Newcastle University

School of Education, Communication and

Language Sciences

How can I improve my practice as a University Lecturer in the development and delivery of a distance learning module in a post graduate diploma in clinical education?

Thesis for Doctorate in Education

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I certify that all work which is not my own in this submitted assignment has been identified. No material is included which has been submitted for any other award or qualification.

Signed:

Laura Delgaty

Date: November 9, 2012

Abstract: How can I improve as a practitioner of distance learning?

With the uptake of distance learning (DL), which has been marginal for most academics, teaching contexts, traditional power structures and relationships have changed, leaving lecturers potentially disenfranchised. Proliferate literature was found addressing DL in medical education, although the practical application for academics was scarce. Unsurprisingly, the most cited article in Medical Teacher in 2010 was: '*The Failure of e-Learning Research to Inform Educational Practice, and What We Can Do About It'* (Personal communication, Medical Teacher, October 24,). My experience suggested DL was a disruptive technology to individuals and the organisational culture of higher education.

The related research question and aim of this study were:

Research Question

How can I improve my practice as a University Lecturer in the development and delivery of a distance learning module in a post graduate diploma in clinical education?

Research Aim

To critically and systematically examine, and make informed changes to, the design and delivery of a post-graduate distance clinical education module.

I hoped to inform educational practice: primarily, my own, by improving my practice as a university DL practitioner. Based on the literature of organisations and DL, I examined and evaluated the complex process of developing and then delivering an asynchronous fully online module. Maintaining an action research methodology, this study underwent two cycles. The first cycle focused on planning of the module, the second on delivery. These cycles informed my own practice, guided further development and resulted in subsequent change. Data collection consisted of documentary analysis of meetings, interviews with staff and students, formal student evaluations, web analytics and personal reflection. Data analysis incorporated both quantitative and qualitative methods to triangulate the research findings and ensure the research aim was addressed.

Within this inquiry, new competencies for academics including leadership and management were exposed. Barriers to staff progress included changes and ambiguity in roles, lack of leadership and unpreparedness for responsibilities, time, and workload. Student barriers included time, fear, relevance of learning, isolation and increased autonomy. Explicit planning, organisational support and working within communities were requisite to create a 'sustaining' technology representing an improvement on current practices for both groups.

Avoiding traditional workload assumptions that are erroneous and inaccurate, this study provides new models of organisational roles and responsibilities. Time, workload, and changing expectations of staff and students are addressed whilst uncompromisingly focusing on informing and improving practice.

Acknowledgements

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My research subjects, who volunteered willingly and enthusiastically.

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Finally, I could not have done this without Gareth Davies and my two girls Emma and Molly. They supported me, listened to me and tolerated my frequent late nights and absences from normal family life.

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Definitions

Distance Learning (DL): E-learning, elearning, technology enhanced learning, distance learning, distance education and online learning have been used interchangeably in this thesis. When I discussed Maguire's (2005) review of distance learning, or Pirani's (2004) comparison of e-learning or Song *et al*.'s. (2004) questioning of distance education, I adopted their terminology because I believed I needed this freedom and breadth as these definitions were ambiguous and not fixed (Dublin, 2003). It seemed a pragmatic and honest representation of individual authors' ideas to use their terms when discussing their work. However, for clarity and consistency, I have adopted 'distance learning' as a broad descriptor and will use this for congruence when discussing my own work. To define this, I have decided on the following caveats for this submission:

- The learner is physically separated from the teacher
- It is a planned and guided learning experience
- There is asynchronous communication
- Technology in some form is used

Development- the planning, writing and designing of the module in this inquiry. Temporally, this was early 2009 (when the decision to offer this module was made) until January 20, 2011 (the day before students could access the activities).

Delivery- the execution or implementation of the module in this inquiry. Temporally, this was January 21, 2011- June 1, 2011 (the time students could access activities).

Acronyms are found in Appendix A.

Chapter 1. Introduction

1.1. Introduction

This action research study focused upon my personal improvement as a practitioner of distance learning (DL) in a post-graduate Diploma of Clinical Education module. The development and delivery of this module was explored from a combination of staff, organisational and student perspectives. The critical investigation of these experiences, both positive and negative, explored via practitioner inquiry, led to my improvement as a practitioner of DL. This chapter describes the background and context of the distance module: Utilising Technology in Clinical Education (UTCE). It summarises the development of the research and explains both the style and organisation of the thesis.

1.2. Background

There has been increasing pressure on Western universities by government and funding bodies to implement e-learning strategies (Higher Education Funding Council for England (HEFCE), 2005). Revolutionary claims highlighting the transformation of learning have included flexible student centred opportunities and learning anytime, anywhere (Conole, 2004). However, the early explosion of e-learning was met with disappointing results (Ellaway, 2011) and high rates of attrition (Conole, 2004; Salmon, 2005; Tyler-Smith, 2006). Furthermore, even with the "glorious revolution" of e-learning, universities have struggled to engage academic staff with its use (Salmon, 2005; Becker and Jokivirta, 2007). McPherson *et al*. (2008) suggested that academics were being compelled to begin e-delivery regardless of them being pedagogically convinced of the value. Unequivocally, e-learning has disrupted the status quo in education in general, and specifically in medical education (Ellaway, 2011).

1.3. Context and Setting

The setting was a 'traditional' Russell Group University. School strategic goals for 2009-2010 and 2010-2011 included an increase in the utilisation of technology in teaching. There was a clear expectation that as an academic, I would 'demonstrate innovation' by embracing technology within my teaching practice.

The study was related to a specific 'case' or cohort of students who completed a 20 credit DL module running between January and May 2011. Students enrolled on this

module were part of the graduate Diploma in Clinical Education. This diploma is mainly designed for practicing medical doctors who are interested in pursuing further qualifications in education. The students had all completed the certificate level of the programme and had been exposed to basic learning and curricular theories. This programme, running in some form since 1996, aimed to provide doctors and dentists with the opportunity to acquire knowledge and skills in teaching strategies in order to provide effective education for their students. This was the first module offered on the programme that was completely online and was delivered asynchronously. The aim of this optional module was to raise students' critical awareness concerning the utility of technology enhanced learning (TEL) in health care education whilst providing opportunities for students to explore and apply these technologies in their own context. Theoretical frameworks, design, delivery, assessment and evaluation of DL were addressed. Students were expected to work collaboratively with the group and contribute to peer and group learning activities online.

1.4. Development of the Module

As an academic within the Clinical Education Programme, I have been teaching since I graduated from physiotherapy in 1992 and directly involved with academic Higher Education University since 2007. In 2009, I was asked to develop UTCE as an asynchronous online module using interactive HTML (hypertext mark up language) and a LSE (learning support environment). The aims of the module were:

- To raise critical awareness concerning the utility of technology enhanced learning in health care education
- To provide the opportunity for students to explore and apply technology enhanced learning in their own context.

I developed the module as a series of independent and collaborative activities facilitated by myself in our LSE.

1.5. Development of the Research Issue

With no experience, training or natural vocation for technology, the development was arduous. The working roles and responsibilities for the team (myself, the administrator and the technician) were unclear. Technical support was mercurial and inconsistent and I was totally reliant on other people. This was occurring as I struggled to find a

topic for my EdD. The combination of timing, genuine interest and my desire to improve as a practitioner led to the study topic. The research question, aim and objectives (Table 1) gradually emerged from this starting point.

Research Question
How can I improve my practice as a University Lecturer in the development and delivery of a distance learning module in a post graduate diploma in clinical education?
Research Aim
To critically and systematically examine and make informed changes to the design and delivery of a post-graduate distance clinical education module.
Research Objectives
To explore collaboratively and critically with staff the developmental process of this e-module, focussing on barriers, facilitators, action and improvement.
To investigate student experiences of UTCE focusing on barriers and facilitators to their experiences, changes, evaluation of changes and suggestions for improvement in the future.
To analyse time commitment from staff in the development stage of UTCE in order to inform workload planning.
To analyse time commitment and contributions from staff to create a representation of online teaching habits and patterns during the delivery phase of UTCE.
To analyse time commitment and contributions from students to create a representation of online learning workload and patterns.
To gain an understanding of the range of problems encountered, (overcome or not), whilst collaboratively developing and delivering UTCE.
To reflect on changes made, actions taken and to critically evaluate those actions, focusing on improvement and further development.

Table 1: Overall research plan

For orientation, I have created a timeline (Figure 1) outlining major research decisions I made.

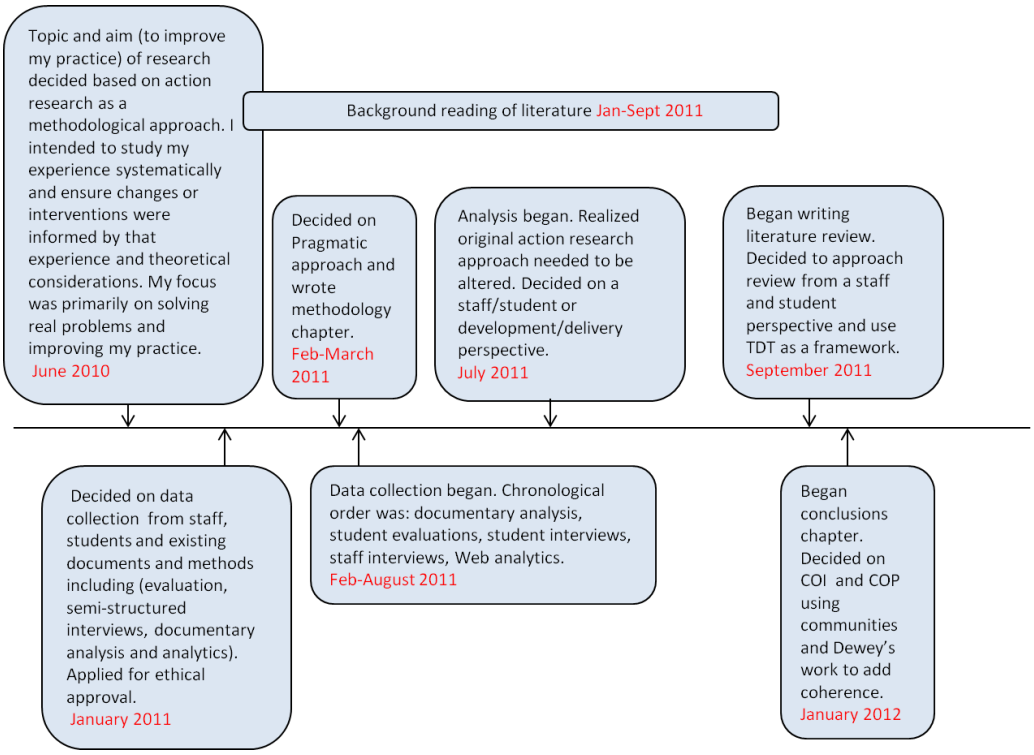


Figure 1: Timeline of major research decisions

1.6. Style and Presentation

> *'Many people think an academic report needs to be written in 'Sunday best' language, which is not necessarily the case. Everyday language is perfectly acceptable for an academic report'* (McNiff and Whitehead, 2009, p.71).

This autobiographical representation was written in a narrative style with an academic purpose. Clandinin and Connelly (2000) argued that only through narrative can we construct and reconstruct our personal and professional identities, and in the process begin to understand the significance of particular events. Whilst trying to use language appropriate for an academic reader, speaking directly with minimal fuss about what I have learned (McNiff and Whitehead, 2009), I endeavoured to make the submission readable and engaging (Bullough and Pinnegar, 2001), occasionally changing tenses when it seemed to provide a more fluid narrative. I consistently wrote in a 'first person, active voice' attempting to show awareness of my role in this inquiry (Patton, 2002).

