechanisms.
- A4 – Develop effective learning environments and approaches to student support and guidance: Context-cases 1 and 2 described research-informed activities specifically undertaken to support the development of effective learning environments.
- A5 – Engage in continuing professional development in the subjects/disciplines and their pedagogy, incorporating research, scholarship and the evaluation of professional practice: The entire

thesis is a case of professional development over a ten-year period.

Context cases 1 and 2 relate to the disciplinary field of diagnostic radiography.


- K1 – The subject material: Context-cases 1 and 2 emerge from a context of my clinical expertise in the interpretation of radiographic images. Context-case 3 emerges from my academic expertise in curriculum design.
- K2 – Appropriate methods for teaching and learning in the subject area and at the level of the academic programme: Context-cases 1 and 2 are informed by internationally recognised expertise in the deployment of technology-supported learning.
- K3 – How students learn, both generally and within their subject/disciplinary area(s): Context-cases 1 and 2 are informed by pedagogic experience as evidenced by my responsibility for all academic staff development at my university. Additionally, context-case 3 was specifically designed to observe student learning by making their cognition 'visible' through the fostering and recording of peer discourse.
- K4 – The use of appropriate learning technologies: Context-case 1 and 2 both have the use of technology-supported learning at their core.
- K5 – Methods for evaluating the effectiveness of teaching: The innovative teaching approaches described in context-cases 1 and 2 are both coupled with evaluations of the effectiveness of the teaching method. Both context-cases have some data that compare extant methods of teaching with alternative methods.



- K6 – The implications of quality assurance and quality enhancement for academic and professional practice with a particular focus on teaching: Context-case 3 describes approaches undertaken to involve stakeholders in curriculum design so as to promote programme team participation in curriculum design and quality enhancement practices. Additionally, this thesis forms part of my ongoing professional development and discusses professional development as a concept. Professional development of academic staff is, in and of itself, a manifestation of quality enhancement.
- V3 – Use evidence-informed approaches and the outcomes from research, scholarship and continuing professional development: All three of the context-cases were undertaken to inform aspects of academic practice. Furthermore, this thesis represents follow-on reflexive analysis of those three cases for the explicit purpose of facilitating my professional development.
- V4 – Acknowledge the wider context in which higher education operates recognising the implications for professional practice: Chapter 1 articulates my professional development with sector-wide priorities and the White Paper of 2003 – The Future of Higher Education; additionally, concepts of professionalism, student engagement and reward and recognition are discussed.

## Appendix 2

Marked up data from a computer supported collaborative learning session

Time reference	On screen	Student 1 Speech Act (Controlled Mouse)	Student 2 Speech Act	Student 3 Speech Act	Activity notes	Focus	Collaborative Marker
		There are these five pictures...			Points at screen		
0:18				So do we watch the PowerPoint first and then answer?		PREPARE	Question – task planning
0:23			Um...				Back-channel feedback
0:24				Do you know what I mean?			Question – task planning
0:32				Yeah. (1) in order to solve the problem posed...	(1) Reads from screen		Reply – task planning
0:35		So do we need to do this first?					Question – task planning
0:37		(1) Resources [1] in the form of a PowerPoint [2] presentation		Well no.....I don't know actually because it says here, look, um... (2) I have supplied you with some resources...[1] Yeah [2]	(1) Reads from screen (2) Reads from screen		Overlapping talk – supportive  Back-channel feedback
0:46		(1) Some websites and some pop-up comparison.... (trails)			(1) Reads from screen		
0:48				(1) (2) You will need to examine and discuss these together (3) in order to solve the problem posed	(1)Points at screen (2) Reads from screen (3) Supporting Gesture 		
0:52				Which is matching these			



0:53			Five x-rays (interjecting)				
0:54				Isn't it?			Question – task planning
0:54		Hmm... (confirmatory context)					Reply – task planning
0:55		So, do we need to do this first?					Question – task planning
0:58			(1) Is that the image banks [3] there or is the.... (trails)	Yeah [3]	Points at screen		Back-channel feedback  Question – task planning
1:01		(1) In order to help you be successful in matching these images you are invited to engage [4] with the resources below'.....so yeah, go to lung patterns, yeah?		Umm yeah, yeah [4]	(1) Reads from screen		Back-channel feedback  Question – task planning
1:06			Yeah				Reply – task planning
1:10		Go for it? [5]					Question – task planning
1:10			Yeah [5], we'll click for that one.				Reply – task planning
1:12		Right (1)			(1) Opens PowerPoint resource		
1:22		Ready?					Resource navigation – permission sought
1:22			Yeah [6]	Umm hmm [6] (confirmatory context)			Resource navigation – permission given

1:28	 <p>Lung Disease A Pattern Recognition Approach</p>		Right...			CO-EXPLORE	
1:29	 <p>• Diffuse Pattern (Shadowing) • Focal (local) Pattern (Shadowing)</p>	So, what that's saying is that diffuse is a broad area (1) and focal (2) <b>is specific [7]</b>	<b>A spot [7]</b>	<b>Local [7]</b>	<p>(1) Supporting gesture</p>  <p>(2) Supporting gesture</p> 		Overlapping talk – supportive
1:35		<b>Sort of spot [8]</b>		<b>Yeah [8]</b>			Overlapping talk – supportive
1:37				Diffuse...			
1:38	 <p>Diffuse      Focal</p>	(1)	<b>hmm</b>		(1) Advances slide		<b>Back-channel feedback</b>
1:39		So diffuse is just a sort of general sort of.....mushiness over the image					
1:43				<b>Yeah</b>			<b>Back-channel feedback</b>
1:44		And focal is like a lot of <b>little [9]</b> , <b>individual [10]</b>	<b>Spots [10]</b>	<b>Little [9]</b>			Overlapping talk – supportive
1:48				<b>Hmm mm (confirmatory context)</b>			<b>Back-channel feedback</b>
1:49		<b>Do you see that? Happy?</b>					<b>Resource</b>

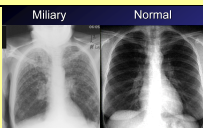
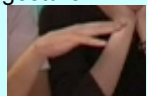
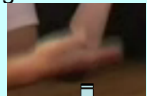
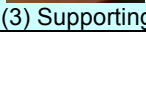
							navigation – permission sought
1:52			Yeah [11]	Yeah [11]			Resource navigation – permission given
1:53	<u>Diffuse Pulmonary Pattern</u> • Interstitial (reticular, linear) • Miliary (nodular) • Alveolar (blotchy, patchy)	(1)		There's not much difference between the two though, is there?	(1) Advances slide		Seeks agreement
1:53		No					Gives agreement
1:53			No				Gives agreement
1:54		(1) Diffuse pulmonary pattern, interstitial..			(1) Reads from screen		
1:57			(1) Reticular, linear		(1) Reads from screen		
1:59				(1) Interstitial	(1) Reads from screen		
2:01			(1) Nodular; alveolar [12], blotchy, patchy	What's reticular? [12]	(1) Reads from screen		Topic question
2:04		Erm....I'm not sure to be honest....linear, means obviously in lines [13]		Lines, yeah [13]			Overlapping talk – supportive Topic answer
2:07			lines				
2:08		Military means it's little nodules,					Offers opinion
2:10				Little nodules..			Acknowledges opinion
2:11			Perhaps reticular means.... (trails)				
2:12		Alveolar means it's just blotchy (1) and patchy.....OK?			(1) Supporting gesture		Offers opinion

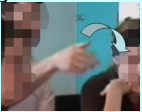
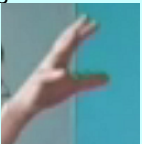
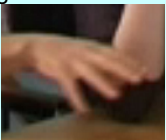
							
2:15			Yep				Acknowledges opinion
2:16		The difference between miliary and alveolar's....yeah.....OK?					Resource navigation – permission sought
2:24	 Interstitial Pattern (Reticular / Linear)	(1)	(2) Reticular, linear		(1) Advances slide (2) Reads from screen		
2:25		Linear					
2:26		It sort of spreads [14] out, fans out (2) like fingers I suppose, doesn't it?		So it's all so, sort of... (1)...spreading out isn't it? [14]	(1) supporting gesture (2) Mimicking gesture 		Overlapping talk – supportive  Seeks agreement  Offers opinion
2:31		See, (1) just like through here [15]		(2) And you can see the [15]..	(1) Points with cursor (2) Points to part of image		
2:33		There's like lines coming away isn't there?					Seeks agreement
2:35		That's the [16] horizontal fissure, yeah....erm...but it sort of...		And there's, there are lobe lines aren't there? (1) There's the horizontal fissure. [16]	(1) Draws out line on screen with finger		Overlapping talk – supportive  Offers opinion
2:41			But it's gone...		Points at screen		
2:42		Spiculated (1) isn't it?			(1) Supporting gesture		Seeks agreement

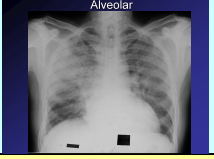
							
2:42			Yeah, there's like a....		Points at part of image		Gives agreement
2:44		It all comes away in sort of lines, like it's sort of stellate type thing.					Offers opinion
2:48				Yeah			Acknowledges opinion
2:49		OK?					Resource navigation – permission sought
2:50		Next one					
2:53		(1) Interstitial...normal			(1) Reads from screen		
2:54				See (1) that looks over exposed, do you know what I mean?	(1) Points at screen	DEBATE	Seeks agreement
2:56		Yeah, that looks dark to me [17] that does		It's too black [17]			Gives agreement Overlapping talk – supportive
2:57			Hmm (confirmatory context)				Gives agreement
2:58		You can see it's penetrated, you can see the spine, look (1)			(1) Points with cursor		Offers opinion
3:01				Yeah			Back-channel feedback
3:02		But then again, you can on that one (1)			(1) Points with cursor		

3:05			I'd say [18] (1), really that's like (interrupted)	Yeah I can see it [18]	(1) Points at screen		
3:07		Which shows that it's, there's more lung markings there [19], it's the same sort of exposure but there's more lung markings on that one than there is on that one (1)	Hmm [19] (confirmatory context)		(1) Points with cursor		Back-channel feedback Offers opinion
3:14				Yeah			
3:15		OK, next.					
3:19		Oop		Woop (laughs (at size of image?)) oooo!		CO-EXPLORE	
3:21		That's just showing another interstitial					Offers opinion
3:22			That's the....(1)..yeah		(1) points at screen		
3:23		Just enlarged.					
3:24				Yeah			Back-channel feedback
3:26		(1)			(1) Advances slide		
3:26		Nodular					
3:28		OK, so.... [20]	Oh yeah, that's the [20] nodules (1) here aren't they?		(1) Points at screen	DEBATE	Seeks agreement
3:30		Yeah, so sort of... (trails)					
3:31				Hmm.... But you're right though, it does look like, um..... the alveolar, doesn't it?			Seeks agreement
3:36		Hmm [21] (confirmatory context)	Hmm [21] (confirmatory context)				Gives agreement