The thesis itself is presented in a conventional format consisting of an introduction, literature review, methodology, results and a discussion chapter. I have written chapter introductions instead of an extended introduction chapter here. Similarly, I have created chapter summaries as opposed to a final summary chapter. I viewed this dissertation as a story, a long story, so from time to time; I summarised the 'plot' and oriented the reader before moving on. I have used a personal and academic dialect style (for clarity of expression) and clear signposting, colours and diagrams (for clarity of structure). In the next chapter, literature is addressed surrounding DL in general and staff and student perspectives.

Chapter 2. Literature Review

2.1. Introduction

For orientation, the overall aim and related research question of this study were:

Research Question

How can I improve my practice as a University Lecturer in the development and delivery of a distance learning module in a post graduate diploma in clinical education?

Research Aim

To critically and systematically examine and make informed changes to the design and delivery of a of post-graduate distance clinical education module.

Within this literature review, there were several objectives:

- To identify and review strategies which have been shown to be effective in DL within the field of postgraduate clinical education
- To review literature on the theoretical and pedagogical underpinnings of distance education, specifically transactional distance theory
- To review literature on organisational culture and organisational change as it related to DL
- To identify and review issues that facilitated and were a challenge to academic staff when designing and implementing DL
- To review in more detail 'time' as one of the barriers to academic staff involved in DL.

2.1.1. Method

This literature review and entire submission were undertaken from a pragmatic approach with practical decisions based on solving problems, improvement and action. My aim was consistently focused towards practical benefit and improvement. What questions I asked, what literature I synthesised and evaluated (Phillips and Pugh, 1994) and what definitions I decided upon have all been guided by the desire to fulfil that aim. My purpose here was:

- To review published material and to synthesise heterogeneous bodies of knowledge, not perform a new investigation (Phillips and Pugh, 1994)
- To share current and relevant literature surrounding this submission with the reader

- To critically evaluate relevant literature and place my inquiry in context.

2.1.2. Search strategies

Data bases were searched including: Scopus, Psychinfo, Web of Knowledge, Medline ERIC and CINAHL to identify potentially relevant material using the following terms:

- (Effective or successful or valuable or useful) and (DL or distance learning or computer assisted learning or e-learning or elearning or online learning or online education or distance education or technology enhanced learning or computer mediated learning or computer based learning or ICT).

In Scopus alone, this wielded over 9000 results and I began filtering, reading and writing. My early reading and review consisted of:

- work on effective DL investigating specific media or resources
- undergraduate education
- editorial and opinion papers
- comparative studies (i.e. to traditional face to face teaching)
- systematic reviews (few)
- K-12 education
- an abundance of 'how-to' books
- reams of advocacy papers and success stories
- anecdotal and promotional articles.

The choice of data bases reflected the heterogeneous nature of the research in the area of technology, education, medical education, medical sciences and social sciences. Due to the perpetually emerging nature of technology, I registered for weekly alerts of new publications in an effort to maintain a current and dynamic grasp of the literature. Unless reviewing theoretical literature (learning or organisational theories), only technological literature published in the last ten years was reviewed. Striving to strike a balance between comprehensiveness (or sensitivity) and precision, this date restriction was chosen which is common practice in literature reviews (Cochrane Collaboration, 2012). I chose to favour precision (reviewing current publications) as DL practice has changed and evolved rapidly. This time frame appears to be congruent with other literature reviews in this area including: Berge and Mrozowski (2001) nine

years and Zawacki-Richter (2009) eight years. I focused specifically on higher education, medical or clinical education and online courses if possible (for example, excluded blended learning). I included both synchronous and asynchronous delivery, trying to focus on asynchronous (if it was made clear) as this was the delivery method of the module investigated.

Abstracts of all identified papers were read and full copies of articles that appeared relevant were saved as electronic files in Endnote. Duplicates were deleted. E-books, books and photocopied chapters of traditional books were used and organised manually by topics. I performed citation searching on all articles that related directly to transactional distance theory or reviews of DL and postgraduate medical education. My searches were limited to English language books and journals. I have included topic specific explanations of search terms, definitions, a justification of choices and inclusion and exclusion criteria in Appendix B.

2.1.3. Overview

The topics in this review followed a similar pattern: introduction, definitions, search strategy, results and summary (Figure 2). This systematic approach helped me organise my thoughts and hopefully helps steer the reader.

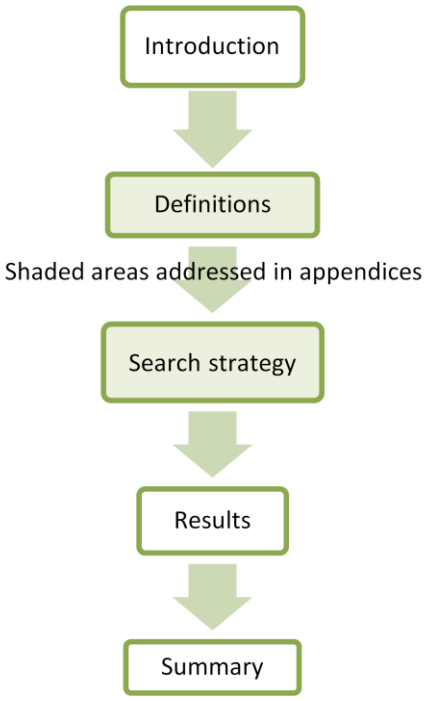


Figure 2: Structure of sections within literature review

The chapter was broken into two sections, dealing with literature from two perspectives: student and staff. In section I, DL was addressed in general followed by student perspectives and transactional distance theory. In section II, DL was approached from an organisational or institutional perspective, outlining organisational culture, organisational change, staff perspectives and barriers. I have included summaries and learning points and for orientation, I refer liberally to Figure 3 within this review.

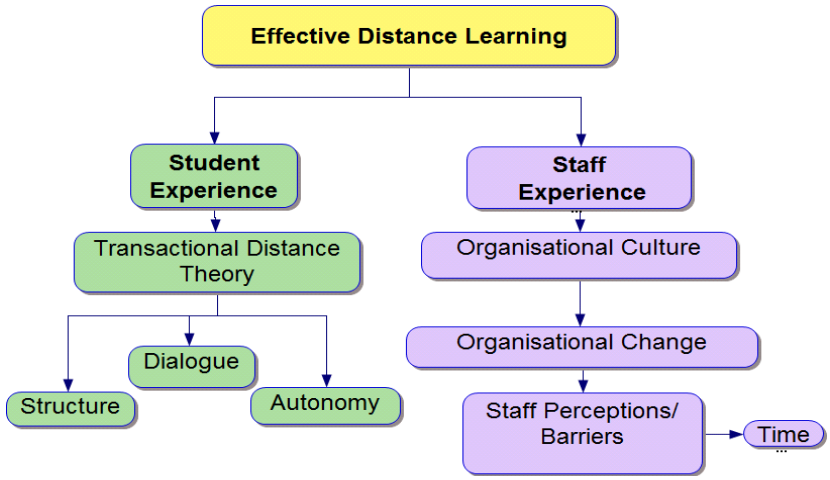


Figure 3: Structure of literature review

2.2. What is effective distance learning?

'In ten years time, effective learning will be impossible without distance learning skills' (Farrell, 2006, p.14).

Introduction

Claims of unobstructed access to resources and the irrelevance of time and geography are common in DL. However, in an extensive review, Conole (2004) suggested that in reality, DL was still marginal in the lives of most academics. She claimed the majority of academics used technology for administrative purposes or as a content repository and suggested that rigorous research was needed to gain an understanding of how technologies can be used 'effectively'. This led to the first (and personally fundamental) area addressed in the literature review: 'What makes effective DL in clinical education?' I did not naively think this was any more answerable than 'What makes effective DL?' I acknowledged that education was diverse, technology was diverse, learners were diverse and classifications were diverse. I was also not expecting a categorical answer to my question. The fact I have used 'effective' suggested I have placed value on either the pedagogy or technology surrounding DL. I needed to

establish what effective DL 'was'. I focused on theoretical or foundational work (relevant to teaching and learning in distance education), and began reviewing what was effective in general. I then narrowed my search dramatically towards effects of DL interventions (as opposed to design or specific technologies), graduate students in general, and, when possible, specifically medical education students. Reviewing this literature was not the focus of this submission, but I required a fundamental and cumulative understanding to provide a framework. However, much of the literature surrounding DL was not cumulative in nature and did not build on a body of knowledge that could inform policy-makers and practitioners (Evans and Benefield, 2001; Goel *et al.*, 2012). Therefore, I strategically chose literature reviews as a baseline to begin. Literature reviews allow authors to demonstrate a critical analysis of a group of studies, incorporating the author's interpretation of the complexities of each individual study (Evans and Benefield, 2001; Eva, 2008). Keeping my goal in mind of improving as a lecturer (practitioner) this seemed like a justifiable and pragmatic approach, although I was aware that even with systematicity often reviews are biased by the authors and open to individual interpretations and synthesis (Colliver *et al.*, 2008; Eva, 2008). A full justification of my decisions in this review can be found in Appendix B.

Results

Three major non-systematic reviews (Wutoh *et al.*, 2004; Khan and Coomarasamy, 2006; Lam-Antoniades *et al.*, 2009) and one systematic review (Cook *et al.*, 2008) were found addressing DL in continuing medical education (CME). Wutoh *et al*. (2004) performed a narrative review of the effect of internet-based CME. They defined their target area as RCTs (randomised controlled trials), meta- analyses or retrospective studies comparing outcomes between a DL intervention (internet, web based or software applications) and a control group in health care professionals. After identifying 86 studies, only 16 met their explicit inclusion criteria. Fourteen of these studies were RCTs and two were quasi-experimental. Twelve of them were comparison studies (i.e. web based vs. either lecture or print based teaching). Fifteen of the studies used objective assessments pre and post intervention as outcome criteria and one conducted knowledge tests 4-6 months after intervention. In addition to objective assessments there were measures of subjective evaluations in 10 of the studies. These included self reported changes in clinical practice and satisfaction. In the six Web

based vs. print based comparison studies, three reported better objective knowledge scores in the Web group. In the six Web based vs. lecture based interventions, four showed better knowledge scores in the Web group. The other studies not showing an advantage for DL showed no difference between groups. Two studies were based on online discussion groups. One showed a self reported increase in knowledge and change in practice whilst the other showed no change in knowledge or practice. A final set of studies utilised online discussion, 'other' resources and case based learning. Self reported confidence and communication groups as well as knowledge scores were improved compared to the control group. In one study, the intervention was CD-ROM based with web support. The intervention group showed better scores on objective types of knowledge. The conclusions in this paper were internet based CME programmes were as effective as traditional programmes in imparting knowledge (Wutoh *et al.*, 2004, p.20). Basically, if students were taught using some kind of DL tool, they benefitted. There was no discussion of how this translated into practice. No description for assessing validity of individual studies was given.

In 2009, Lam-Antoides *et al*. reviewed RCTs involving health care graduates in the US. Fifteen RCTs involving DL from 2004-2007 were reviewed. Six studies compared DL intervention vs. no intervention, four compared DL to traditional learning, two compared differing technologies and three compared timing of delivery. Using a narrative structure, these collated groups were described and there was no attempt to combine results statistically in a meta-analysis. There was no abstraction or selection procedure described. Of the six studies comparing DL to no intervention, four showed an effect of the intervention. In the DL vs. traditional teaching comparison, two showed an advantage for DL. In the two studies comparing technologies, both multi-component designs showed an advantage over flat text and in the two timing studies, there was no difference between short or longer delivery times. This review focused on RCTs because they wanted to '*limit the review to RCTs with the objective of focusing on the best-quality data available*' (Lam-Antoniades *et al.*, 2009, p.45). This was the only review that restricted inclusion to a particular design. The context and complexity of educational processes were not addressed, nor even suggested as a possible limitation to this process. There was no attempt to explain why RCTs would provide the data required. Both of these reviews (Wutoh *et al.*, 2004; Lam-Antoniades *et al.*,

2009) followed a similar approach in identification of relevant papers, study design, interventions and description of outcomes. The authors drew conclusions from individual studies and groups of studies, but only Lam-Antoniades *et al*. (2009) used a specific framework for addressing quality which was explained and followed.

In 2006, Khan and Coomarasamy conducted a review of both theoretical and empirical literature addressing evidence based medicine distance teaching activities. They reviewed RCTs, non RCTS, before and after studies and theoretical or consensus articles. Findings included that DL could be integrated into practice due to the easy availability of information and communication technology. Without a clear explanation of analysis, they suggested that successful DL was learner centred and focused on networking, self- assessment and feedback. They did caution, however, that due to the extensive heterogeneity in teaching methods, delivery systems and assessment methods, it was not possible to establish which elements contributed to an effective DL strategy in evidence based medicine. Although the authors claimed theoretical saturation during the search, no details of this process were explained. Again, the results were not conclusive, but supported the DL trend as a possible method of creating blended or more flexible learning opportunities for post-graduate doctors (Kulier *et al.*, 2009; Woltering *et al.*, 2009).

David Cook , an American well known in medicine and DL performed a meta- analysis on 206 studies comparing internet based instruction to 'no intervention' or 'non-internet interventions' from 1990 on (Cook *et al.*, 2008). This included all health care professions, (including doctors) and papers were evaluated independently by two reviewers. Study quality and standards were transparent and followed the 'Quality of Reporting of Meta-analysis of Observational Studies in Epidemiology Standards' (Cook *et al.*, 2008, p.1182). Data bases explored were broad and this was the only review found in which there was a further hand search and contacting of authors for contextual information, attempting to investigate the complex environment of learning more closely. Data was extracted including characteristics of learners, learning setting and intervention and synthesised followed by statistical analysis (ensuring measures to quantify inconsistencies, subgroup analysis and sensitivity analysis). In the 126 interventions vs. no intervention group, 124 reported an increase in knowledge

outcomes from DL. Sixteen interventions reporting skills outcomes and 32 interventions reporting effects on learner behaviour or patient care were also reviewed. All of these studies showed a DL benefit. In the internet based intervention compared to non internet, the results were inconsistent and heterogeneous. Potential biases were acknowledged due to selective publication and the scarcity of essential information regarding context in the educational process (including instructional design and outcomes) of many of the papers. Also, the coding was based only on published descriptions of the complexity of learning, not the actual event. This was the only review in which the authors considered languages other than English, focused specifically on medical educators and was the most recent review of literature found. Their results supported the previous literature that internet-based learning compared to no intervention has positive effects and effects compared with non-internet instructional methods are heterogeneous and small.

All four reviews varied in terms of learners included, levels of health care professionals and stages of training. The learners were all described in detail (more so in the Cook (2008) paper) and sub-group analyses, at varying levels, have been done. All reviews also contained students, although the Lam-Antoiniades (2009) group excluded student only studies. Only Cook *et al*. (2008) and Khan *et al*. (2006) highlighted the complexities and heterogeneity of intervention or design. The DL initiatives varied immensely (i.e. asynchronous email vs. synchronous video conferencing). The significant differences between multi-media and multi-component interventions and basic online exercises were not addressed in two studies (Wutoh *et al.*, 2004; Lam-Antoniades *et al.*, 2009). Outcome measures were variable across all studies included in the reviews, but there was an attempt to compensate by grouping the level of outcome measure in all of the reviews (satisfaction, knowledge, skills, and behaviour or patient effects). All four papers highlighted that publication bias was a potential problem. Of the four, only Khan *et al*. (2006) specifically addressed both theoretical and empirical evidence. However, they reviewed only 23 papers and claimed theoretical saturation (Khan and Coomarasamy, 2006).

2.2.2. Summary of research on effective distance learning

From the above reviews, some critical academic conclusions were drawn, alongside very practical ones. The main conclusion included there were doubts whether there was any value comparing one teaching method (DL) to another (anything else) due to alternative methods that could explain the results (Cook, 2007). Not surprisingly, most research compared DL to traditional learning and showed little difference in achievement (Williams *et al.*; Wutoh *et al.*, 2004; Khan and Coomarasamy, 2006; Cook *et al.*, 2008; Lam-Antoniades *et al.*, 2009; Goel *et al.*, 2012).

- There were studies that compared DL to face to face teaching in CME. However, the validity of these comparisons was weak as the effectiveness of any teaching method is highly complex and unlikely to be captured by comparison or be examining pre and post test scores (Walsh *et al.*, 2010).
- Generalisability or even transferability of many of the effectiveness studies was limited. Information regarding context, content, technological characteristics and type of DL was often not defined (Ruiz *et al.*, 2006; Hadley *et al.*, 2010), which made the findings difficult to inform the development of other DL initiatives.
- Statistical analysis of mean scores derived from Likert scales appeared to be a popular method for data analysis concerning satisfaction with DL. This is a sound method for providing a quantitative measure (Robson, 2002), however may be a barrier to capturing the complexity of human perceptions and experiences with DL.
- Many of studies addressing DL in CME were of limited quality. For example a semi-systematic review of publications for an editorial published in 2005 found 72 studies, but the majority of these were either descriptive or included no comparison group, and the majority reported outcomes solely in terms of user satisfaction (Cook 2006).
- Overall, (and thankfully), there were very few studies of any design where CME DL interventions proved ineffective compared with placebo or no intervention. It seems highly likely therefore that DL can have positive effects on learning for practicing physicians. Although this positive effect appeared to be measured by short term knowledge outcomes, it also

seemed to be evident for skills and behaviour outcomes when they were addressed.

2.3. Student Experience: Transactional Distance Theory

'Theories such as Transactional Distance Theory are invaluable in guiding the complex practice of a rational process such as teaching and learning at a distance' (Garrison, 2000, p.3).

Introduction

Although learning at a distance is not new, 'distance education' was popularised in the 1970s (Moore, 1973). There were early attempts to define it, and controversies around what it actually was. One of the barriers (and 40 years on, the most revolutionary argument for me) was basically this: Is distance education a geographic separation of learners and teachers, or a pedagogical concept? Moore (1973) suggested the latter. He developed Transactional Distance Theory (TDT) in an attempt to demonstrate and explain that distance education was more concerned with pedagogy than geography (Moore, 1973; Moore, 1991). In this student experience centred section (Figure 4) of the review, the focus is specifically on transactional distance theory. As outlined earlier, definitions and search strategies can be found in Appendix B.

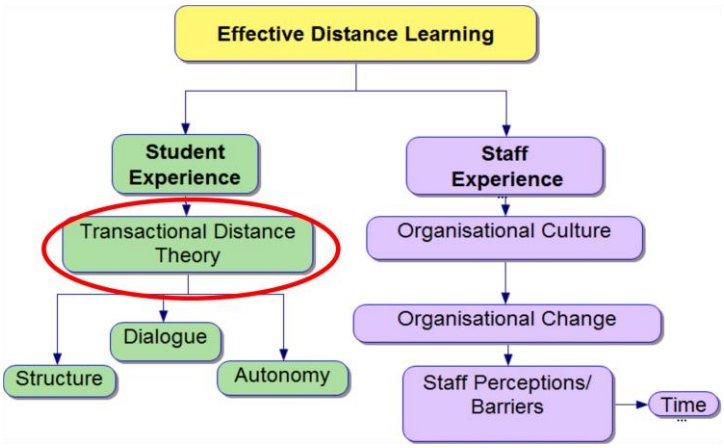


Figure 4: Literature review overview- TDT

Results

In 1973, Moore initially defined TDT as a psychological and communications gap that was a function of the interplay of *structure,* and *dialogue.* It was the cognitive space between teachers and students that must be crossed yet was a place of potential misunderstanding between the teacher and the learner. This space was continuous, relative and never exactly the same. Ideally, this distance or space needed to be minimised or shortened. Moore (1997), Lowe (2000), Wallace (2003) and Rumble

(1986) explained that even in traditional education there was transactional distance and therefore the actual theory was a subset, albeit specialised, of conventional teaching and learning. However, in DL, due to the unique environment teachers and learners experienced **more** of a distance due to the physical distance (and if asynchronous, time) that separated these two groups. Therefore, transactional distance theory, more specifically, the transactional distance between teacher and learner, was potentially more problematic at a distance and may have contributed to students' feelings of isolation, reduced motivation and engagement and eventually attrition in early DL (Moore, 1991). Moore (1973) originally suggested that developers of DL must consider two variables that affect transactional distance: structure and dialogue. Structure was the rigidity or flexibility of the instructional methods and strategies whilst dialogue referred to the interaction between the instructor and learner during a DL experience. Transactional distance was a function of dialogue and structure. With less dialogue and more structure, the transactional distance was higher (Figure 5).

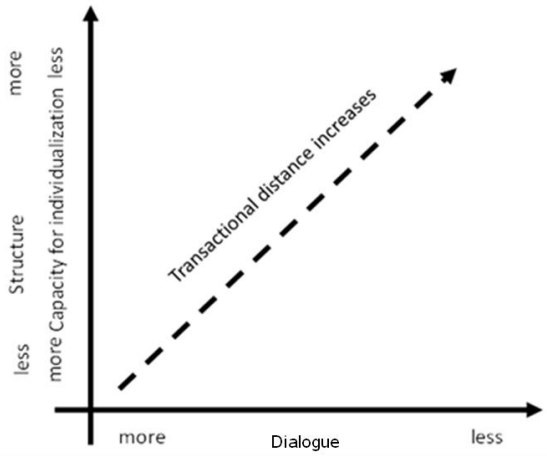


Figure 5: Relationship of structure and dialogue to transactional distance (Moore, 1973)

In a course with little transactional distance, learners have guidance through ongoing dialogue (Moore and Anderson, 2007). This would be more appropriate, or attractive to learners who were less secure in managing their own learning. Moore (1991) later recognised with minimal dialogue, students were forced to make their own decisions for themselves and generally exercise autonomy. Working with Kearsley, he later identified three interactive components or constructs (Moore and Kearsley, 2012) that needed to be considered to shorten the transactional distance and provide a meaningful learning experience for students. These included the original two:

- Structure of the instructional programs
- Dialogue or interaction between learners and teachers

and the new addition:

- Autonomy or the nature and degree of self directedness of the learner.

This third hypothesised factor, autonomy, interacted with both structure and dialogue and the three together formed a model or theory (Wallace, 2003) for understanding online learning (Moore and Kearsley, 2012) (Figure 6).

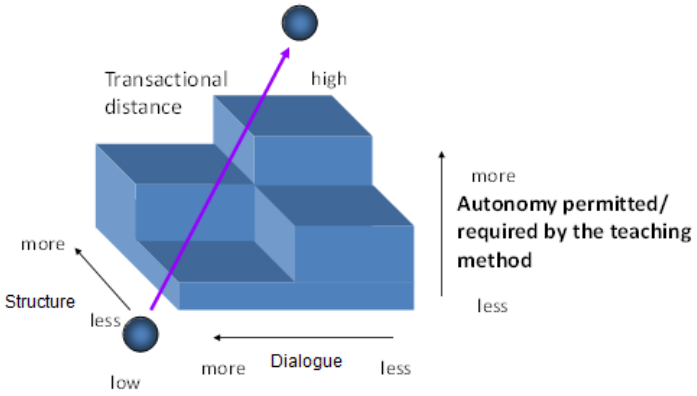


Figure 6: Overview of transactional distance theory (3D Model)

According to Moore and Kearsley (2012), structure was determined by the actual design of the activity, how the instruction was organised and the use of different media communications. Dialogue could be synchronous, asynchronous and dialogue that was internalised within the student. Learner autonomy related to the individual learner's self-directedness or sense of personal responsibility. There appeared to be a relationship between structure, dialogue and autonomy. The greater the autonomy, the less teacher control there needed to be to decrease the transactional distance and have a successful distance module. Conversely, with less dialogue and more structure, the likelihood of an increased transactional distance, which in turn led to less successful online programmes, was greater (Moore, 1997). Successful distance environments depended on the teacher providing opportunities for dialogue and 'appropriately' (Moore, 1997) structured learning materials. This became extremely complex. Identifying the level of structure required, facilitating dialogue and encouraging individual learner autonomy was demanding and multifaceted as the

greater the structure and the lower the dialogue, the more autonomy the student must demonstrate.