3:37				They, those ones, they look like alveolar ones			Offers opinion
3:40		Hmm (confirmatory context)					Acknowledges opinion
3:40				Whereas this sort of there (1) looks like, like it's a speckly, isn't it?	(1) Points at screen		Seeks agreement
3:44		Hmm (confirmatory context)					Gives agreement
3:45		OK, happy with that?				CO-EXPLORE	Resource navigation – permission sought
3:48				Yeah			Resource navigation – permission given
3:49			Hmm (confirmatory context)				Resource navigation – permission given
3:50		(1) So, military (2)			(1) Advances slide (2) Points at screen		
3:52		Yeah that's a good [22] way of looking at it [23]	So it looks a bit like, sort of, like you spattered it with paint (1) and it ...[22] as it goes down [23] (2) it's becoming like, say, gone flick with the paintbrush (3), loads at the top (4) and less at the bottom (5).	Yeah, yeah [22]	(1) Supporting gesture  (2) Supporting gesture  (3) Supporting 	CONCEPT CONSTRUCTION	Offers opinion Overlapping talk – supportive

					<p>gesture</p>  <p>(4) Supporting gesture</p>  <p>(5) Supporting gesture</p> 		
4:04		Umm, yeah,					Acknowledges opinion
4:04				Yeah			Back-channel feedback
4:05		I think I like that					
4:05		Hmm [24] (confirmatory context)	Hmm [24] (confirmatory context)	But then TB is, is in the apices isn't it? [24] (1), so.. (trails)	(1) Points at screen		Back-channel feedback Seeks agreement
4:09				So...if it was, you know, miliary..			
4:10			Hmm				Back-channel feedback
4:11		OK					

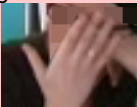

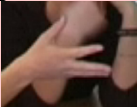
4:12							
4:13		(1) Alveolar [25]		(1) Alveolar [25]	(1) Reads from screen	CO-EXPLORE	Overlapping talk - supportive
4:16		Right....					
4:19				That doesn't look like nodules does it? (1)	(1) Points at screen	DEBATE	Seeks agreement
4:20		No					Gives agreement
4:21			It looks like (1)... (interrupted)		(1) Points at screen		
4:22			(1) It looks like the [26] lungs are here and not filling the whole... (2)	This window's not a nodule though is it? It's more...[26] (trails)	(1) Points at screen (2) Traces out whole of chest image with finger		Seeks agreement Offers opinion
4:26		The thing is, I suppose, its got there (1), there (2), there [27] (3), here [28] (4), down there. There's like sort of.... It's like a speckled effect [29] (5) but it's more sort of localised (6) I think	Hmm [27] (confirmatory context)	Yeah [28] Yeah [29]	(1) Points with cursor (2) Points with cursor (3) Points with cursor (4) Points with cursor (5) Supporting gesture  (6) Supporting gesture		Back-channel feedback Offers opinion

							
		Yeah, sure [30]		Can we go back, do you know when you had them [30] in a three things and just see what they... (trails)		PREPARE	Resource navigation – permission sought  Resource navigation – permission given
		See....I want to see a comparison between miliary, which is that one....					
4:45				Yeah			Back-channel feedback
		Like you say, that's like a paint flick (1)			(1) supporting gesture {matches gesture (3) of other participant at time index 3:52} 	DEBATE	
4:48			Hmm (Confirmatory context)				Back-channel feedback
4:58		Whereas that one (1)... is like, aye, there, you can see nodules here, here [31], it's sort of larger in appearance...while [32], whereas miliary is smaller in appearance.	Yeah [31]	Yeah [32]	(1) Points with cursor		Back-channel feedback  Offers opinion
5:00			Hmm (confirmatory context)				Back-channel feedback

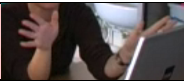
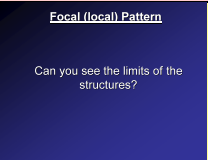
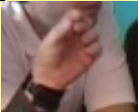
5:00				Yeah			Back-channel feedback
5:01		You see that?					Seeks agreement
5:01				Yeah			Gives agreement
5:02		That's what I think anyway.					
5:03				Yeah			Back-channel feedback
5:04		Ok, next one (1)			(1) Advances slide		
5:06		Alveolar versus normal, yeah, fair enough					
5:13		I think, I think the thing is, the important comparison is the difference in alveolar... the difference is not between alveolar and normal, <i>but between alveolar and [32] miliary</i>		<i>But between the other ones....yeah [32]</i>			<i>Overlapping talk – supportive</i> Offers opinion
5:20			Yeah				Acknowledges opinion
5:20				Yeah, I agree			Acknowledges opinion
5:23		Right then... (1)			(1) Advances slide		
5:24			Hmm				Back-channel feedback
5:25				What are we supposed to do here then?		CO-EXPLORE	Question – task planning
5:26		That's shadowing in the sort of	Hmm [33] (confirmatory)				Back-channel

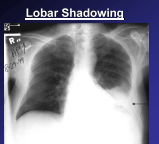
		[33] middle..... regions	context)				feedback
							Offers opinion
5:31		That's the, sort of like the err (1) miliary one isn't it?			(1) Supporting gesture 'paint flick' gesture 	DEBATE	Seeks agreement
5:33		Hmm [34] (confirmatory context)	Hmm, only up the other way isn't it compared with [34] what we were looking at earlier 'cos that went down (1) and this is going up [35] (2)	Hmm [35] (confirmatory context)	(1) supporting gesture  (2) supporting gesture 		Back-channel feedback Offers opinion
5:37		It's probably [36] confined to certain lobes then [37] isn't it?	Hmm [37] (confirmatory context)				Seeks agreement Gives agreement
5:40				But then, then it could be the projection though because the lung, these ribs (1) are quite flattened out, aren't they? So...	(1) Points at screen		Seeks agreement
5:44		Hmm (confirmatory context)					Gives agreement
5:46				I wouldn't take..			
5:47		Yeah					Back-channel feedback
5:48				Do you know what I mean? So.....			Seeks agreement
5:52		OK? Next one?					Resource


							navigation – permission sought
			Um-hmm (confirmatory context)				Resource navigation – permission given
				Hmm			Back-channel feedback
5:58		I'm not sure what we're supposed to do [38]		That's (1) more s.. [38] , like dapple isn't it?	(1) points at screen		Seeks agreement  Question – task planning
6:00			Hmm (Confirmatory context)				Gives agreement
6:00				So...			
6:01		That's a sort of miliary type thing that is [39]		So it might be [39] miliary, yeah.			Offers opinion
6:04		I'd say that one's miliary as well					Offers opinion
6:07		Nice shoulder..... whereas that one, I would say is alveolar					Offers opinion
6:11			Yeah, definite [40] nodules there aren't there?	(1) Yeah, 'cos it's like sort of nodules [40]	(1) points at screen		Acknowledges opinion  Overlapping talk – supportive  Seeks agreement
6:15		There's something happening at the top here (1) , it's very dark			(1) Points with cursor		Offers opinion
				I don't know (disagreement context)			Acknowledges opinion

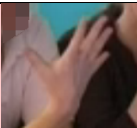
6:18		Is that a lobectomy, do you think?					Seeks agreement
6:21		What does that, no...that'd be filled in wouldn't it [41], white (2), sorry yeah [42]	White, hmm (Confirmatory context) [42]	No, it'd, it'd look [41] white (1) [42]	(1) Supporting gesture  (2) Supporting gesture Mirrors gesture (1) 		Overlapping talk – supportive
6:24			So maybe, maybe it's 'cos the extra exposure they've used (1) to		(1) Supporting gesture 		Offers opinion
6:28		Hmm					Back-channel feedback
6:28			To get through the.. [43]	I think it might just be on the computer [43]			
6:29			Yeah				Back-channel feedback
6:31		You've got the lob... it's the err, alveolar thing, you've got like say the localised areas of					Offers opinion
6:37				blobs			
6:37		Blobs [44], yeah for the want of a better word	Hmm [44] (Confirmatory context)				
6:41		See, that one is sort of all over					Offers opinion
6:43				Is that, no but, do you not think it's (1) ...oh, I don't know actually	(1) Points at screen		Acknowledges opinion
6:46		Well, [45]		What I was going to say is do you not [45] think it looks	(1) Supporting gesture		Back-channel feedback

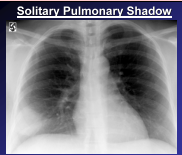


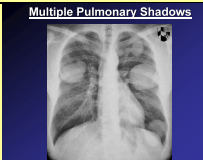
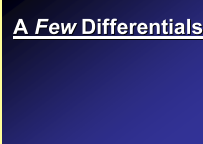
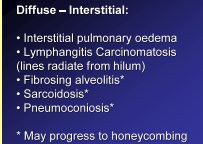
				like lines (1) coming out			
6:48		linear					
6:48		It's not, it's just a general [46]...specially down the bottom. It's just a general grey area down here		But it's not is it, its just quite dappley [46]			Offers opinion
6:54				Fuzziness			
6:54		It's not got any sort of.... texture to it, this bit around here					Offers opinion
6:57				Hmm (Confirmatory context)			Acknowledges opinion
6:58		Is a bit, sort of, paint splatter [47] (1) I'd say it was miliary myself, yeah.	Hmm [47] (Confirmatory context)	I'd say it was miliary [47]	(1) Supporting gesture – Paint flick gesture 		Overlapping talk – supportive Offers opinion Back-channel feedback
7:03		I would as well					Acknowledges opinion
7:06		(1) Can you see the limits [48]		Limits [48]	(1) Reads from screen	CO-EXPLORE	Overlapping talk - supportive
7:08				of the structures? OK,			
7:11		That's for local, err f.. focal.... Limits of the structures..					
7:16		With the focal one [49]		So is it, in regards to the pictures [49] that are next?			Question – task planning
7:20		Focal, yeah, you can see the limits because they're like (1)			(1) Supporting gesture 		Offers opinion

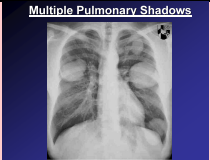
7:22			Hmm (Confirmatory context)				Acknowledges opinion
7:22		Round blobs					
7:24			It's localised [50] spots isn't it?	Oh, of the structures [50]			Seeks agreement
7:24		Hmm (Confirmatory context)					Gives agreement
7:25			Yeah				Gives agreement
7:26			(1) lobar shadowing		(1) Reads from screen		
7:30		(1) lobar shadowing, oh yeah, you can see it down there (2), left lower			(1) Reading from screen (2) Points with cursor		Offers opinion
7:34				Yeah, but is..., you can't draw a line round it (1) could you?	(1) Points at screen	DEBATE	Acknowledges opinion  Seeks agreement
7:37		No					Gives agreement
7:37			Umm, no				Gives agreement
7:40			It looks like it is, yeah				
7:42		But you can draw a line across the top (1), you can't draw a line around the rest of it because it's taking up the whole of the....			(1) Points with cursor		Offers opinion
7:46		No, there's no air [52] to sort of draw a line around [53] Hmm [54]	There's no [51] air though is there? [52]	Yeah [51] Yeah, but where does it stop? [53] Do you know what I mean, it [54] looks quite...			Back-channel feedback  Overlapping talk - supportive