Deweyian Link

These three complex factors relate to Dewey's (2007) work. He suggested the educational process is a collaborative reconstruction of experience and has two sides: one psychological (cognitive) and one sociological. He warned that neither could be subordinated to the other or neglected without consequence.

Dialogue or interaction between learners and teachers: Dialogue, and engaging in interaction forces individuals to construct ideas in a deep learning sense (Moore and Anderson, 2007). Dewey (2007) supported this constructivist approach to learning. He discussed the need to support learners' in their construction of meaning and argued only through social interaction and interaction with the environment could the learner construct conceptualisations and find solutions. He reasoned that through interpersonal, instructional dialogue the learner gains advantages in the pursuit of knowledge and understanding.

Structure of the instructional programs: Dewey (2007) described the function of education as improving the reasoning process. Based on active experience, the role of the educator was to shape experience and structure the environment to promote experiences leading to growth. This role was one of a guide, or facilitator encouraging creative interaction and emphasising the development of solving problems and discovering knowledge. These higher order activities are encompassed in Dewey's (2007) practical inquiry model which includes four phases: triggering event, exploration, integration and resolution.

Autonomy or the nature and degree of self directedness of the learner: Autonomy, the third factor in TDT is reflected in constructivist views encouraging active, collaborative and responsible learners (Tam, 2000). The genesis of self-directed learning can be attributed to Dewey (Moore and Anderson, 2007) who suggested that autonomy helped create the conditions that encourage individuals to exercise initiative, reflection and choice (Dewey, 2007).

2.3.2. A critical view of Transactional Distance Theory

Many researchers (Collins and Murphy, 1997; Garrison, 2000; Jung, 2001; Goel *et al.*, 2012) identified transactional distance as important and viewed TDT and as a basic analytical framework for understanding distance education systems.

> *'Transactional distance theory provides a useful conceptual framework for defining and understanding distance education in general and as a source of research hypotheses more specifically' (Jung, 2001, p. 527).*

Despite the considerable time span over which this theory has evolved, and the value I have placed upon it, there are critics and little empirical research has been carried out to test the validity and relationships of the constructs (Gorsky and Caspi, 2005; Goel *et al.*, 2012).

TDT has been investigated from different perspectives. Two studies were found using questionnaires as data collection tools (Bischoff *et al.*, 1996; Chen and Willits, 1998). Bischoff *et al*. (1996) were interested in student perceptions of transactional distance, structure and dialogue. Transactional distance, dialogue and structure were all related to certain 'items' (in reality questions). Each variable was then measured using data generated from a fixed questionnaire. Transactional distance was measured by two items, dialogue by one item and structure by three. The results supported Moore's theory showing dialogue and transactional distances were inversely proportional. However, dialogue (a complex variable) was measured by only one item, there was no discussion of quality of dialogue (only quantity) and the actual items being measured were not clearly defined.

In an attempt to investigate TDT further and create a clear connection between dialogue, structure and autonomy as they related to learning outcomes, Chen and Willits (1998) reviewed 121 learners in a DL environment. Operational definitions were given and they looked at dialogue in terms of frequency and occurrence, structure in terms of delivery and implementation and autonomy in terms of personal ratings of independence. These variables were compared to student's self assessment. The results found only two variables had significant effects on perceived learning outcomes: the greater the perceived transactional distance, the lower the perceived outcomes and the greater the frequency of discussion, the higher the perceived

achievement of learning outcomes. The results support Moore's theory, although as in (Bischoff *et al.*, 1996) a simple questionnaire was used, data was collected only once and dialogue was measured only by frequency.

Two articles were found addressing TDT that measured observable behaviour as opposed to student perceptions (Saba and Shearer, 1994; Bunker *et al.*, 1996). Saba and Shearer (1994) collected data on 30 interactions between instructors and learners and measured behaviours using the 'systems dynamic model'. They measured verbal behaviour using a discourse analysis and, combined this with a measure of 'structure' of the programme then identified the variance. By measuring the rate of instructor and learner control, this variance (the ratio between amount of dialogue and extent of structure) was the transactional distance. The results demonstrated that transactional distance varied with dialogue and structure. As dialogue increased, distance decreased; as structure increased, transactional distance increased. This model produced values for transactional distance consistent with Moore's theory and suggested that transactional distance was directly proportional to dialogue and inversely proportional to structure. Although this supported Moore, the quantification of dialogue and structure of a programme was problematic to me. They looked only at one-to-one synchronous communications between learner and teacher. Therefore, the generality of the study is limited and it is hardly representative of the module I ran or the majority of DL trends. Bunker *et al*. (1996) investigated the effects of change in structure on dialogue during an audio-conferenced course. Only structure and dialogue were compared. Over 100 students participated and dialogue was measured in frequency and duration whilst structure was defined by one aspect of instructional design (question asking behaviour of instructor). In support of TDT, different types of interactions and questions appeared to determine learner participation. According to the authors, of the four experimental procedures one was cancelled and one was biased. The instrument for measuring interaction was not shown to be reliable, the samples were not clearly described and the grouping unclear. Again, dialogue was measured in terms of frequency and duration. However, the results suggested that certain types of question-asking behaviour by the instructor could predict dialogue in the student (Bunker *et al.*, 1996). The authors claimed that both structure and dialogue

were important to success and by increasing dialogue and structure, one could increase student participation and decrease transactional distance.

Two articles were found (Chen, 2001; Stein *et al.*, 2005), from very different perspectives, using questionnaires to explore influences of variables in DL and presenting conflicting results. Stein *et al*. (2005) examined the effects of course format, satisfaction and perceived knowledge gained during an online programme. Satisfaction was broken down into different aspects to relate to the constructs set out by Moore (1991) in TDT. A questionnaire was used and the instrument was described. A very low response rate (17%) was not explained, however, there did appear to be a relationship between course design and satisfaction. The more satisfied the learners were with the structure and with interaction, the more satisfied they were with their perceived knowledge gained. This supported Moore's (1991) assertion that structure needed to be appropriate for the learner and that low structure and high dialogue could lessen transactional distance. An interesting article, publishing negative findings by Chen (2001) investigated the impact of individual and instructional variables on 71 (87% return rate) learner's perceived transactional distance. Once again, questionnaires were used to measure student perceptions (on a 23 item sliding scale) and results analysed against four variables. The results did show a high ratio of certain variables to perceived transactional distance. Although peripheral, their findings also included that neither face to face interaction during an online course or previous experience changed transactional distance. Interestingly, some of the results suggested a negative effect between transactional distance and 'online tutoring' or interaction although 'online tutoring' was not clearly described. Content validity of the survey was addressed in that 'experts' and 'educationalists' reviewed the tool and there was a high response rate. Chen's (2001) conclusions were that alternative measures of transactional distance (qualitative, observation, interviews) would help understand these phenomena. Predominantly published literature was biased towards positive results (Cook *et al.*, 2008), so this article was a valuable alternative perspective.

In 2009, a review classifying 695 articles on DL was carried out. The focus was to identify gaps and priority areas in DL research. A consensus of 25 experts reviewed research published between 2000-2008 (Zawacki-Richter, 2009). The method and

results were clearly described and this was one of the only DL reviews found that included non-English journals. (One of the criticisms of distance education reviews is the focus on 'peer reviewed' English language journals (Berge and Mrozowski, 2001).) Fifteen main research areas and strong imbalances were described. They found research 'dreadfully neglected 'on organisational change and development, costs and faculty support. These are all addressed in this submission and in my own review. However, closely related to TDT, they identified an imbalance with over 50 % of all articles focusing on:

- instructional design
- interaction and communication in learner communities
- and learner characteristics (including motivation and autonomy).

Although not highlighted by the authors of this review, these corresponded directly with Moore's three components of TDT. Admittedly, TDT appears to be a descriptive, rather that predictive theory, but there is a clear collaboration with outcome variables (Wallace, 2003). Furthermore, Moore's concept of transactional distance was a significant paradigm shift for educationalists as it grounded the concept of distance in distance education in a social science framework and not in its usual physical science interpretations (Moore and Anderson, 2007). Whether there are strong empirical studies supporting Moore's theory or not, it is evident his three components continue to be a priority in research (Berge and Mrozowski, 2001; Zawacki-Richter, 2009; Goel *et al.*, 2012).

2.3.3. Summary of research on TDT

- TDT had roots in humanistic and behavioural ideologies.
- Structure and dialogue were the initial factors in Moore's (1973) TDT theory and a third factor, autonomy was later added (Moore and Kearsley, 2012).
- Structure, dialogue and autonomy were related, dynamic and necessary, in successful distance education (Moore and Kearsley, 2012).
- Moore did not define any of the constructs operationally (Gorsky and Caspi, 2005), which has led to lack of clarity in follow up research.
- Studies investigating the complex constructs of autonomy and self-directedness using closed questionnaires and scales were common.

- The majority of published work investigating TDT has been approached from a positivist paradigm looking for correlation and statistically significant relationships between complex concepts (for example, autonomy and perceived learning outcomes).
- None of the studies found supported or totally negated the proposition of transactional distance.
- All of the studies reviewed suggested that future research into this area should include interview or observational data (Saba and Shearer, 1994; Bischoff *et al.*, 1996; Bunker *et al.*, 1996; Chen and Willits, 1998; Chen, 2001; Kanuka *et al.*, 2002).

2.4. Student Experience: Structure or design

'Educators must recognise that poorly designed educational programs…are not improved by being presented on a Web page' (Chumley-Jones *et al.*, 2002, p.s87).

Introduction

This section of the literature review addresses the three component parts of TDT separately (Figure 7) and relates them to my experiences.

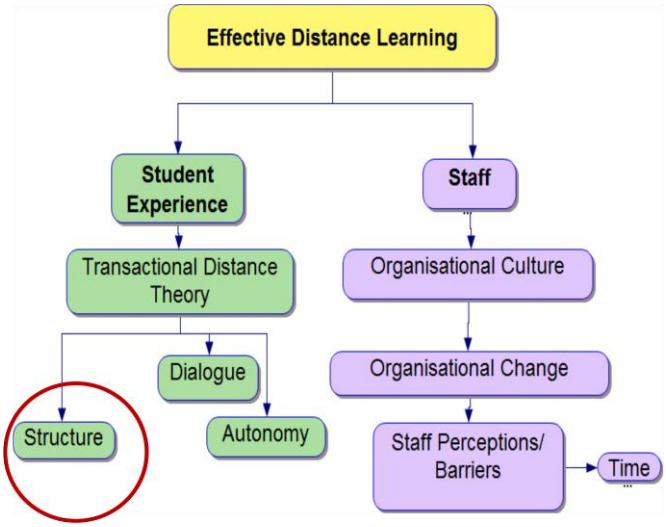


Figure 7: Overview of literature review-structure

Results

Structure or course design was probably the aspect of the literature in which I was most familiar. Formal 'instructional design' (ID) models, a systematic approach for developing educational products, used liberally when designing web-based courses at the University level (Joiner *et al.*, 2008; Goel *et al.*, 2012) all contained a number of key

elements or components and have been widely adapted in e-learning (Beetham and Sharpe, 2010). The four core components of ID as they related to educational programmes are (Smith and Ragan, 2005):

Components of Instructional Design
analysing the problem
designing a solution
implementing the solution
evaluating the degree of success of the solution

Table 2: Core components of instructional design relating to educational programmes

Various models have adapted ID, but they are based on the desire to provide guidance to designers as they aim to develop effective and consistent educational solutions on a reliable basis (Joiner *et al.*, 2008; Beetham and Sharpe, 2010). One of the most popular (Ipek *et al.*, 2008) and best documented models (Dick and Carey, 1985) was ADDIE, comprised of five stages of instructional design: analysis, design, development, implementation and evaluation. The ADDIE model specifically (Dick and Carey, 1985; Gustafson, 2002; Dick *et al.*, 2005) and ID in general (Smith and Ragan, 2005; Ipek *et al.*, 2008; Joiner *et al.*, 2008; Koksal, 2009; Morrison *et al.*, 2011) have been researched intensely relating education to technology. Dick and Carey (1985) and later Dick, Carey and Carey (2005) argued that the systematic approach to ID provided an empirical and replicable process when developing learning materials.

2.4.2. A critical and personal view of Instructional Design

Although there was a plethora of research suggesting these models were the clear way to structure DL, there were critics as well. Much of what is termed 'e-learning' was still based on the recursive decomposition of knowledge and skill principles of ID (Beetham and Sharpe, 2010). The supporters of rigid ID tended to be training organisations with a training philosophy whose intellectual base consisted of principles derived from behaviourism and associationism (Beetham and Sharpe, 2010). Gustafson (2002), well known and published in the field of ID in America, looked critically at four different 'tools' based on ID, including the ADDIE model. He critiqued all four for their expertise required, lack of collaborative learning, lack of authenticity and linear nature.

Structure or instructional design and transactional distance theory

Instructional design seemed uniquely poised to bridge the knowledge gap in the provision of DL by identifying what historically had been done in education and

describing new directions in course design and structure (Moore and Anderson, 2007). This gap in knowledge relative to course design was especially applicable in the area of medical and allied health education (Joiner *et al.*, 2008). Forty years ago, Moore prophetically discussed design or structure as being imperative in successful DL environments (Moore, 1973). In 2010, Beetham and Sharpe addressed design again and suggested it was an ideal term to use as it bridged both theory and practice. Appealing to my Pragmatic view, they elaborated by explaining it encompassed both a systematic approach based on hard evidence and a set of contextualized practices that were constantly adapting to circumstances (Beetham and Sharpe, 2010). As a practicing academic, establishing the fundamental elements of formal design and structure was necessary, yet I was not particularly concerned with the intricacies relating to the differences in concepts or models. I was interested in the kind, or amount of structure necessary when designing DL. Did design play a central role in effective DL environments? Could I decrease the psychological and communicative gap of transactional distance by altering the structure? I agreed with Shea *et al*. (2003) that, as an academic, my need to better understand the important role that design played in student satisfaction and achievement in the online environment was crucial. Did the amount of structure affect transactional distance for students; if so, how?

Using surveys only, Swan (2002) and McNaught *et al*. (2011) investigated structural factors affecting DL focusing on satisfaction, assessment of learning outcomes and perceived achievement of learning outcomes. Swan (2002) studied 38000 students taking 264 online courses in New York, analysing course documents and student questionnaires (38% return rate). McNaught *et al*. (2011) investigated 21 online courses using expert reviews of learning designs and student perception surveys. Both studies demonstrated a correlation between greater structural consistency within the course, student satisfaction and perceived learning, used at least two methods of data collection and multiple raters for analysis of the data. However, the persistent attempt to quantify and measure people's perceptions of satisfaction and perceived learning is questionable given the complex nature of these constructs. Regardless, students were more satisfied with courses that had defined structure and they felt they had learned more than totally open and flexible courses.

In a study using closed question surveys followed by interviews, Song *et al*. (2004) collected data from 76 students who were asked to identify either challenges or useful components in their online experience. The students were all undertaking a full degree using different technologies and structures, yet all from a distance. The closed response questions were followed by nine semi-structured interviews. Two researchers conducted the interviews and data was thematically analysed and used to substantiate and extend earlier results from the questionnaire. The results suggested (89%) that the design of the course was the most important component of a successful e-learning experience (Song *et al.*, 2004) which supported the necessity and importance of instructional design, regardless of the mode of delivery. The sample size was small; the response rate of the survey was not given, nor was the relationship of the interviewees to the students. However, this is one of the few studies using mixed methods that have approached instructional design and student learning or satisfaction from a less positivist approach. Multiple sources of data collection were used which may have allowed researchers to validate and crosscheck findings (Patton, 2002).

Shea, Pickett and Pelz (2003) and Stein *et al*. (2005) both investigated structure in relationship to student satisfaction and perceived learning. Shea *et al*. (2003) surveyed 6088 (31% return rate) DL students in New York and compared levels of structure and instructional design to student satisfaction. Stein *et al*. (2005) surveyed 201 (17 % response rate) learners in a Midwestern American University comparing levels of satisfaction with structure and design, satisfaction and perceived knowledge gained. Both of these studies used closed questions and rating scales, the questions were not clear to the reader and the response rates were low. However, in both studies, the central role of structure and student satisfaction or perceived knowledge gained was supported.

In one of the few studies specifically addressing context, Benson and Samarawickerama (2009) compared six case studies of 'successful' DL initiatives in Australia. Definitions and programmes were clarified and their focus was to illustrate how e-learning designs (specifically those using Web 2.0 technologies) were instrumental in increasing success and decreasing transactional distance. With a

practical focus and rich contextual description, these cases suggested that by carefully structuring and designing a course, transactional distance can be decreased. They also highlighted that design must be variable and provide a clear strategy for an analytic approach that is responsive to both the learners and the context of their learning.

2.4.3. Summary of research on Instructional Design or Structure

Formal instructional design, in its prescriptive and inflexible sense was the basis for most early DL initiatives. Although when subscribing to a learner centred perspective this seems problematic, more progressive models have been developed incorporating constructivist and interactive approaches to planning DL. The amount and type of structure necessary appears to be inconsistent. However, there does appear to be a relationship between the level of structure and student satisfaction and an increase in perceived learning.

- Originally, ID was developed to emphasise 'learning by doing' with immediate feedback on success, careful analysis and atomisation of learning outcomes and above all aligning these learning outcomes with instructional strategies and methods to assess the learning outcomes.
- The ID approach to e-learning has become widely, yet perhaps unfairly discredited (Beetham and Sharpe, 2010). This may be due to the fact that a number of terms and expressions are used synonymously with ID and although the basis is behaviourism, or a teacher centred model, this is often an unfair association (Wilson and Myers, 2000).
- Many models that are labelled as 'constructivist' are indistinguishable from those derived from the associationist perspective (Beetham and Sharpe, 2010).
- Recently ID and general DL structure has moved towards creativity and interaction and away from low-level immediate responses (Morrison *et al.*, 2011).
- Empirical and case study literature has repeatedly explored the relationship between a) structure or design and b) student satisfaction, transactional distance and learning.

- There appears to be a close relationship between a) structure and b) transactional distance, student satisfaction and increase in perceived learning.

2.5. Student Experience: Interaction and communication

Learners interact with their environment (Moore and Anderson, 2007, p.15).

Introduction

The published research on DL is abundant, however, the actual student experiences have gone relatively undocumented (Alexander, 2001; Cook, 2006) and are not fully understood (Moule, 2007). My challenge was to understand, students' use of technology to support higher-order learning, interaction and dialogue (Moore and Anderson, 2007). The second factor contributing to an understanding of TDT was interaction, communication or dialogue and is the focus of this section.

Results

Communication, interaction and support from faculty and peers is consistently rated as having a major influence on DL (Mason and Weller, 2000; Hill *et al.*, 2003; Song *et al.*, 2004; Hermans *et al.*, 2009; Moule *et al.*, 2010; Phielix *et al.*, 2010; Ituma, 2011; Seddon *et al.*, 2011; Goel *et al.*, 2012). However, our understanding of its use is seriously limited (Moore and Anderson, 2007) by empirical research which has used rating scales and closed questionnaires to explore perceived support and perceived learning. With the exception of Phielix *et al*. (2010) and Seddon *et al*. (2011) the papers above investigated student satisfaction and barriers or facilitators to DL. They were not directly focused on interaction or dialogue; they were exploring experiences generically. Moule *et al*. (2010) specifically addressed postgraduate health care education, investigating nurses' experiences. Her findings supported the other studies; the interaction between the instructor and student, or student to student, was highlighted as integral to a positive learning experience or improved outcome.

Salmon (2008), a highly respected and well published distance educator in the UK, developed a 5 stage model illustrating online interaction or engagement (Figure 8).

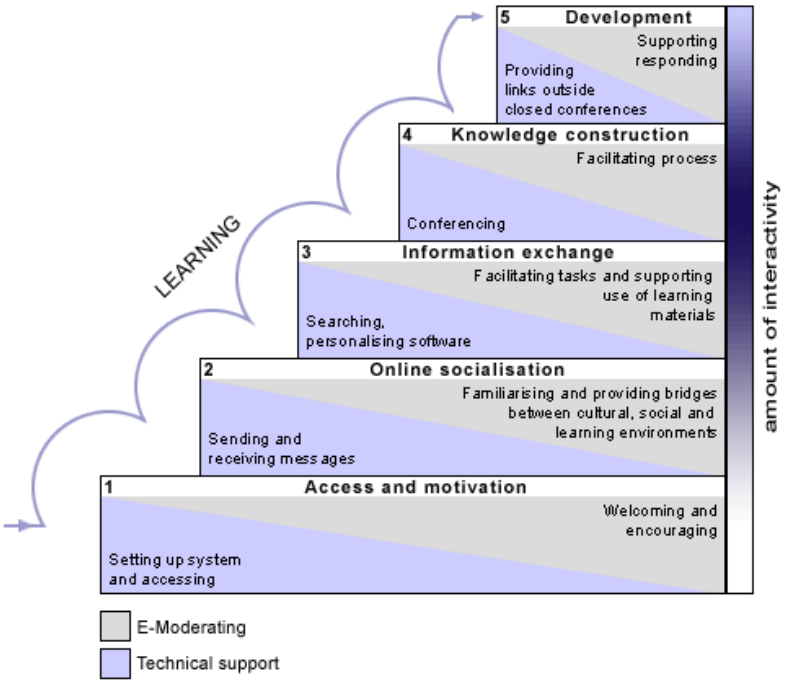


Figure 8: Gilly Salmon's (2008) Five stage model of online learning and teaching

She used this model as the basis for analysing and describing how the teacher or 'e-moderator' could support student learning (reading her book *E-moderating* cover to cover played a major part in my beliefs and how I structured the module). Other models and conversational frameworks of analysing online discourse (Gunawardena *et al.*, 1997; Harasim, 2000; Laurillard, 2002) followed a relatively similar pattern of generating ideas, increasing interaction and information exchange followed by divergent thinking and development. These models have been criticised as being artificial, prescriptive and based on personal experience, not empirical research (Wallace, 2003). Salmon's work specifically has been criticised for its focus on the advancement of individual practitioners and the lack of attention paid to leadership and the institution as a whole. Whether or not she was lacking in this area did not interest me. I was interested in improving as a grass roots practitioner, not to provide a leadership or institutional role to the university at this point. I supported Salmon (2008) that regardless of the model, there is, unequivocally, a human-factor in DL success. I did not believe DL was a solitary process. Successful initiatives must be scaffolded by dialogue and promote interaction and participation (Salmon, 2008).