7:52		I'd say it's alright					Offers opinion
7:53				Yeah, but...			Acknowledges opinion
7:56		That might be breast tissue just up there, round here (1)			(1) Points with cursor		Offers opinion
7:58		Yeah [55]		It might be a rib [55], 'cos that rib just (1)... there.	(1) Points at screen		Offers opinion
8:03		OK, next one					
8:07		See, that's up in the upper lobe here					Offers opinion
8:08			Hmm (Confirmatory context)				Back-channel feedback
8:09				I'd say that was miliary			Offers opinion
8:11		Yeah...					Back-channel feedback
8:14		Having said that there's a lot of spiculation sort of down here (1) isn't there?, so it's sort of linear			(1) Points with cursor		Seeks agreement
8:18				Mind you, that's quite linear there (1)	(1) Points at screen		Offers opinion
8:19		Through the bottom, so (1), d'you see (2) the way it goes through there and down there. There's like lines and...			(1) Points at screen (2) Points with cursor		Offers opinion
8:26				hmm			Acknowledges opinion
8:27		To, to an extent.. of, yeah [56]	It's very (1) localised around here as well, isn't it [56] ...sorry		(1) Points at screen		
8:30		It's like all that's just, I mean sometimes it's difficult to tell the difference between the normal	Sometimes [57] (1), you get them end on and they look like that don't they?		(1) supporting gesture		Seeks agreement

		hilar markings and not [57]					
8:37		See, that's like linear down the bottom here (1) but it's miliary at the top.			(1) Points with cursor		Offers opinion
8:41				Miliary at the top, yeah			Acknowledges opinion
8:42		OK					
8:43				Well, I suppose you could have both couldn't you?			Seeks agreement
8:46		Well yeah, I can't see any reason why you can't, I mean isn't there...(1)			(1) advances slide		Gives agreement
8:48		(1) Localised alveolar pattern [58]		(1) Alveolar pattern [58]	(1) Reads from screen	CO-EXPLORE	Overlapping talk – supportive
8:52				Hmm			Back-channel feedback
8:52		Well, there you go...					
8:52			I'd say that's in one, one lung				Offers opinion
8:54		Umm hmm (Confirmatory context)					Acknowledges opinion
8:56				Was that, have we seen that one then?			Question – task planning
8:57		No, I think that's a new one					
8:59				That's a new one			
9:01		So it's... on the middle area of that (1)			(1) Points with cursor	DEBATE	
9:05				There's (1) also a small area here, but then you can see the little nodules on there	(1) Points at screen		Offers opinion
9:08		Hmm (Confirmatory context)					Acknowledges opinion

9:08			Hmm (Confirmatory context), there's one (1) there isn't there?, you can see it.		(1) Points at screen		Acknowledges opinion  Seeks agreement
9:11				Hmm (Confirmatory context)			Gives agreement
9:12		OK, shall we go..					
9:12				But then it's not nodular though is it? It's not nodules			Seeks agreement
9:15		Nodular is [59] miliary		Alveolar [59]			
9:16				Yeah, sorry (1) but I'm saying that	(1) Points at screen		
9:18		Yeah (interrupts), that's what you were saying wasn't it? Nodular miliary					
9:21		There's, there's sort of lines [60] coming down through here (1) as well...		Yeah (1) but they look like little sort of.....dense areas, do you know what I mean like little... nodules [60]	(1) Points with cursor		Offers opinion
9:29				Yeah (1).....there's everything!	(1) laughs, pulls confused face		Offers opinion
9:31		There's everything! What'll we do? (1)			(1) Advances slide		
9:33			(1) Solitary pulmonary shadow		(1) Reads from screen		
9:35		That's just that there [61]	That's just [61] this one (1), You can't				
9:37		Hmm					Back-channel feedback
9:38				Hmm			Back-channel feedback
9:40		Yeah, that's [62] very sort of narrow zone of transition [63]	It's very sort of [63] round isn't it?	But you could draw a line around that one couldn't you? [62]			Seeks agreement

9:44				Yeah			Offers opinion Gives agreement
9:46		Hmm (Confirmatory context) (1)			(1) Advances slide	CO-EXPLORE	Gives agreement
9:48		Woop		Oop			
9:50		By.... [64]	Cor blimey! [64]	Oh god [64]			Overlapping talk - supportive
9:51		Err, I think we can all see that.					
9:53			That's multiple pulmonary shadows, yeah.				
9:54		Hmm (Confirmatory context)					Back-channel feedback
9:56		See, it's (1)... the lung markings are awful, <i>you can see it's all a bit, it's like they've aspirated something isn't it..?</i>			(1) Points with cursor		Offers opinion Seeks agreement
10:01			Hmm				Back-channel feedback
10:05		Aspirated barium? (1)			(1) Advances slide		
10:07		(1) A few differentials (2)			(1) Reads from screen (2) Reads from screen		
10:11		OK					
10:12				It just doesn't look familiar			
10:16				(1) Lymphangitis..	(1) Reads from		

					screen		
10:17		(1) Interstitial pulmonary oedema			(1) Reads from screen		
10:21			(1) Lymphangitis carcinomatosis		(1) Reads from screen		
10:22		(1) Lines radiate from hilum			(1) Reads from screen		
10:30		So, pneumo..con..					
10:31		(2)		Yeah, that's what I was thinking before (1) like honeycombing, if you go back to the last image....(2) You know you said? (3) Do you know what I mean? Like, you can see where it's all (4)	(1) Points at screen (2) Advances slide (3) Points at screen (4) Supporting gesture (pulling apart)	<b>DEBATE</b>	Seeks agreement Offers opinion
10:41		Hmm, it looks like it's being pulled apart [65], yeah		Almost like it's being pulled apart [65]			Overlapping talk – supportive Concept reinforcement
10:43		Hmm [66]		Do you know what I mean? But I couldn't think of the, how to describe [66] it.			Seeks agreement
10:50	<b>Diffuse – Interstitial:</b> • Interstitial pulmonary oedema • Lymphangitis Carcinomatosis (lines radiate from hilum) • Fibrosing alveolitis* • Sarcoidosis* • Pneumoconiosis*  * May progress to honeycombing	(1)			(1) Advances slide	<b>CO-EXPLORE</b>	
10:50				(1) Sarcoidosis	(1) Reads from screen		
10:52		(1) Pneumoconiosis			(1) Reads from screen		

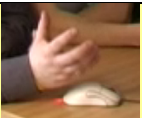
10:55		OK? Next one (1)			(1) Advances slide		Resource navigation – permission sought
10:58		(1) Honeycombing, interstitial lines become thicker and more pronounced. So instead of having small lines, they just become thick. Like that (2) and [67] that (2) and that.		Hmm [67] (Confirmatory context)	(1) Reads from screen (2) Points with cursor		Resource navigation – permission given Offers opinion
11:10		Happy? Yeah?					Resource navigation – permission sought
11:13		Yeah, you see there's a honeycomb sort of area (1) around there isn't there?			(1) Points with cursor		Seeks agreement
11:17		Yeah [68]	Some of these, they almost look as if they've become almost sort of calcified don't [68] they?, because they're so hard there.				Seeks agreement
11:22		Interstitial lines become more pronounced [69]		Plus, that's what I thought it was where it becomes like almost calcified (1) and then the other tissue pulls away on the end [69] in between.	(1) Supporting gesture 		Offers opinion
11:29		Yeah, OK?				CO-EXPLORE	Resource navigation – permission sought
11:30			Hmm – mm (Confirmatory context)				Resource navigation – permission given



11:31	Diffuse – Miliary: • Miliary TB • Miliary metastases • Chickenpox (Varicella) pneumonia • Sarcoidosis	(1)			(1) Advances slide		
11:33		(1) Diffuse miliary, TB [70] , miliary mets	(1) Miliary TB, Miliary metastases [70]		(1) Reads from screen		Overlapping talk - supportive
11:38			(1) Chicken pox		(1) Reads from screen		
11:39		Yeah, I've heard of that, I've seen some of that.				DEBATE	Offers opinion
11:42				What's that?			Acknowledges opinion
11:43		Chicken pox, I saw that, I that the other week.					Offers opinion
11:45				Really?			
11:45		Someone with chicken pox, blotches all over the chest, yeah.					Offers opinion
11:49				Really? I've seen miliary TB (1). Umm, I've not seen...what, was it an adult?	(1) Points at screen		Offers opinion Acknowledges opinion
11:56		Yeah it was an adult, yeah, but obviously he'd had it and it'd scarred him as a child or something.					
11:59				Oh right.			Acknowledges opinion
12:00		Apparently.					
12:02		Next one?				PREPARE	Resource navigation – permission sought
12:03			Hmm (Confirmatory context)				Resource navigation – permission given

12:03				Yeah			Resource navigation – permission given
12:04	Diffuse Alveolar : • Pulmonary oedema • Pneumocystis carinii • ARDS • Fat embolism	(1)			(1) Advances slide		
12:05				Diffuse..			
12:06	Diffuse – Miliary: • Miliary TB • Miliary metastases • Chickenpox (Varicella) pneumonia • Sarcoidosis	Sorry, hold on (1) that was diffuse miliary [71] (2)	Miliary [71]	Miliary [71]	(1) Moves slides back (2) Advances slide		Overlapping talk - supportive
12:09	Diffuse Alveolar : • Pulmonary oedema • Pneumocystis carinii • ARDS • Fat embolism	(1) Pulmonary oedema [72]	(1) Diffuse alveolar, pulmonary oedema [72]	(1) Pulmonary oedema [72]	(1) Reads from screen	CO-EXPLORE	Overlapping talk - supportive
12:12			(2) Pneumocystis... [73]	That's umm [73] (1)...oh, no.... Is that what you get with, umm, AIDS?	(1) Points at screen (2) Reads from screen	DEBATE	Topic question
12:20		I don't know. I've never heard of that to be honest. Never of heard of it –pneumocystis carinii. Never heard of it.					Topic answer
12:26		Or 'ards' [74]		I thought [74] , I think that's the AIDS, the AIDS related one.			Offers opinion
12:31		(1) Fat embolism Ok, next?			(1) Reads from screen	CO-EXPLORE	Resource navigation – permission sought

12:33	<u>Focal – Lobar Shadowing :</u> First think... • Consolidation? • or Collapse?	(1)	Yep		(1) Advances slide		Resource navigation – permission given
12:35				What was that, sorry, what was that bottom one again?			Resource navigation – permission sought
12:36	<u>Diffuse Alveolar :</u> • Pulmonary oedema • Pneumocystis carinii • ARDS • Fat embolism	(1) Fat embolism			(1) Moves slides back		
12:36			Fat embolism				
12:37				Fat embolism			
12:38		OK?					Resource navigation – permission sought
12:39	<u>Focal – Lobar Shadowing :</u> First think... • Consolidation? • or Collapse?	(1)		OK	(1) Advances slide		Resource navigation – permission given
12:40		(1) Focal lobar...			(1) Reads from screen		
12:41			(1) Consolidation or collapse		(1) Reads from screen		
12:43		(1) Consolidation or collapse			(1) Reads from screen		
12:46		Well, that's obvious, consolidation [75] (1), just turns into like a..		Yeah [75]	(1) Supporting gesture		Back-channel feedback Offers opinion