As discussed, the majority of the literature included interaction as one of the several factors affecting success in DL. A small amount of literature was found that addressed interaction, dialogue or engagement specifically.

2.5.2. Learner-learner and instructor-learner dialogue

Learner-learner and instructor-learner dialogue was the focus in a study of 38000 students taking 264 online courses in New York. Swan (2002) analysed course documents and student questionnaires (38% return rate). Student perceptions were explored based on learning, interaction with instructor and classmates, and personal level of activity. She found significant correlations with student satisfaction and interaction with the instructor ($r=0.761$, $p=0.01$) and perceived learning ($r=0.707$, $p=0.01$). There were also significant correlations between interactions with other students and course satisfaction ($r=0.440$, $p=0.01$) and perceived learning ($r=0.437$, $p=0.01$). Her findings appeared consistent with the literature in that interaction with instructor and amongst peers was consistently associated with the success of online courses (Swan, 2002). Although this study was supported by research in a similar vein (Moore and Anderson, 2007), there were some fundamental issues that were problematic. The survey consisted of multiple-choice and forced- answer questions investigating the 'dimensions' of satisfaction and perceived learning with no explanation as to how these questions were developed. There was no explanation for this quantitative attempt to measure the complex nature of satisfaction and learning.

2.5.3. Instructor-learner dialogue

Baker (2004) looked at instructor-learner dialogue, specifically, examining the relationships between verbal immediacy and affective and cognitive learning in DL. He surveyed 145 post-graduate students involved in an asynchronous online course using a questionnaire based on several verbal immediacy scales (described in detail) and both cognitive and affective learning scales. The verbal immediacy scale consisted of 20 statements concerning instructor behaviour, the affective learning scale six dimensions and the cognitive learning scale was designed to produce a measure of learning loss. The hypothesis of correlation between instructor immediacy and affective learning was supported ($r=0.73$, $p<0.01$). The hypothesis of positive correlation between instructor immediacy and cognitive learning was supported, albeit it weakly ($r=.054$, $p< 0.01$). The verbal immediacy scale was based on other scales developed in a traditional face to face environment, yet the use of them in a non – traditional asynchronous environment was not justified. These students were all studying humanities and may not represent other post graduates as their requirement

for instructor interaction may be unique. Regardless, the conclusion included a positive relationship between instructor immediacy and affective learning. Students who rated their instructors as more verbally immediate expressed improved affective and cognitive learning. Although immediacy of feedback was part of Baker's (2004) original aim, it was not the focus for review. The majority of the literature found investigated the value and necessity of speed in asynchronous interactions. Learner-learner and instructor-learner interaction has been shown to be effective in creating successful DL environments, but what has become key is timely interactions (Moore and Anderson, 2007). Timely interaction related to Moore's (1973) concept of TDT. This psychological separation was an interaction between levels of dialogue and levels of structure or autonomy. Therefore, the greater, and faster, and more involved the level of interaction or dialogue was, the lower the level of psychological feeling of separation there would be (Moore and Anderson, 2007). Timeliness of interactions, frequency, occurrence, type of interaction and immediacy are all areas that need to be examined more in distance education research (Moore and Anderson, 2007). These are particularly relevant to the DL context as there is a difference between face-to-face communication and online communication. In the online environment, there is a lack of both cultural and non-verbal cues as interaction is based on written text (Twomey, 2004). Winiecki (1999) supports this difference. He claims that due to potential misunderstandings and discussions that are difficult to follow in the online environment, negative side effects of both learning and in the social atmosphere can occur.

2.5.4. Learner- learner dialogue

According to Moore (1997) learner-learner interaction was essential. Two recent studies were found specifically addressing collaboration and peer interaction on performance in DL. Phielix *et al*. (2010) investigated social performance in computer supported collaborative learning, while Seddon *et al*. (2011) analysed participants' experiences thematically in web conferences. In the first study, 39 undergraduate students were assigned to groups with either specialised collaborative activities and structure or none (Phielix *et al.*, 2010). Data was collected on group performance using self and peer assessments and a rating scale for both behaviour and performance. These terms were all defined, although the rating scales were not validated or

transparent. The group exposed to the specialised collaborative activities demonstrated a perceived increase in team development, ability to deal with team conflict and a more positive attitude towards collaborative problem solving (Phielix *et al.*, 2010). Seddon *et al*. (2011) explored dialogue relating to learning in participants undertaking web conferences on leadership. Using data from two series of online seminars lasting over a year, the authors analysed all recorded 'text chat' data using thematic analysis. Validity was addressed by making the analysis process transparent, the analysis itself was done by three researchers and the final data was compared to the literature. Themes identified relating to learning were: social interaction, information giving, internalisation, co-construction of knowledge and multi-process learning. The results of both of these studies suggest that online activities that promote learner-learner interaction are important for effective team performance and collaborative learning (Phielix *et al.*, 2010; Seddon *et al.*, 2011).

2.5.5. Alternative approaches

I believed the students on my module were adults and agreed with Knowles that adults need to see relevance or usefulness in their learning activities (Knowles, 1978). Therefore, these learners needed to see how interacting with their peers would benefit them and have relevance to their learning. Two slightly eclectic studies were found that addressed this from alternative viewpoints. One of the few longitudinal studies within this entire review followed groups of adult learners over 15 years (Eustace, 2011). This three-stage ethnographic-action research study tracked learners and their learning community at a virtual university in Australia as they undertook a Masters of Arts degree. The cycles, agents of change and staged findings were well explained. Conclusions suggested peer dialogue provided the mechanism for deep learning experiences and a sense of community. They related their findings to Bandura (2002) suggesting a community of learning requires:

- relevance- social and situational
- involvement-reflective action and interpretive practice
- technology-enabling and self-efficacy with ICT
- acceptance- recognition by peers.

The aim of this interpretive study was to explore how post-graduates could be guided to create conditions for effective peer discourse. In order to understand this, a study using traditional scientific methods would be inappropriate. Of the four concepts listed as necessary, the social relevance or usefulness appeared to play the biggest role to students. This study was not addressing whether group interaction was valuable but what conditions were necessary for it to occur and be valuable for students. Supporting these findings, but from an alternative angle, Lee, Kim and Hackney (2011) presented a case study in which the interaction between learners was a failure (Lee *et al.*, 2011). This empirical positivist study used a questionnaire survey and statistical analysis addressing several hypotheses of why students did not participate in an online discussion forum at a University in West London. Hypotheses included low level of usage was due to either: attitudes of the student, low perceived usefulness of discussion board or technological complexity. The results from the 24 questions showed statistically significant results in that low perceived usefulness of the discussion board was the primary cause for its failure. The questionnaire consisted of scaled questions only and the development of the tool itself was not discussed. Although not made explicit, it appears that only 10% of the potential students completed the questionnaire. However, the conclusions support Eustace (2011) that usefulness or relevance is necessary for successful learner- learner interactions. The approach to present findings of an unsuccessful initiative was unique. One of the general biases with published materials is the possibility of publication bias where negative studies are unpublished (Cook *et al.*, 2008).

2.5.6. Summary of research on dialogue and interaction

Interaction or dialogue was clearly related to student satisfaction and perceived learning whilst relevance, usefulness and immediacy of interactions appeared to be the most integral issues in decreasing TD and contributing to successful DL environments.

- Interaction/dialogue/engagement were terms used simultaneously in the literature and there were three different divisions: instructor-learner, learner- learner and learner-content.

- Literature overwhelmingly suggested that learner-instructor and learner-learner interaction was important to student satisfaction and the facilitation of learning (Mason and Weller, 2000; Hill *et al.*, 2003; Song *et al.*, 2004; Hermans *et al.*, 2009; Moule *et al.*, 2010; Phielix *et al.*, 2010; Ituma, 2011; Seddon *et al.*, 2011; Goel *et al.*, 2012).
- Online 'community' or collaboration was an important variable in online classes. Without this online discourse, online courses became a mere transmission of information.
- Several frameworks for designing and analysing interaction in DL were found all aimed at student's progression into higher levels of thinking (Gunawardena *et al.*, 1997; Harasim, 2000; Laurillard, 2002; Salmon, 2008).
- E-moderators took on multiple roles: they moderated or facilitated discussion, answered emails and managed the flow of content or responses. Their presence and immediacy impacted on student satisfaction.
- Students required usefulness, value or relevance in online interaction or discussion for it to be adopted successfully.
- The roles that interaction and dialogue play in DL is not well understood (Goel *et al.*, 2012). Moore (2007) warned this area should not be underestimated and argued no other area of study will have a greater impact on the future of distance education.

2.6. Student Experience: Autonomy

Introduction

A hallmark of DL has been its reliance on learner autonomy (West, 2011) which was the third hypothesised element of TDT (Moore and Kearsley, 2012) and the focus of this section.

Results

Literature addressing autonomy in DL, unlike structure or dialogue which was relatively straightforward, was complex and multi-faceted (Garrison, 2000). Major reviews were found discussing autonomy in learning (Thanasoulas, 2000) and specifically autonomy in DL (Moore, 1973; Moore, 1997). In a review of autonomy and learning, Thanasoulas (2000) investigated literature over the last two decades, describing various definitions,

and highlighting inconsistencies in the literature. The review was divided into topics; however, there was no explanation as to search criteria or strategies. He defined autonomy in terms of a redistribution of power concerning the construction of knowledge and the roles of participants. Although, he did not address DL explicitly, he claimed autonomy was '*...a departure from education as a social process'* (p.116). I disagreed. I believed social processing or group dependence was a defining feature in DL.

Moore (1973) reviewed over 2000 pieces of literature concerning autonomy and his findings were supported by both Garland (1994) and Chen and Willits (1999). Moore's (1973) visionary work (pre-internet!) explained '*The autonomous learner is not to be thought of as an intellectual Robinson Crusoe, castaway and shut-off in self sufficiency*' (Moore, 1973, p.669).

Autonomy, to me, was not just about isolated learning (self-management of pedagogy). As I continued, there was another aspect of autonomy that became critically obvious: self-monitoring of cognition. In a later review, Moore and Anderson (2007) reviewed research on autonomous learning and further explained that there were two dimensions of autonomy in DL: self management of pedagogy and self-monitoring of cognition, or metacognition. They explained that both cognitive autonomy and taking responsibility for one's learning were essential. Focusing on the meta-cognitive aspects of learner autonomy, White (1995) compared strategies in classroom versus DL. Using questionnaires followed by verbal reports, she explored the relationship between autonomy and the instructional context of distance learners (n=274) or classroom learners (n=143) in a language programme. Variant analysis was applied to the questionnaire data to determine the relationship between learning strategies and context. The results showed that mode of study (distance vs. traditional) was the principal influence of the relationship between students and autonomy (more so than age, level etc.). Distance learners made greater use of metacognitive strategies than classroom learners, especially relating to self management. A further analysis was done using verbal reports (n=37) and the data was classified from the transcripts by the researcher and an independent rater. A total of 836 instances of strategies relating to autonomous work were identified. The average instance of strategy use from

distance learners was 26.6 whilst a traditional student was 10.2. Instances of using metacognitive strategies in classroom learners was on average four, whilst distance learners reported an average of 15. The results suggested distance learners used more metacognitive strategies than classroom learners (White, 1995). Critically, the numbers in the two groups were uneven and the development of the questions was not well described. However, the dual nature of the study, independent raters, transparency of inter-rater reliability and clear analysis suggested rigour. This study suggested that learners either approach DL with, or develop very quickly, metacognitive and self management skills.