							
12:50			..a lump of gunk				
12:52	<b>Focal – Solitary pulmonary :</b> <ul style="list-style-type: none"> <li>• 'Round' Pneumonia</li> <li>• Lung Primary</li> <li>• Lung abscess</li> <li>• Hamartoma ('popcorn' calcification)</li> </ul>	Gunk, yeah gunk, collapse....same. (1)			(1) Advances slide		
12:57		(1) Focal solitary... pulmonary			(1) Reads from screen		
12:58				Hmm			Back-channel feedback
13:00		(1) Round pneumonia, lung primary, lung abscess, solitary haematoma, popcorn ..			(1) Reads from screen		
13:10				Popcorn calcification, I don't think I would eat that			Offers opinion
13:13			(1) no, no		(1) laughs		Back-channel feedback
13:14		Oh, I'll remember that one I think. So, popcorn calcification					
13:19				Lung abscess			
13:20	<b>Focal – Multiple Pulmonary:</b> <ul style="list-style-type: none"> <li>• Metastases</li> <li>• Secondary TB</li> <li>• Rheumatoid nodules</li> </ul>	(1)			(1) Advances slide		
13:20				Oh right			Back-channel feedback
13:21		Oh sorry (1)			(1) Moves slides back		

13:22	<b>Focal – Solitary pulmonary :</b> <ul style="list-style-type: none"> <li>• 'Round' Pneumonia</li> <li>• Lung Primary</li> <li>• Lung abscess</li> <li>• Hamartoma ('popcorn' calcification)</li> </ul>	Lung abscess, that's for a solitary pulmonary..					
13:24			Hmm (Confirmatory context)				Back-channel feedback
13:26				Hmm (Confirmatory context)			Back-channel feedback
13:28		OK? [76]		OK [76]			
13:29	<b>Focal – Multiple Pulmonary:</b> <ul style="list-style-type: none"> <li>• Metastases</li> <li>• Secondary TB</li> <li>• Rheumatoid nodules</li> </ul>	(1)			(1) Advances slide		
13:29		(1) Multiple [77] pulmonary, mets obviously, (1) secondary TB, rheumatoid nodules [78]	(1) Focal, multiple.. [77] (1) Rheumatoid nodules [78]		(1) Reads from screen	DEBATE	Overlapping talk - supportive
13:35			Oh yeah, I've heard of that [79], I've heard of rheumatoid nodules.	Oh yeah, I'd forgotten about that [79]			Overlapping talk - supportive
13:37				Umm (Confirmatory context)			Back-channel feedback
13:38		Yeah, you can get rheumatoid nodules, yeah.					Offers opinion
13:42		OK?					Resource navigation – permission sought
13:43				Umm hmm (Confirmatory context)			Resource navigation – permission given
13:44		(1) And that's the end.			(1) Advances slide		
13:46		Right, so if we close that					
13:47				Oh, do you want to go back	(1) Asks		Question – task

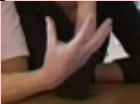

				over it, are we allowed to go back over it if we want to? (1)	facilitator 'are we allowed to go back over it?' Reply: 'Yeah, you can just roll the wheel back up'.		planning
13:56	<ul style="list-style-type: none"> <li>• Diffuse Pattern (Shadowing)</li> <li>• Focal (local) Pattern (Shadowing)</li> </ul>	(1) There we go			(1) Re-launches presentation		
13:58				Just, you know, quickly.			Resource navigation – permission sought
13:59		Flick through it					Resource navigation – permission given
13:59				So, diffuse pattern shadowing		CO-EXPLORE	
14:01			(1) Focal, local, pattern, shadowing		(1) Reads from screen		
14:02		Diffuse means (1) across the whole area [80], focal means [81] (2) localised	Yeah [80]	Local [81]	(1) Supporting gesture  (2) Supporting gesture 		<i>Offers opinion</i>  Overlapping talk – supportive  Back-channel feedback
14:06			Yeah				Back-channel feedback

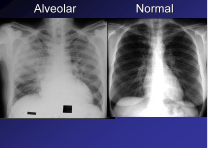


14:07		OK? (1)			(1) Advances slide		Resource navigation – permission sought
14:08		Yeah, you can see it there [82] (1)		Diffuse, focal [82]	(1) Points with cursor		
14:09		Focal, so that's like lots of little blotches [83]	Definitely lots of [83] spots				Overlapping talk - supportive
14:11		That's just general.. (1) .. naff chest.			(1) Points with cursor		Offers opinion
14:16		(1)		So, there's interstitial, miliary, alveolar	(1) Advances slide		
14:19		Yep					Back-channel feedback
14:20				Which is linear, nodular, patchy			
14:22		Nodular is like (1) you [84] said flicking of the paint, I like that analogy.	Yeah [84]	Miliary [84]	(1) Supporting gesture 		Back-channel feedback Concept reinforcement
14:27		Alveolar, blotchy					
14:28			Blotchy, patchy, yeah				
14:29				OK			Back-channel feedback
14:30		Wup (1)			(1) Advances slide		
14:31		Yep, so that's the lines (1)			(1) Supporting gesture		


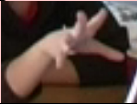

							
14:33			Yeah				Back-channel feedback
14:33				They're the lines			Gives agreement
14:34		OK? (1)			(1) Advances slide		Resource navigation – permission sought
14:36		Yeah, you can see the [85] lines there compared to normal	Can see that, yeah [85]			DEBATE	Overlapping talk - supportive
14:38		(1) I still think that's err..			(1) Points with cursor		
14:39		Over-exposed [86]		I think it's just...[86]			
14:40		Hmm [87] (Confirmatory context)	Yeah, it almost makes it look under exposed [87], doesn't it?				Seeks agreement Back-channel feedback
14:43				Yeah			Gives agreement
14:44			Yeah, interstitial			CO-EXPLORE	
14:45		OK?					Resource navigation – permission sought
14:46				Yep			Resource navigation – permission given



14:47		(1)			(1) Advances slide		
14:47		Miliary		Miliary Nodules			
14:49		Like you said, it's (1) general blotchiness across the whole of the...			(1) Supporting gesture 		Concept reinforcement
14:52				Dappled, yeah.			
14:54		(1) There's the comparison to normal			(1) Advances slide		
14:58		(1) Alveolar is lot more sort of bigger areas, I think, it's like, err, miliary but with larger blobs [88] basically.	Hmm [88] (Confirmatory context)		(1) Advances slide	DEBATE	Back-channel feedback Offers opinion
15:05				It's more like, you can imagine it's (1) smeared isn't it?	(1) Supporting gesture 		Seeks agreement
15:07			Also, it's like (1) the lung's partly (2).....		(1) Points at screen (2) Points at screen		Offers opinion
15:10		Hmm					Back-channel feedback

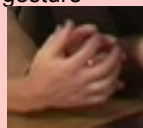

15:12				Yeah, is that not the scapula? (1).... And there's the scapula (1)	(1) Points at screen		Offers opinion
15:16			(1) right...right..		(1) Points at screen		Acknowledges opinion
15:18		Oh yeah, that line, just coming down [89] here (1) like that	(2) Yeah, yeah [89]		(1) Points with cursor (2) Points at screen		Acknowledges opinion
15:21				Isn't that the scapula?			Topic question
15:22			I don't know				Topic answer
15:23				(1) 'Cos you can see the bottom of the scapula there and then (whistles) (2)	(1) Points at screen (2) Traces line up screen with finger		Offers opinion
15:27		Well. The scap.. it comes all the way up to there (1) The scapula doesn't come up to there. [90]	Hmm [90] (Confirmatory context)	Yeah, it's strange isn't it? [90]	(1) Points with cursor		Back-channel feedback  Offers opinion
15:31		Hmm [92]	It's just the way (1) it's like much paler there anyway isn't it? Normally, when you [91] look at a normal (2) chest x-ray that'll be [92] (3) the same colour there really wouldn't it?	That's right, yeah [91]	(1) Points at screen (2) Supporting gesture  (3) Supporting gesture 		Seeks agreement  Gives agreement

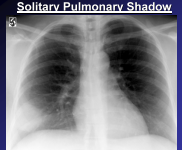
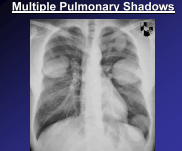

15:40		(1) That's in comparison to normal			(1) Advances slide		
15:42				I think it's easier to see the scapula on that last one (1)	(1) Points at screen		Offers opinion
15:45		Yeah					Acknowledges opinion
15:45			Hmm (Confirmatory context)				Acknowledges opinion
15:47		Scapula comes up here (1), you can see it.			(1) Points with cursor		Offers opinion
15:48				Yeah, but look at where the arm is (1)	(1) Points at screen		Offers opinion
15:49		Yeah					Acknowledges opinion
15:50				It's up (1) isn't it?	(1) demonstrates with own arm 		Seeks agreement
15:52		OK (1), umm....that one was like miliary we think up there [93] didn't we?	Hmm [93] (Confirmatory context)				Offers opinion
15:58				Umm....was it? I didn't think we could tell on that one			
16:02		Umm, I'm not a hundred percent [94]		Umm a random mixture [94] (1), yeah a random mixture	(1) laughs		
16:05		Just a naff chest (1)			(1) Advances slide		Offers opinion

16:07		That's the linear one I think					Offers opinion
16:09				Do you think? I thought (1) we said that one looked quite dappled (2), dappley (2)	(1) Points at screen (2) Supporting gesture 		Offers opinion
16:13		I'd say that (1) one was more dappled than that (2) one is, there's certainly lines (3) that you can see.....oh, I don't know			(1) Moves slides back (2) Advances slide (3) Points with cursor		Offers opinion
16:18			It would be (1) nice if it had what it was on the bottom, wouldn't it?		(1) Points at screen		
16:20		Hmm, well there we go					
16:22			Tell for definite then [95]	Well, I suppose we've got to guess [95] haven't we?			
16:23			Yeah				
16:25		(1) That's more like alveolar 'cos we've got the blotches [96]	Hmm [96] Confirmatory context	Yeah, I agree with that			Back-channel feedback Offers opinion
16:27				Yeah			Back-channel feedback
16:31		Yep					
16:32			Hmm (Confirmatory context)				Back-channel feedback
16:33				Yeah			Back-channel feedback

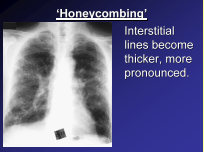
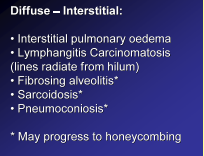
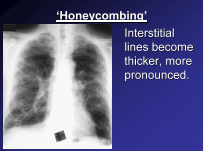
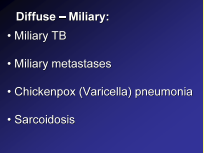
16:33		(1) That's just a sort of shadowing, that's, that's alveolar [97]	That's.. [97] (trails)		(1) Advances slide	CO-EXPLORE	Offers opinion
16:36				Yeah			Back-channel feedback
16:36		Because you've got the larger blobs (1)			(1) Points with cursor		Offers opinion
16:37		Hmm [98] (Confirmatory context)	Hmm [98] (Confirmatory context)	Yes, that's definite isn't it, I think [98]			Back-channel feedback Acknowledges opinion
16:42		(1) (2) Focal pattern For something to be focal then, it's obviously you've got to be able to see the limits of the structure then, that's what that's saying			(1) Advances slide (2) Reads from screen		Offers opinion
16:47			Yeah, that's right				Back-channel feedback
16:49				Yeah			Back-channel feedback
16:50		(1)	It's got [99] a definite...	OK [99]	(1) Advances slide		Back-channel feedback
16:51		Hmm					Back-channel feedback
16:52				Area to it, yeah			
16:53		Narrow zone of transition [100] as we did, when we did the bone	Say, like (2) there, you've got a.. [100]		(2) Points at screen	CONCEPT CONSTRUCTION	Offers opinion
16:56			Yeah				Back-channel feedback
16:57				Yeah			Back-channel