White's (1995) results and Moore and Anderson's (2007) review suggested that metacognitive strategies were essential for DL. In a later study, White (1999) investigated metacognitive knowledge and experiences in distance education. Thirty one students were interviewed focusing on a model of metacognitive knowledge comprising self, task, strategy and goals. Content analysis was used to identify categories of metacognitive experiences. There was an average of 19.7 instances of metacognitive knowledge per student and in descending order, the four dimensions of metacognition were: self knowledge, strategy knowledge, task knowledge and knowledge of goals. Each student was able to recount at least one instance of a metacognitive experience. Conclusions included: students appeared to have experienced some, often extremely memorable, metacognitive experiences and metacognitive knowledge of distance students appeared to be primarily about self and strategy and less about tasks and goals. However, these dimensions were highly interactive and not distinct. The quantification of a complex concept such as metacognition, and the suggestion that students can identify a 'metacognitive experience' suggested a positivist approach to a subject containing multiple realties. However, the author attempted rigour in that the methods were clearly explained, two raters were used, and transcripts were revisited for further analysis with discussion to resolve differences. Overall, the metacognitive aspect of autonomy seemed to be occurring and seemed to be important in these student's DL experiences (White, 1999). Knowledge about oneself and strategies were more important for successful learning than knowledge about tasks and goals. This perhaps, suggested that self-monitoring is one of the keys to autonomy in DL.

Chen and Willits (1999) investigated how DL students conceptualised the three elements in TDT: structure, dialogue and autonomy. Using a pre-tested and piloted questionnaire, they surveyed 169 distance education students (72% response rate). Learner autonomy was measured by students indicating which of eleven statements described themselves (i.e. able to learn without lots of guidance, able to develop a personal plan, able to find resources, self-directed, prefer learning in a group, need collaborative learning). The results were analysed using factor analysis and suggested a two-factor solution: independence and interdependence. Independence accounted for 29% of the total variance with a Cronbach's Alpha of 0.82. Interdependence (interpersonal, interactive aspects) accounted for 26% of total variance with a Cronbach's Alpha of 0.77. The results suggested that the concepts of dialogue, structure and autonomy were complex and that students tended to describe themselves as both independent and interdependent. This weak correlation also suggested these features of autonomy were essential, but separate and distinct attributes. Although the attempt to quantify with statistical analysis something as complex as autonomy was fundamentally flawed, this study provided me with one particularly interesting idea: an individual's autonomy as a distance learner should be understood as including their abilities to work with others, or be interdependent. Historically, I had conceptualised autonomous learners as Thanasoulas (2000) above. Although, I believed that learning was a social process, this interdependency of learners was not how I had previously constructed autonomy. As I continued this review, my understanding of autonomy became far more inclusive. It became obvious that autonomy was multi-faceted and interdependence appeared to be essential. The results from Chen and Willits (1999) suggested that there may be an attempt to move beyond the focus of independence in this environment and move towards 'interdependence'. Garland's (1994) earlier findings support this with his discussion of 'personal control'. He suggested successful adult learners demonstrated appropriate dependency needs when participating in DL including: help, approval and support, leadership of others and sharing efforts and responsibility.

2.6.2. Summary of research on autonomy

Autonomy or self-directedness has been a core feature of adult learning for years and closely relates to TDT. DL, when considered as a social process relates to this complex

construct. Autonomy has been described as both self-management of pedagogy and metacognition. Furthermore, to 'traditional' autonomy, has been added 'interdependence' in group activities in DL.

- Moore and Kearsley (1997) suggested autonomy, or perceived autonomy, a third factor in TDT, influenced and interacted with dialogue and structure in transactional distance.
- Self-directed learning/autonomy/independent learning were all used with a considerable degree of equivalence in the literature and became popularized in the 1970's.
- Literature appeared to focus on measuring autonomy and relationships of factors within TDT, attempting to quantify and compare a complex subject using statistical analysis and were often lacking a theoretical framework.
- There appeared to be varying perspectives concerning autonomy and independence vs. interdependence. I disagreed with Thanasoulas (2000) that autonomy was a departure from education as a social process. I supported Moore (1973), Garland (1994) and Chen and Willits (1999); I believed that in DL it was essential to consider independence and interdependence in relationship to autonomy. An individual's ability to work online in groups was essential.
- Individual autonomy has been classified as self management of pedagogy and metacognition. Both of these appeared to be important and occurring in DL. Studies exploring these involved constructs have attempted to quantify these complex subjects.
- Studies that have compared the different dimensions of autonomy suggested knowledge about oneself and self strategies were more important than knowledge about tasks and goals, yet students must manage both 'academic' learning and the process of learning.

Section II
Literature Review

2.7. Staff Perspective: Organisational Culture

'To realise the promise of distance education, we must understand faculty……and the culture in which faculty work '(Moore and Anderson, 2007, p.386).

Introduction

As significant as the individual learner is to distance education, this type of education invariably involves institutional structures as well (Moore and Anderson, 2007). So far, my review has addressed DL from a predominantly student perspective. My aim (of improving practice) was grounded in my own values of what I hoped to realise in practice. In the development of this module, my practice was not solely that as a teacher relating to students. My practice was also a member of a small team and an academic within an organisation. I needed to justify and be reflexively critical (McNiff and Whitehead, 2009) concerning the areas I chose to investigate in this literature review. Improving my practice included improving as an individual quite removed from the student experience. To understand this, and develop conceptual frameworks (McNiff and Whitehead, 2009) I needed to investigate the context, as DL has transformed the teaching experience in HE representing a formidable management challenge for universities (Casanovas, 2010). The focus of this section was the HE organisation and the members of that organisation. Although the point of this research was not to address the organisational effectiveness of accommodating technological initiatives, for context, and breadth, it needed to be addressed, along with organisational culture, organisational change and staff perspectives (Figure 9).

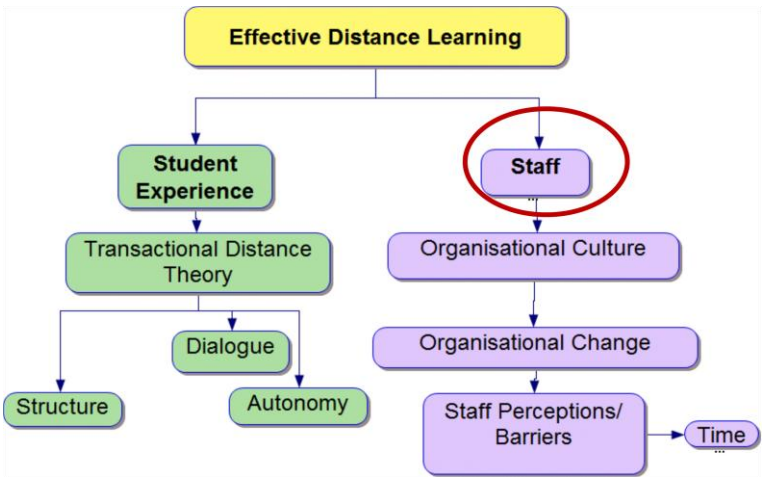


Figure 9: Overview of literature review: Staff perspective

Results

HE is a social system composed of structures of work, purposes, norms, values, beliefs and authority in which the handling of knowledge is the crucial activity (Clark, 1986). Within this organisation is the university. These are equally complex formal organisations that have characteristics including boundaries, social interactions, goals, structured activity and culture. There are semi-autonomous departments, schools, chairs and faculties. This leads to the potential of 'organisations within organisations' (Casanovas, 2010) and further contributes to the complexity of defining the social systems and 'organisational culture' that make up a university (Clark, 1986). Originally used to describe industrial and corporate environments, organisational culture is embedded in the working life of everyone who works in an organisation (Becher and Trowler, 2001; Silver, 2003). The manifestations of cultural organisations include:

Manifestations of cultural organisations (Martin, 2002):
Hierarchy
Job descriptions (and other written policies)
Informal practices (behavioural norms)
Organisational stories (how things are done around here)
Jargon, humour and rituals
Physical arrangements

Table 3: Manifestations of cultural organisations

Organisational culture emerged as an analysis tool for industrial organisations and identified either 'strong' cultures (based on shared values and beliefs) or 'weak ' cultures (central culture and leadership with strong subgroup identities) (Silver, 2003). The idea was the 'strengthening' of corporate culture enhanced organisational performance by encouraging more flexibility and a greater commitment from staff. Improvement (and in the corporate world productivity), flowed from cultures that systematically recognised and rewarded certain individuals. This reward could be symbolic or material and was directed towards members of the culture that identified their own sense of purpose with specific values that were designed into the organisation (Willmott, 1993). Therefore, this acculturism was geared to win over employees and to define their purpose of how they thought and felt, not just how they overtly behaved. Strengthening the culture within an organisation provided the key to securing extraordinary effort from relatively ordinary employees (Willmott, 1993). Since its conception, the entire field of organisational studies has been fraught with methodological and theoretical dissension (Martin, 2002). The application of organisational culture to academia was initially criticised as the explicit interpretations

of organisational behaviour did not adequately convey the relationship between academics and their professional life and has been described as the 'flavour of the decade' (Wilmott, 1993). However, it has continued to gain attention as the academic path has close ties to the symbolic dimensions of organisational life (Becher and Trowler, 2001; Silver, 2003). Academic organisations are in a continued state of tension due to consensual and conflicting behaviours, and the 'culture' may be one of the few terms to combine satisfactorily these shared ways of thinking and collective ways of behaving (Silver, 2003). Becher and Trowler (2001) discussed the cultural identity of different groups or 'tribes' and examined what 'knowledge territory' they inhabited. Their central thesis concerned the relationship of people and ideas. How academics organised their professional lives was related to intellectual tasks and this interconnection between academic culture and the nature of knowledge was key to understanding.

Running the risk of dealing with organisational culture superficially, I realise there are critics of this potential oversimplification in HE. Becher and Trowler (2001) and Silver (2003) (who all write specifically about organisational culture at the University level) suggested that there are systems of subcultures within Universities that would not enable them to be combined as a culture. The 'dominant' culture used to discuss Universities (Silver 2003) may bypass the issues of lack of coherence within the University culture. However, in this submission, I was not arguing whether there was an organisational culture or not. I believed there was. We had a collective way of thinking and behaving. Revisiting Martin's (2002) manifestations of cultural organisations (Table 3), there was a clear hierarchy, clear job descriptions, behavioural norms, stories and certain rituals with which we were all familiar. However, our process of creating this module was novel. The hierarchy changed, there were no clear roles or responsibilities, we had to develop new norms, we had no 'stories' from which to draw and we had to create new rituals. A simple, yet helpful model of the hierarchy involved in subsystems that affect DL was adapted (Moore and Anderson, 2007) (Figure 10) to explore my specific context. We had hierarchical subsystems with their own internal behaviour, but each subsystem was affected by the others, regardless of level.