16:57			Excellent, yeah				feedback Concept reinforcement
16:59				So yeah, you would say (1) that was	(1) Points at screen		
17:00		(1) So that, that's got a certain area (2) to it			(1) Advances slide (2) Points with cursor		Offers opinion
17:02			Hmm [101] (Confirmatory context)	Yeah [101]			Acknowledges opinion
17:03		Although it's fuzzy, there's a definite (1) area to it			(1) Points with cursor		Offers opinion
17:05			Yeah [102]	Yeah [102] you can definitely say it was in the upper lobe couldn't you?			Acknowledges opinion Seeks agreement
17:07		Yeah you can narrow it down to an area.					Gives agreement
17:11	 Localised alveolar pattern	(1) (2) Localised alveolar pattern, it's (3) in that region there.			(1) Advances slide (2) Reads from screen (3) Points with cursor		Offers opinion
17:13			Hmm (Confirmatory context)				Acknowledges opinion
17:14				Yeah			Acknowledges opinion
17:15		Whereas in the rest of it, it seems OK (1)			(1) Advances slide		Offers opinion
17:19	 Solitary Pulmonary Shadow	Oh that's clearly (1)....			(1) Points with cursor		

17:21			Hmm [103] (Confirmatory context)	(1) Solitary pulmonary [103] shadow	(1) Reads from screen		Back-channel feedback
17:22		Focal					
17:23				So... (1) would... you know it said solitary, solitary, umm, pulmonary shadow?	(1) Points at screen		
17:28		Hmm					Back-channel feedback
17:28				Now is that, in terms of alveolar, interstitial or....do you, do you know what I mean?			Offers opinion  Seeks agreement
17:34		Well, yeah					Gives agreement
17:35				Do you still just describe it as...			
17:37		I don't know, I mean...					
17:39			Well, that means (interrupted)				
17:40		Well that just looks like, well it's shadowing isn't it, it's just a focal... [104]		Yeah [104]			Back-channel feedback  Offers opinion
17:42			But it's got a.... it's got a focal point [105] hasn't it?	Yeah, so that's got nothing to do with [105]			Seeks agreement
17:46		It's not diffuse, the other ones diffuse, this ones focal [107]	It's a focal one (1) 'cos it's got a definite [106] Diffuse, haven't got a focus [107]	Oh so it's, [106] sorry (1) it's not diffuse is it, the other ones are diffuse [107] right yeah	(1) Supporting gesture 		Overlapping talk - supportive
17:52	 Localised alveolar pattern	(1) So that's focal alveolar pattern for want [108] of a better word	Yeah [108]	Yeah [108]	(1) Moves slides back		Back-channel feedback

17:55		(1) That's a focal pulmonary shadow [109] (2), solitary	Hmm [109]		(1) Advances slide (2) Points with cursor		Back-channel feedback
17:58		(1) That's the multiple			(1) Advances slide		
17:58				Right, multiple pulmonary shadows (1), yeah	(1) Supporting gesture 		
18:00		So there's err, I'd say you've got diffuse and focal.					Offers opinion
18:03				Yeah			Acknowledges opinion
18:04	<u>A Few Differentials</u>	(1) (2) A few differentials			(1) Advances slide (2) Reads from screen	CO-EXPLORE	
18:06	Diffuse – Interstitial: • Interstitial pulmonary oedema • Lymphangitis Carcinomatosis (lines radiate from hilum) • Fibrosing alveolitis* • Sarcoidosis* • Pneumoconiosis*  * May progress to honeycombing	(1) oedema [110]		So diffuse, interstitial [110]	(1) Advances slide		
18:09			(1) Interstitial pulmonary oedema		(1) Reads from screen		
18:12		(1) lymphangitis carcinomatosis [111]	(1) lymphangitis carcinomatosis [111]	(1) lymphangitis carcinomatosis [111]	(1) Reads from screen		Overlapping talk - supportive
18:14			Lines radiate... (trails)				
18:16				(1) So the lines radiate from the hilum	(1) Points at screen		



18:18		Umm hmm (Confirmatory context)					Back-channel feedback
18:18				OK			Back-channel feedback
18:19		(1) Err, may progress to honeycombing			(1) Reads from screen		
18:21		(1) Which is that			(1) Advances slide		
18:23				So what were the others ones. Fibrosing... sarcoidosis..			
18:27		(1) (3) Alveolitis [112]		(2) (3) Fibrosing alveolitis [112] ,	(1) Moves slides back (2) Points at screen (3) Reads from screen		
18:28		Pneumoconiosis					
18:29				Pneumoconiosis			
18:30			Which is from coal mining, or whatever				Offers opinion
18:33				That's right, yeah			
18:36		(1) (2) Become thicker and more pronounced, OK?			(1) Advances slide (2) Reads from screen		Resource navigation – permission sought
18:40		(1)		Next slide, OK	(1) Advances slide		Resource navigation – permission given
18:42		(1) Diffuse miliary			(1) Reads from screen		

18:44				(1) Miliary TB	(1) Reads from screen		
18:45		TB					
18:45			TB				
18:46				Umm metastases			
18:48		Chickenpox					
18:49				Sarcoidosis, (1) so sarcoidosis is on both of them isn't it?	(1) Points at screen		Seeks agreement
18:51		Hmm (Confirmatory context)					Gives agreement
18:54		Hmm umm, OK?					Gives agreement Resource navigation – permission sought
18:55				Hmm umm (Confirmatory context)			Resource navigation – permission given
18:57	Diffuse Alveolar : • Pulmonary oedema • Pneumocystis carinii • ARDS • Fat embolism	(1) (2) Diffuse alveolar, pulmonary oedema, pneumocystis.... (trails)			(1) Advances slide (2) Reads from screen		
19:01				What's ARDS again?		DEBATE	Topic question
19:02		Never heard of ARDS					Topic answer
19:03				ARDS? I have, but I can't think what it is			
19:06		Never heard of it to be [112] honest	No [112]				Topic answer
19:07				Errm, it's (1), oh god, we had a few, uh, requests with it on....is it Adult, Adult um	(1) holds head in hands		

							
19:16		Respiratory Distress Syndrome [113]	Distress Syndrome [113]	Distress Syndrome [113]			Overlapping talk - supportive
19:18			Yeah [114]	I think [114]			
19:20		Something like that [115]		I don't know, I could have made, I could have made that up! [115]			
19:22	<b>Focal – Lobar Shadowing :</b> First think... • Consolidation? • or Collapse?	(1) I like the sound of it anyway			(1) Advances slide		
19:23			Yeah				Back-channel feedback
19:24				Sorry, what were the other ones on that anyway, I was too busy looking at..		PREPARE	Resource navigation – permission sought
19:26	<b>Diffuse Alveolar :</b> • Pulmonary oedema • Pneumocystis carinii • ARDS • Fat embolism	(1) (2) Pulmonary oedema,			(1) Moves slides back (2) Reads from screen	CO-EXPLORE	
19:27		Pneumocystis carinii [115], 'careenee', 'careeni', whatever		(1) Pneumocyst.... Cyst carinii [115]			Overlapping talk - supportive
19:33				'Careenee'			
19:34		Ah, and then fat embolism					
19:36	<b>Focal – Lobar Shadowing :</b> First think... • Consolidation? • or Collapse?	OK? (1)			(1) Advances slide		Resource navigation – permission sought
19:37		(1) Focal, lobar shadowing,			(1) Reads from		

		consolidation or collapse			screen		
19:42		Yeah, like collapse [116]	So it's obviously a dark area, light area [116]				Offers opinion
19:46				Yeah, I think that's acute anyway not adult, yeah acute			Offers opinion
19:50	Focal – Solitary pulmonary : • 'Round' Pneumonia • Lung Primary • Lung abscess • Hamartoma ('popcorn' calcification)	(1) (2) Round pneumonia, yep, primary lung abscess			(1) Advances slide (2) Reads from screen		
19:54				What's round pneumonia?			Topic question
19:56		Dunno					Topic answer
19:57				Just lumps...			Topic answer
19:57		Probably what we saying about					
19:59				Yeah			Back-channel feedback
20:00		Uhh, dunno					
20:03				(1) Focal solitary	(1) Reads from screen		
20:05		Pulmonary lung abscess, lung abscess				CO-EXPLORE	
20:09				And hamartoma			
20:10		Hamartoma [117]	..toma [117]				Overlapping talk - supportive
20:12		Popcorn calcification [118]	Popcorn Calcification [118]				Overlapping talk - supportive
20:13				We remember that one though don't we			
20:15	Focal – Multiple Pulmonary: • Metastases • Secondary TB • Rheumatoid nodules	(1) Focal pulmonary...so			(1) Advances slide		
20:18		Metastases [119] secondary		Metastases [119] secondary TB			Overlapping talk - supportive
20:22		Rheumatoid nodules [120]...OK	Nodules[120]				Overlapping talk

		next					- supportive
20:25				Umm hmm (CC)			Back-channel feedback
20:26		(1)The end			(1) Advances slide		
20:26			The end				
20:27		(1) Right....[122]		(1) That's alright then [122]	(1) claps hands		

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### **Appendix 3**

#### **Questions used for the interviews conducted as part of context-case 3**

“Thinking about the curriculum / programme design process, (all the way through to the point of approval); and thinking about that in a pre-RoLEx<sup>18</sup> context:

- Can you just give a quick summary of any roles you have had in facilitating this sort of activity?
- With reference to your experiences, can you just take me through an account of how the curriculum design process - from the decision point to undertake a design process all the way through to the approval event. I'd like to know what that whole workflow is like from your perspective.”

The following supplemental questions were asked to further explore themes if these didn't emerge spontaneously from the conversation:

- Who else gets involved in the design and approval process?
- When do you interact with them?
- How would you say module design fits into programme design?
- What systems – either computer based or people based do you make use of during the curriculum design process?
- Who do you think are the stakeholders in the curriculum design process?
- Should all stakeholders contribute to the design process itself?

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<sup>18</sup> RoLEx was an institutional curriculum redesign initiative that had begun the year before.

- What are your thoughts on the documentation that course teams prepare as part of the curriculum design and programme approval process?
- Do you have ready access to all of the information you need to undertake the process of curriculum design or to prepare for programme approval?

How well do you think the programme documentation you have taken to approval describes the programme and the rationale behind the design choices that have been made by the course team?

## Appendix 4

Transcriptions from all of the video clips used in the published baseline review, by theme (indexed to sections in Chapter 6):

### 6.2.1.1.1: Drivers for design:

- *“What do we want the people to be able to do at the end of the day... ..it is almost like starting at the end, because that’s where we want them to be, so how are we going to get them there?”*
- *“A new delivery mechanism can change a design totally... ..so new technologies in particular can drive the design process”*
- *“We were having 400 applications for Music Tech and 30 places and it seemed silly to be turning these students away, so we thought – how can we deliver something that appeals to students who are applying to that but also has its own unique identity”.*
- *“We would make the most of the minor changes programme, so for me rather than having a course approval and running that course, it was a course approval where we’d already started to plan out how we were going to use the minor changes programme to develop the course further”*
- *“I would like to see in the future, perhaps the annual review process, being used as a regular mechanism for making, if you like, continual improvements and enhancements to the programme”*



#### **6.2.1.1.2: Coordination**

- *“You’ve got to get a lot of the unfinished business and a lot of the baggage out of the way, so you’ve got to let people have their say... ..before you can move them on”*
- *“If you’ve got 12 or 14 people, there’ll be 12 or 14 different versions of what they think the ideal structure is”*
- *“I do have meetings with the course team, talk to them about what I would like to do. We’re a very close team”*
- *“Having people in a room, sitting them down with a piece of paper, was when the decisions got made”*

#### **6.2.1.1.3: The availability of information**

- *“It’s relatively easy to get access to templates... ..it’s relatively easy to get access to regulations as well”*
- *“It was certainly very hard to find and it wasn’t in one particular place”*
- *“When you are expected to produce a document within quite a short space of time, it’s quite problematic having to go around accessing lots of different people and get the information from a number of different sources”*
- *“So some information that is readily available would be excellent”*

- *“They are requested to perform some market research which would then validate that the idea would be intellectually plausible to a stakeholder group and would be commercially viable”*
- *“Some sort of service whereby sense is made of that market information for the academic staff... ..that would be really useful”*

#### **6.2.1.1.4: Relationships vs. mechanisms**

- *“You tend to have people around you who have a very vested interest in the course... ..it really matters to us”*
- *“Sometimes, having a conversation with somebody makes it much clearer than trying to wade through formal documentation that doesn’t necessarily tell you how it actually works”*
- *“That’s the way I’ve approached it, to ask people to use their contacts and to find out what they think, or to pass it on to somebody who they know might answer the questions that we want”*
- *“I think panels like to see a seamless collaboration between academics and clinicians”*

#### **6.2.1.1.5: Stakeholders**

- *“I do think that we would benefit from having much more of a team-based approach so we would bring in the marketing staff into that team, as an equal part of that team really”*
- *“Sometimes as academics, we are just slightly one step remote from that because we are not involved in the day-to-day developments – it’s a valuable contribution that clinical colleagues, or work-based colleagues can make”*
- *“I think we’re just around industry and speaking with industry the whole time”*
- *“Over the institution as a whole I would say that we have tended not to do enough to involve students”*

#### **6.2.1.1.6: Constraints**

- *“In the case of healthcare programmes, they’re largely dictated to by the statutory and professional bodies – in terms of what the content should be”*
- *“We’re very much tied in with what’s required by the professional bodies”*
- *“If you see yourself as an educator who is helping someone to develop into a practitioner at the end of the day, you might have a more flexible approach to the way that occurs”*

#### **6.2.1.1.7: Compliance**

- *“We have very clear guidance about what’s required in terms of documentation”*
- *“People always wish to be told what is it I have to do to comply with the documentary requirements”*
- *“Because you have a template you have to follow; that, in some way, stifles creativity”*
- *“I do think there is a tendency for people to use tried and tested methods to comply”*

#### **6.2.1.1.8: The Programme Director**

- *“The Programme Leader has probably carried quite a substantial administrative burden and this may have, on occasions, got in the way of academic leadership”*
- *“The Programme Director’s role is to a great extent administration in terms of dealing with programme matters and students”*
- *“The two other elements, the coordination and the admin, were the bits that you concentrated on the most... ..the academic side of it came third”*
- *“It feels like more of an administrative role”*

#### **6.2.1.1.9: Holistic and distributed approaches to design:**

- *“I think there has been a tendency for the team to be convened and then to split up much too early in the process with people told to go away and design their modules on such-’n-such”*
- *“They will do their own module and it’s seen in some isolation, not complete isolation, but some isolation”*
- *“Here, I think what goes on is somebody picks up responsibility for let’s say a module and then they give it to a course director who sorts out the document... ..and then there is a preparation meeting before the validation panel, then the validation panel... ..and that’s it and then it’s taught”*
- *“In the early 90’s modularisation was introduced and seems to me to have led to some of that course team approach being lost – I don’t think it necessarily should have led to that... ..I actually think it is modularisation implemented poorly which, rather than modularisation per se, causes that”*

#### **6.2.1.1.10: Authenticity**

- *“Especially with a brand new course that nobody has ever written before, that’s never been done before and never been delivered in that way, we could only write down what we thought it was going to be”*
- *“Those documents barely mention what students actually do”*
- *“It’s that translation into reality that’s the important element”*

- *“Without the padded out detail, the students would find looking at a module specification almost meaningless in terms of what is actually going to be their learning experience”*
- *“That provides the information that’s necessary in order to get an overview of what the course is about”*
- *“It will be my words which will go into that document – which I hope will represent the views of everybody that has had input into it, but if I have a particular phraseology, it will be apparent in the documentation”*

#### **6.2.1.1.11: Textual representation**

- *“It’s so much more powerful to show that sort of evidence to a panel than a few academic words where there’ll be some insane debate about whether or not we have ‘observation’ or ‘reflective observation’, or ‘analysis or ‘critical analysis’; and a lengthy twenty minute academic discussion that has no impact on what follows after they’ve changed the wordage”*
- *“When you sit through the formal review meetings... ...most of those questions tend to come about because of a failure to grasp what we’ve actually put in the formal documentation”*
- *“If you can see real examples of those students in practice, doing an assignment, working on project – that’s going to be so much more powerful to you because you can see behind the words”*

- *“I think not only would it convey things it would catalyse things; so in other words – seeing ourselves, seeing what we’re doing would make us think harder about what we are really doing in the classroom or wherever it happens to be”*
- *“When a student thumbs through those paper-based module templates, do you think they really get excited by what they read? ...but to see a Mahara ‘view’ of previous students doing things, perhaps tutors giving quality feedback and those sorts of processes – it’ll just come alive!”*

#### **6.2.1.1.12: Specialised language**

- *“I do think there is a way that we phrase things within the University which requires translation for anybody that’s not used to H.E.”*
- *“When you’re trying to write it in very academic language as well that doesn’t necessarily equate to exactly what was said, especially when you are dealing with external people and stakeholders”*

#### **6.2.1.1.13: Audience**

- *“Historically what has happened in design has been principally governed by deadlines, compliance with process and the set piece occasion is the Approval Panel”*
- *“Approval is about preparing your documentation...”*
- *“The real design work takes place after the validation”*
- *“That’s the important part that doesn’t get spoken about”*

- *“When it gets to the Validation Panel... it appears not to be worthy of any discussion”*

#### **6.2.1.1.14: Staff support**

- *“We sent out questionnaires to all of the academic staff in all of the faculties and asked them what they needed to be able to do their job as course directors, to handle course validations... ..and then we decided to design two new Masters modules based on that information from staff – and those two modules were ‘Designing Academic Programmes in H.E.’ and ‘Enhancing the Quality of Academic Programmes in H.E.’”*

#### **6.2.1.1.15: Existing use of technology**

- *“The use of shared drives is fairly extensive now... ..that’s basically to ensure that all of the documents are in one place and that staff can access them easily”*
- *“A lot of it was done by email... ..we didn’t really use any other sort of technology”*
- *“I’ve used Moodle forums this time... ..so that everybody could look at the material and comment on them... ..but unfortunately not many people used the Moodle site and we ended up having a meeting”*
- *“‘Track changes’ in Microsoft Word is probably the most common way of doing these things... ..we use the Google system a bit.”*
- *“There are massive problems getting access to servers through the Health Service”*



- *“Module Designer... ..it was a pedagogic planning tool, there was a lot of help and support which is obviously still there now... ..it was quite a rigorous and robust planning tool”*

#### **6.2.1.1.16: Time and space for design**

- *“Staff are under a lot of pressure with their workloads as it is, which makes it exceedingly difficult to get everybody together to spend sufficient time thinking things through”*
- *“The very first meeting... ..for this project was on the 30th of October... ..and we were approved and up and running by January”*

## **Appendix 5**

### **Informed consent form**

*I, the user and stakeholder, consent to my video contribution being used for the purpose of developing educational provision at Birmingham City University, subject to the statement below:*

*The University appreciates the input of respondents as stakeholders, who will thereby have enhanced opportunities for influencing the development of educational provision; video footage will be treated as the stakeholder's personal data as defined in the Data Protection Act 1998. The Act demands that such personal data will be held securely, solely for the purpose described above, and disposed of in a timely fashion (the University does, however, reserve the right to re-visit this data over a reasonably lengthy period as part of the exercise). The University may also share your video data with various other educational institutions (e.g. universities, Further Education institutions and JISC (the Joint Information Systems Committee) so as to maximize the effect of your valued input.*

## References

- Alibali, M.W. and Nathan, M.J. (2004) The Role of Gesture in Instructional Communication: Evidence from an Early Algebra Lesson. In B. Kafai, W. Sandoval, N. Enyedy, A.S. Nixon and F. Herrera (Eds.), *Embracing Diversity in the Learning Sciences: Proceedings of the International Conference of the Learning Sciences*: pp. 36-43. Mahwah, NJ: Lawrence Erlbaum Associates.
- Barrow, R. (1999). 'Or what's a heaven for?' The importance of aims in education *In*: Marples, R. (ed.) *The Aims of Education*. London, Routledge.
- Bartholomae, D. (1986). Inventing the university. *Journal of Basic Writing*, 5: pp. 4-23.
- Bartholomew, P. (2014 – forthcoming). Developing and Deploying a Form of Case-Based Teaching into a Professional Healthcare Programme. In Nygaard, C., Branch, J. and Bartholomew, P. (Eds.) *Enhancing Student Learning Outcomes through Case-based Teaching*. Faringdon, Oxfordshire: Libri Publishing Ltd.
- Bartholomew, P. and Bartholomew, N. (2011). Learning through Innovation. In Nygaard, C., N. Courtney & C. Holtham (Eds.) *Beyond Transmission: Innovations in University Teaching*. Faringdon, Oxfordshire: Libri Publishing Ltd., pp. 99-116.
- Bartholomew P., S. Brand, & D. Cassidy (2010). Distributed Approaches to Promote Stakeholder Ownership of Postgraduate Programme Design. In Nygaard, C., L. Frick & N. Courtney (Eds.) *Postgraduate Education – Form and Function*. Faringdon, Oxfordshire: Libri Publishing Ltd., pp. 59-76.
- Bartholomew, P., S. Brand & L. Millard (2009). Developing a Coordinated Strategy to both Encourage Innovation and Improve Students' Learning

- Outcomes. *Improving Students' Learning Outcomes*. Frederiksberg: Copenhagen Business School Press, pp. 81-96.
- Bartholomew, P., Brand, S., Millard, L. (2013) Quality Enhancement through Student Engagement. In Nygaard, C., Courtney, N. & Bartholomew, P. (Eds.) *Quality Enhancement in University Teaching and Learning*. Faringdon, Oxfordshire: Libri Publishing Ltd.
- Bassey, M. (1999) *Case Study Research in Educational Settings*. Buckingham: Open University Press.
- Beaudoin, M.F. (2002). Learning or lurking? Tracking the “invisible” online student. *Internet and Higher Education*, 5, pp.147-155.
- Beauvois, M.H. (1998). Write to speak: The effects of electronic communication on the oral achievement of fourth-semester French students. In J.A. Muykens, ed., *New Ways of Learning and Teaching: Focus on Technology and Foreign Language Education*: pp. 93-116. Boston: Heinle & Heinle.
- Bennett, S., B. Harper, & J. Hedberg, (2002). Designing real life cases to support authentic design activities. *Australian Journal of Educational Technology*, Vol. 18, No. 1: pp. 1-12.
- Bhola, H.S. (2000) A Discourse on Impact Evaluation: A Model and its Application to a Literacy Intervention in Ghana. *Evaluation*, 6: pp. 161-177.
- Bizzell, P. (1992). *Academic Discourse and Critical Consciousness*. Pittsburgh, University of Pittsburgh Press.
- Blatchford, P., Kutnick, P., Baines, E., Galton, M. (2003). Toward a social pedagogy of classroom group work, *International Journal of Educational Research*, 39: pp. 153 – 172.

- Bourdieu, P., Passeron, J. and De Saint Martin, M. (1996). *Academic Discourse: Linguistic Misunderstanding and Professorial Power*. Cambridge, Polity Press in association with Blackwell Publishers Ltd.
- Boud, D. and Tennant, M. (2006). Putting doctoral education to work: challenges to academic practice, *Higher Education Research & Development*, 25, 3: pp. 293-306.
- Bourner, T., Bowden, R. and Laing, S. (2001) Professional Doctorates in England, *Studies in Higher Education*, 26, 1: pp. 65-83.
- Boyer, E. (1990) *Scholarship reconsidered: priorities for the professoriate*. New Jersey: Carnegie Foundation for the Advancement of Teaching.
- Brookfield, S.D. and Preskill, S. (1999). *Discussion as a Way of Teaching*. Buckingham: Open University Press.
- Browne Review (2010).  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/31999/10-1208-securing-sustainable-higher-education-browne-report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31999/10-1208-securing-sustainable-higher-education-browne-report.pdf)
- Campbell, D. T., & Stanley, J. C. (1966). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally.
- Chernobilsky, E., Hmelo-Silver, C. E., and DelMarcelle, M. (2003, April). Collaborative Discourse, Tools and Activity in Online Problem-Based Learning. Paper presented at the Annual meeting of the American Educational Research Association, Chicago IL. [accessed online at : <http://estep.wceruw.org/images/PDF/CollaborativeDiscourseTools.pdf> on 1st May 2013.
- Chun, D. (1994). Using computer networking to facilitate the acquisition of interactive competence. *System*, 22: pp. 17-31.
- Cook, J. (2002). The Role of Dialogue in Computer-Based Learning and Observing Learning: An Evolutionary Approach to Theory. *Journal of*

*Interactive media in Education*, 5. [www.jime.open.ac.uk/2002/5, Accessed 27/04/2004].

Davis, J. (2007) Rethinking the architecture: An action researcher's resolution to writing and presenting their thesis. *Action Research*, 5: pp. 181-198.

Department for Business, Innovation and Skills (BIS) (2011) *Higher education: students at the heart of the system*. London: TSO, Cm 8122.

Department for Education and Employment (DfEE) (1998) *Higher education for the 21st century: response to the Dearing report*. London: DfEE.

Department for Education and Skills (DfES) (2003). *The future of higher education*. London: TSO, Cm 5735.

Dillenbourg P. (1999) What do you mean by collaborative learning? In P. Dillenbourg (Ed) *Collaborative-learning: Cognitive and Computational Approaches*: pp.1-19. Oxford: Elsevier.

Dillenbourg, P. and Traum, D. (2006) Sharing Solutions: Persistence and Grounding in Multimodal Collaborative Problem Solving, *The Journal of the Learning Sciences*, 15, 1: pp. 121-151.

Dooley, L.M. (2002) Case Study Research and Theory Building. *Advances in Developing Human Resources*. Vol 4, No 3: pp. 335-354.

Epling, M., Timmons, S., Wharrad, H. (2003). An educational panopticon? New technology, nurse education and surveillance, *Nurse Education Today* 23: pp. 412-418.

Erickson, F. (2011) Uses of video in social research: a brief history, *International Journal of Social Research Methodology*, 14, 3: pp. 179-189.

Evans, L. (2002) *Reflective Practice in Educational Research: Developing Advanced Skills* (London, Continuum).

- Evans, L. (2008) *Professionalism, professionalism and the development of education professionals*. British Journal of Educational Studies, 56, 1: pp. 20-38.
- Fenge, L.A. (2009): Professional Doctorates—A Better Route for Researching Professionals?, *Social Work Education: The International Journal*, 28, 2: pp. 165-176.
- Fisher, K. and Phelps, R. (2006) Recipe or performing art?: Challenging conventions for writing action research theses. *Action Research* 2006, 4: pp. 143-164.
- Fleiss, J. L. (1971). Measuring nominal scale agreement among many raters. *Psychological Bulletin*, 76: pp. 378-382.
- Flyvbjerg, B. (2006) Five misunderstandings about case-study research. *Qualitative Inquiry*, 12, 2: pp. 219-245.
- Foucault, M. (1975) "*Discipline and Punish, Panopticism*." In *Discipline & Punish: The Birth of the Prison*, edited by Alan Sheridan, pp. 195-228. New York: Vintage Books, 1977.
- Freidson, E. (1994) *Professionalism Reborn: Theory, Prophecy and Policy* (Cambridge, Polity Press, in association with Blackwell Publishers).
- Fry, H., Ketteridge, S. and Marshall, S. (2000). *A Handbook for Teaching and Learning in Higher Education; Enhancing Academic Practice*. London: Kogan Page.
- Garfinkel, H. (1967). *Studies in ethnomethodology*. Englewood Cliffs, NJ: Prentice-Hall.
- Garrison D R, Anderson T and Archer W (2000) Critical inquiry in a text-based environment: computer conferencing in higher education, *Internet and Higher Education*, 11, 2: pp. 1–14.

- Geoghegan, W.H. (1994) Whatever happened to instructional technology?  
*Paper presented at the 22nd Annual Conference of the International Business Schools Computing Association:*  
<http://eprints.ecs.soton.ac.uk/10144/> [accessed on May 1<sup>st</sup> 2011].
- Goldman, R. (2004). A design ethnography: Video perspectivity meets wild and crazy teens. *Cambridge Journal of Education*, 34, 2: pp. 157–178.
- Goldman-Segall, R. (1998). *Points of viewing children's thinking: a digital ethnographer's journey*. Mahwah, Lawrence Elbaum Associates.
- Goodwin, L., Miller, J.E., and Cheetham, R.D. (1991) Teaching Freshmen to Think: Does Active Learning Work?, *Bioscience*, 41: pp. 719-722.
- Haigh, N. (2010) *The scholarship of teaching and learning: a practical introduction and critique*. Wellington, New Zealand: AUT University and Ako Aotearoa.
- Hale, L.S., Mirakian, E.A., Day, D.B. (2009). Online vs classroom instruction: student satisfaction and learning outcomes in an undergraduate Allied Health pharmacology course. *Journal of Allied Health*, Vol. 38, 2: pp.36-42.
- Hansen, H. F. (2005) Choosing Evaluation Models: A Discussion on Evaluation Design. *Evaluation*, 11: pp. 447-462.
- Harris, K. (1999). Aims! Whose aims? In: Marples, R. (ed.) *The Aims of Education*. London, Routledge.
- Heath, C. and Luff, P. (1993). Explicating face-to-face interaction. In: N. Gilbert, ed., *Researching Social Life*. London: Sage: pp. 306-26.
- Henkel, M. (2005). Academic identity and autonomy in a changing policy environment. *Higher Education*, 49: pp. 155-176.
- Henri, F. (1992) Computer conferencing and content analysis in Kaye A R (ed) *Collaborative learning through computer conferencing* Springer-Verlag, Berlin: pp. 117–136.



- Herling, R. W., Weinberger, L., & Harris, L. (2000). *Case study research: Defined for application in the field of HRD*. St. Paul: University of Minnesota, Human Resource Development Research Center.
- Hmelo-Silver, C.E. and Chernobilsky, E. (2004). Understanding Collaborative Activity Systems: The Relation of Tools and Discourse in Mediating Learning. In B. Kafai, W. Sandoval, N. Enyedy, A.S. Nixon and F. Herrera (Eds.), *Embracing Diversity in the Learning Sciences: Proceedings of the International Conference of the Learning Sciences*: pp. 254-261. Mahwah, NJ: Lawrence Erlbaum Associates.
- Hoyle, E. (1975) Professionalism, professionalism and control in teaching. In V. Houghton et al. (eds) *Management in Education: the Management of Organisations and Individuals* (London, Ward Lock Educational in association with Open University Press).
- Hoyle, E. (2001) Teaching: prestige, status and esteem, *Educational Management & Administration*, 29, 2: pp. 139–152.
- Hrastinski, S. (2008) Asynchronous and synchronous e-learning, *Educause Quarterly*, Vol 4: pp. 51-55.
- Huber, M.T. & Hutchings, P. (2005) *The advancement of learning: building the teaching commons*. San Francisco: Jossey-Bass/Carnegie Foundation for the Advancement of Teaching.
- Huxham, M. (2005). Learning in Lectures, *Active Learning in Higher Education*, Volume 6: pp. 17-31.
- Kekkonen-Moneta, S. and Moneta, G.B. (2002). E-Learning in Hong Kong: comparing learning outcomes in online multimedia and lecture versions of an introductory computing course, *British Journal of Educational Technology*, 33, 4: pp. 423-433.
- Kipp, M. (Undated) Anvil Website: <http://www.dfki.de/~kipp/anvil/doc/anvil36-quickref.pdf> [accessed online at url given above on 29<sup>th</sup> January 2005].

- Kipp, M. (2001): "ANVIL - a generic annotation tool for multimodal dialogue", In *EUROSPEECH-2001*, 1367-1370. [accessed online at [http://www.dfki.de/~kipp/public\\_archive/kipp2001-eurospeech.pdf](http://www.dfki.de/~kipp/public_archive/kipp2001-eurospeech.pdf) on 29th January 2005].
- Kirkpatrick, D. (1975). *Evaluating Training Programs*. D.L. Kirkpatrick (ed.) Alexandria, VA.
- Kolb, D. A. (1984) *Experiential learning: experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.
- Koschmann, T., Stahl, G. and Zemel, A. (2004) The Video Analyst's Manifesto (or The Implications of Garfinkel's Policies for the Development of a Program of Video Analytic Research within the Learning Sciences). In B. Kafai, W. Sandoval, N. Enyedy, A.S. Nixon and F. Herrera (Eds.), *Embracing Diversity in the Learning Sciences: Proceedings of the International Conference of the Learning Sciences*: pp. 278-285. Mahwah, NJ: Lawrence Erlbaum Associates.
- Kreber, C. (2000) How university teaching award winners conceptualise academic work: some further thoughts on the meaning of scholarship. *Teaching in Higher Education*, 5, 1: pp. 61-78.
- Lacoss, J. and Chylak, J. (1999) In Their Words: Students' ideas about teaching, [http://trc.virginia.edu/Publications/Teaching\\_Concerns/Spring\\_2000/TC\\_Spring\\_2000\\_Lacoss\\_Making.htm](http://trc.virginia.edu/Publications/Teaching_Concerns/Spring_2000/TC_Spring_2000_Lacoss_Making.htm) [accessed 29th August 2005].
- Lake, D.A. (2001) Student Performance and Perceptions of a Lecture-based Course Compared with the Same Course Utilizing Group Discussion, *Physical Therapy*, 81: pp. 896-903.
- Landis, R. and Koch, G.G. (1977) The Measurement of Observer Agreement for Categorical Data. *Biometrics*, Vol. 33, No. 1: pp. 159-174.

- Lave, J. and Wenger, E. (1991) *Situated Learning. Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
- Lester, S. (2004) Conceptualizing the practitioner doctorate, *Studies in Higher Education*, 29, 6: pp. 757-770.
- MacIntyre, A. (1981). *After Virtue: A Study in Moral Theory*. London: Duckworth.
- Maier, P., Bamett, L., Warren, A., Brunner, D. (1998) *Using technology in teaching and learning*. Oxon, Routledge.
- Maunder, R.E. and Harrop, A. (2003). Investigating Students' Perceptions of What Contributes to Productive Seminars and Lectures and Staff Predictions of Students' Perceptions: how well staff know their students?, *Journal of Further and Higher Education*, 27: 4: pp. 443-456.
- McKinney, K. (2006) Attitudinal and structural factors contributing to challenges in the work of the scholarship of teaching and learning. *New Directions for Institutional Research*, 129: pp. 37-50.
- McNeill, D. (1992) *Hand and mind: What gestures reveal about thought*. Chicago: University of Chicago Press.
- Mercer, N. (2000). *Words and Minds: How we Use Language to Think Together*. London: Routledge.
- Mercer N., Littleton, K. and Wegerif, R. (2004) Methods for Studying the Processes of Interaction and Collaborative Activity in Computer Activity in Computer-based Educational Activities, *Technology, Pedagogy and Education*, 13, 2: pp. 195-212.
- Merriam, S.B. (1998) *Qualitative research and case study applications in education*. San Francisco: The Jossey-Bass Education Series and The Jossey-Bass Higher Education Series.

- Moore, G. (1991) *Crossing the Chasm*. HarperBusiness, New York.
- Mulhall, S. and Swift, A. (1992). *Liberals and Communitarians*. Oxford: Blackwell.
- Murphy, E. (2004). Recognising and promoting collaboration in an online asynchronous discussion, *British Journal of Educational Technology*, 35, 4: pp. 421-431.
- Norris, C. and Armstrong, G. (1999). *The Maximum Surveillance Society: The Rise of CCTV*. Oxford, Berg Publishers.
- Pea, R.D. (1993) Practices of distributed intelligence and designs for education. In G. Salomon (Ed.), *Distributed Cognitions: Psychological and educational considerations*: pp. 47-87. New York: Cambridge University Press.
- Peattie, L. (2001). Theorizing planning: Some comments on Flyvbjerg's Rationality and power. *International Planning Studies*, 6, 3: pp. 257-262.
- Pennington, M. (1996). *The Computer and the Non-Native Writer: A Natural Partnership*. Creskill, New Jersey: Hapton Press Inc.
- Pilkington, R.M. (1999). Analyzing Educational Discourse: The DISCOUNT Scheme. Version 3. [CBL Technical Report No. 99/2](#), ISBN: 1 901418 022. (Last Updated Feb 8th 1999). See also *AIED 99 Workshop: Analysing Educational Dialogue Interaction* [Accessed online at <http://www.education.bham.ac.uk/aboutus/profiles/curped/pilkington/docs/DISCoun99.htm> on 27th February 2006]
- Pilkington, R.M. and Walker, S.A. (2003). Facilitating debate in networked learning: Reflecting on online synchronous discussion in higher education, *Instructional Science*, 31: pp. 41-63.
- Quality Assurance Agency (2008). *The framework for higher education qualifications in England, Wales and Northern Ireland*.

- Randolph, J. J. (2005). Free-marginal multirater kappa: An alternative to Fleiss' fixed-marginal multirater kappa. Paper presented at the *Joensuu University Learning and Instruction Symposium*, Joensuu, Finland, October 14-15th.
- Redsell, S.A. and Cheater, F.M. (2001) The Data Protection Act (1998): implications for health researchers. *Journal of Advanced Nursing*, 35, 4: pp. 508-513.
- Reed, M. S., A. C. Evely, G. Cundill, I. Fazey, J. Glass, A. Laing, J. Newig, B. Parrish, C. Prell, C. Raymond, and L. C. Stringer. 2010. What is social learning? *Ecology and Society* 15, 4: r1. [online] URL: <http://www.ecologyandsociety.org/vol15/iss4/resp1/>.
- Robson, C., (2002) *Real World Research (Second Edition)*. Oxford: Blackwell Publishers Ltd.
- Rogers, E.M (1962) *Diffusion of Innovations*. Free Press, New York. [with reprinted/revised editions in 1983, 1995 & 2003].
- Rudd, T., Colligan, F. and Naik, R. (2006) *Learner Voice: A handbook from Futurelab. Bristol: Futurelab*.
- Saunders, M. (2011) Capturing effects of interventions, policies and programmes in the European context: A social practice perspective. *Evaluation*. 2011, 17: pp. 89-102.
- Shulman, L. (1999) Taking learning seriously. *Change*, 31, 4: pp.10-17.
- Shulman, L. (2000) Inventing the future. In: Hutchings, P. (ed) *Opening lines: approaches to the scholarship of teaching and learning*. California: The Carnegie Foundation for the Advancement of Teaching.
- Simons, H. (2009). *Case study research in practice*. Sage Publications.
- Sockett, H. T. (1996) Teachers for the 21<sup>st</sup> century: redefining professionalism, *NASSP Bulletin*, May: pp. 22-29.

- Sommers, N. (1992). Between the drafts. *College Composition and Communication*, 43: pp. 23-31.
- Spada, H., Meier, A., Rummel, N. and Hauser, S. (2005) A New Method to Assess the Quality of Collaborative Process in CSCL. In Koshmann, T., Suthers, D., and Tak-Wai, Chan (Eds.), *The Next Ten Years!: Proceedings of Computer Supported Collaborative Learning*: pp. 622-631. Mahwah, NJ: Lawrence Erlbaum Associates.
- Stahl, G. (2005) Group cognition in computer-assisted collaborative learning, *Journal of Computer Assisted Learning*, 21: pp. 79-90.
- Stahl, G., Koschmann, T., & Suthers, D. (2006). Computer-supported collaborative learning: An historical perspective. In R. K. Sawyer (Ed.), *Cambridge handbook of the learning sciences*: pp. 409-426. Cambridge, UK: Cambridge University Press.
- Stake, R.E. (1995) *The art of case study research*. California: Sage
- Standish, P. (1999). Education without aims? In: Marples, R. (ed.) *The Aims of Education*. London, Routledge.
- SQW (2011) Summative evaluation of the CETL programme: Final report by SQW to HEFCE and DEL:  
<http://www.hefce.ac.uk/pubs/rereports/year/2011/cetlsummevaln/>.
- Taylor, C. (1989). Sources of the Self: The Making of the Modern Identity. Cambridge: Cambridge University Press.
- Tolmie, A. & Boyle, J. (2000). Factors influencing the success of computer mediated communication (CMC) environments in university teaching: a review and case study. *Computers & Education*, 34: pp. 119-140.
- Torraco, R. J. (1997). Theory building research methods. In R. A. Swanson & E. F. Holton (Eds.), *Human resource development research handbook: Linking research and practice*: pp. 114-138. San Francisco: Berrett-Kohler.

- Trigwell, K. & Shale, S. (2004) Student learning and the scholarship of university teaching. *Studies in Higher Education*, 29, 4: pp. 523-536.
- T-SPARC Flickr Page: <http://www.flickr.com/photos/tsparc>
- [Last accessed on 28<sup>th</sup> August 2013]
- T-SPARC Project Blog: <http://blogs.bcu.ac.uk/tsparc/>
- [Last accessed on 28<sup>th</sup> August 2013]
- UK Parliament (1998). Data Protection Act. HMSO, London.
- University of Birmingham (2004). Student Guide to the Professional Doctorate (EdD) Learning and Learning Contexts.
- Van Dijk, L.A., Van Den Berg, G.C. and Van Keulen, H. (1999) Using Active Instructional Methods in Lectures: A Matter of Skills and Preferences, *Innovations in Education and Training International*, 36: pp. 260-272.
- Warschauer, M. (1996). Comparing face-to-face and electronic discussion in the second language classroom. *CALICO Journal*, 13, 2: pp. 7-26.
- Wells, G. (1999) Modes of meaning in a science activity. *Linguistics and Education*.
- [accessed online at <http://tortoise.oise.utoronto.ca/~gwells/Shoebox.html> on 27th January 2005].
- Wenger, E. (1999). *Communities of Practice: Learning, Meaning and Identity*. Cambridge, Cambridge University Press.
- Wenger, E. (2000) Communities of Practice and Social Learning Systems. *Organization*, 7: pp. 225-246.
- White, H. (2010) A Contribution to Current Debates in Impact Evaluation. *Evaluation*, 16: pp.153-164.
- Winch, C. (1999). Autonomy as an educational aim *In*: Marples, R. (ed.) *The Aims of Education*. London, Routledge.

- Winter, R., Griffiths, M. and Green, K. (2000) The 'Academic' Qualities of Practice: What are the criteria for a practice-based PhD?, *Studies in Higher Education*, 25, 1: pp. 25-37.
- Yadav, A., M. Lundeberg, M. DeSchryver, K. Dirkin, N. Schiller, K. Maier, & C. Herreid, (2007). Teaching science with case studies: A national survey of faculty perceptions of the benefits and challenges of using cases. *Journal of College Science Teaching*, Vol. 37, No. 1: pp. 34-38.
- Yin, R.K. (1993) *Applications of Case Study Research*. London: Sage.
- Yin, R.K. (1994) *Case-study research: design and methods*, 2<sup>nd</sup> ed. London: Sage Publications Ltd.
- Zamel, V. (1993). Questioning Academic Discourse. *College ESL*, v3, n1: pp. 28-39.
- Zariski, A. (1997). "Knowledge Networks" or Discourse Communities?: Response to Hibbitts' Commentary. *First Monday*, issue 2, 8.  
[[www.firstmonday.dk/issues2\\_8/zariski/](http://www.firstmonday.dk/issues2_8/zariski/), Accessed 27/04/2004].