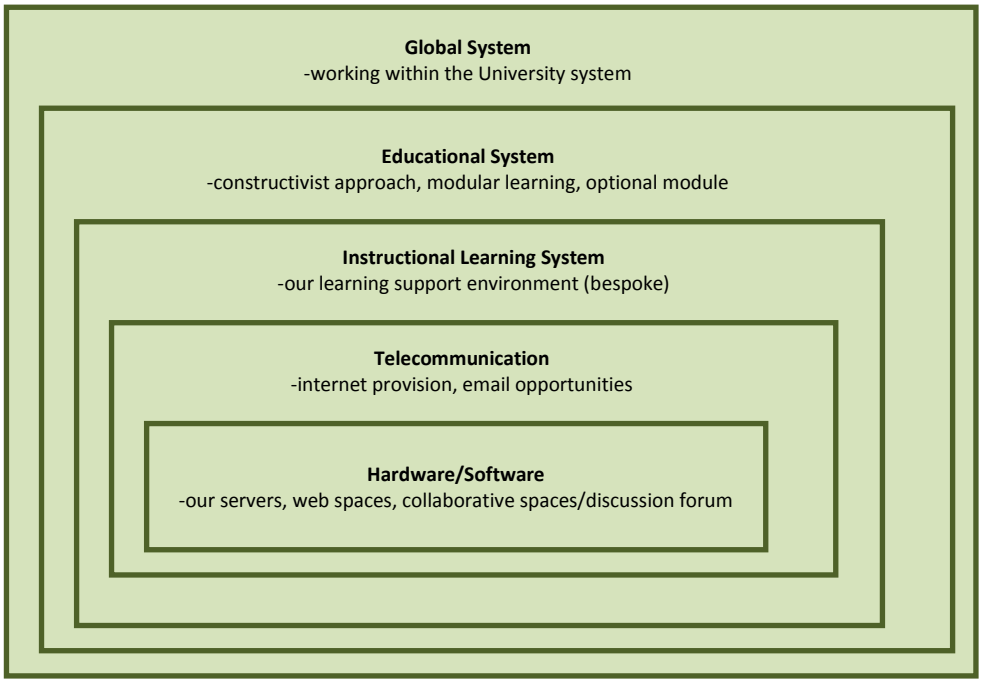


Figure 10: Hierarchy involved in subsystems when implementing DL in my context

Moore (2007) argued that educational institutions are dominated by traditional face to face instruction and the advent of DL is an opportunity, a threat and causes a serious disruption. Unequivocally, the old institutional identity and processes have changed. DL is an innovation. It is the adoption of an idea or behaviour that is new to the organisation (Casanovas, 2010) and as a result transforms practices and causes adjustment to members of communities.

2.7.2. Summary of research on organisational culture

Recently, there has been a rapidly changing pace of pedagogical innovation, secondary to technological development. However, academic routines have remained unchanged which has led to a gap with the organisational culture (Banks and Powell). Research on enabling institutionalisation processes of DL technologies was scarce (Casanovas, 2010), yet this was one of the most difficult and least transparent hurdles for me developing this module. I was prepared for technological issues, pedagogical issues, but ill prepared for institutional ones. Interestingly, in DL research, initially, the focus was on technological, practical and pedagogical aspects, but Casanovas (2010) suggests that we have failed to embed these innovations and change into educational institutions. This was certainly my experience. If we accept this change is happening, how do we embed the changes into the organisational culture?

- Universities have an organisational culture that is complex and has unclear boundaries.
- Manifestations of cultural organisations include: hierarchies, job descriptions, informal practices, rituals and stories.
- There are critics suggesting that the sub-systems and lack of coherence in Universities prevents them from having an organisational culture. I disagree.
- DL, although presenting unlimited opportunities, is a threat and a disruption to the organisational and institutional culture.
- DL is changing the identity and organisational culture of traditional universities, and this has not been embedded in new practices or addressed in the literature.
- Understanding the organisational context of a traditional University within the HE framework delivering DL is essential.

2.8. Staff Perspective: Organisational change

Introduction

Academic Tribes and Territories is an established and respected text on the theory of academic relations in higher education in the UK. The authors discussed academic self perceptions, the internal life of Universities as well as the academic culture and roles. These all contribute to an academic's 'territories', which are transforming because of new technologies (Becher and Trowler, 2001). Technology has also changed how knowledge is valued in society, therefore changing how we value different kinds of achievement, teaching and learning within learning organisations (Beetham and Sharpe, 2010). Technology has changed how we value teaching, the academic role and ultimately the organisation.

Results

In *Rethinking Pedagogy for the Digital Age,* Beetham and Sharpe, when discussing the implementation of e-learning technologies, argue *' the problem ... is more about the human and organisational aspects of teaching and learning than it is about the use of technology'* (Beetham and Sharpe, 2010, p. xvi, p.xvi). They suggest that academics require support and it is essential to look at both the social and cultural contexts in DL

development, which are entirely framed by the institution. The institutional context is the stage for the drivers of change, the vehicles of change and the discourse of the change (Schmidt, 2011). Change is unequivocally happening in higher education. Few traditional institutions have recognised that successful DL takes place in a complex and novel system composed of many interrelated parts, where failure of one part of that system can cause the whole initiative to fail (Alexander, 2001). For traditional universities, DL requires a fundamental change in the structure of the institution (Pollock and Cornford, 2002; O'Neill *et al.*, 2004). In developing my module, there was change. The drivers of change varied, the vehicles and discourse of change were what we did, what we thought and how we talked about the change process. The university was the setting within which all or our ideas had meaning, our discourses had communicative force and our collective actions made a difference (Schmidt, 2011). We had to learn new practices and adapt. As part of the University, we were part of an organisation and since we had never done something like this, change was constant.

Tierney (1988), writing specifically about change in HE explained that institutions are influenced by external (demographic, economic, political) factors and yet they are also shaped by strong forces within. This internal dynamic is intimately involved with the organisation's workings and is rooted in history, values, processes and goals. Organisational or institutional culture In HE is demonstrated by who does what, how it is done and what is done. This includes actions, communications and decisions on both an instrumental and symbolic level (Tierney, 1988). The majority of research on change in HE has focused on the removal of the two-tiered system and internationalisation (Robertson *et al.*, 2009). The majority of DL research has focused on student experience and implementation strategies , with a less detailed understanding how DL impacts the roles and identities of staff (Conole, 2004; Hanson, 2009). Ellaway (2011) looked critically at the disruptive change e-learning in medical education causes institutions. She suggested one of the main areas that needed investigation was organisational contexts and the need to align the e-learning process to the institutional and program environment. Therefore, of all of the areas covered in this literature search, this was, perhaps the least explored in the literature: How does the implementation of DL affect the university? How does this change happen?

Technology is causing rapid change to institutions; the challenge for universities is not about how to use technology, but how to manage these changes, and if they should be managed (Dublin, 2003). In educational environments, if change can be understood, strategies can be developed to manage this change and the change process itself will be successful (Nunes and McPherson, 2002). The ability to handle and sustain change and innovation is central to improving teaching. This is particularly applicable to DL because these technologies are rapidly changing. The difficulty comes in how to rapidly evolve, as an institution, whilst executing the changes (Marshall, 2010). Unequivocally, with the implementation of DL in HE, given the traditional paradigms that exist, significant modifications of existing models are necessary (Conole, 2002; Nunes and McPherson, 2002).

2.9. Types of organisational change

Results

I agree with Fox and Herrmann (2000) that no template or simple checklist can be used to predict and resolve the complex processes involved in implementing DL into HE. Not only is the process complex, but Laurillard (2002) in *Rethinking University Teaching* suggested HE, which does not change easily, was being forced to change because of DL.

Organisations are complex systems that balance business, technology, culture and management processes (Dublin, 2003). Dublin warned e-learning is changing the process of learning in an organisation; therefore, the business processes, culture and management systems will be changed. He suggested we have two options; ignoring the changes and letting them happen or managing them.

2.9.2. Models of change

Different models were found that explained or suggested plans for understanding organisational change (Tierney, 1988; Ford *et al.*, 1996; Aldrich, 1999; Engelbrecht, 2003; Tatnall and Davey, 2003; De Freitas and Oliver, 2005; Marshall, 2010) including those specifically dealing with technology in universities (Alexander, 2001; Engelbrecht, 2003; Marshall, 2010). The Fordist model seemed an obvious choice as efficiency and technology were so intertwined. Reading about change as an engineering process to be scoped and implemented appealed to me. The Fordist

model was based on ideas concerning the division of labour and industrialised working practices. This model seemed rational, corrective and clear. However, as I read on, I realised this is what I wanted to happen, not what did. Ford *et al*. (1996) suggested setting the direction, establishing a vision, making practice explicit and keeping the process of change under control. This was clearly not the model we subscribed to in the changes that occurred in the UTCE module.

A second, the ecological model of change, was found and has been directly adapted to explain development and technology. Tatnell and Davey (2003) and Nardi and O'Day (1999) suggested this model highlighted the complex social situations and relationships involved in using technologies. Information ecology included people, technologies and practice. This model relied on the relationships within the organisation rather that the idea that an organisation is separate from its social or intellectual capital (Tatnall and Davey, 2003). The ecological model considered change according to:

- **Energy expenditure**: DL expenditure (cost, time, effort) must be balanced with satisfaction obtained.
- **Competition**: Resistance to innovative technological development may be due to competition between staff.
- **Cooperation**: 'Early adaptors' of DL may feel at ease or cooperate with the developmental change process.
- **Filling a niche**: DL may fulfil a niche in the organisational plan.

The energy expenditure and 'filling a niche' fit directly with my experience. However, as in the evolutionary model below, staff competition played little part in our change process.

In the evolutionary model, Aldrich (1999) suggested four evolutionary processes in change:

- **Variation**-any departure from tradition, occurring intentionally or blindly.
- **Selection**-related to internal organisational structuring to institutionalised norms.
- **Retention**-occurred when selected variations were preserved (so activities could be repeated on future occasions).

- **Struggle**-arose when individuals in organisations pursued individual incentives as well as organisational goals.

Once again, the model investigated did not fit my situation. Variation and selection occurred. We were breaking from traditional roles and responsibilities whilst still trying to fit into organisational norms. However, there was little of this change process I would choose to retain and there appeared to be very little struggle for individual goals. We all seemed to be working together to achieve the institutional goal.

The final and most fitting model I reviewed was Fullan's (1999) discourse-oriented view of change. In the models discussed above, rational planning was a major driver. In this model, the process of change was complex and chaotic (Fullan, 1999). Schwahn and Spady (1998), when discussing educational change and leadership support Fullan's model explaining that change is a continuous process, highly chaotic in nature, but necessary for organisational renewal and even survival. Moore and Anderson (2007), addressing change in DL, suggested that linear or staged systems were too simplistic to take into account the normative influences (related to values) and pluralist nature of policy influences. The conversations people have and their day to day interactions are dynamic and instrumental in the change process (Fullan, 1999). The change in the UTCE module was not totally uncontrolled; however the discourse and negotiation between individuals concerning practice was key (De Freitas and Oliver, 2005). In this discourse oriented change model, these discourses become taken-for-granted and new discourses are safe and encouraged. Once these discourses become 'naturalised' they become good, acceptable or legitimate forms of practice or knowledge (Farrell, 2001). This model was not useful for planning change. However, I was interested in analysing, understanding and improving the change that occurred. I saw my role as educative, not coercive and in this model, my role as facilitator of discourse became quite clear. The change that occurred was complex and unpredictable, unlike other models where change was a discreet series of movements. There was no clear division of labour, as one would expect in the Fordist model and all we had, all we learnt was from each other on the team. In the discourse oriented perspective, collaboration is all there is to support the process of change (De Freitas and Oliver, 2005).

2.9.3. Summary of research on organisational change

Historically, culture and structure were viewed as impediments to change, rather than the content that should be changed (Schwahn and Spady, 1998). However disruptive DL might be, there is little doubt that it has the potential to radically transform educational practice (Moore and Anderson, 2007). As a practitioner performing an inquiry and a practitioner delivering DL, I was part of, and contributing to, that transformation. Schwahn and Spady (1998) proposed that until recently, structural and cultural change has been viewed by many lecturers as largely beyond their control and was a destination. Although historically I agreed, this review has exposed to me that as an academic, I have an obligation to change and inform change.

- Change is happening in HE and one of the major drivers for this change is technology requiring a fundamental shift in organisational structure.
- Sparse research explores how DL impacts on the roles and identities of staff- academic and otherwise. This is an area that requires investigation.
- Various models are available to manage change in DL. I was interested in understanding the change, not managing or planning it.
- Several models were found concerning change; of these, the discourse oriented model seemed to best explain what we experienced.
- The discourse view of change suggests change is chaotic and continuous and conversations and day to day interactions between members of the change process are instrumental in the change itself.
- Academics should contribute to and transform practice, not just accept the institutional changes because of DL.

2.10. Staff Perspective: Barriers to distance learning

> *'The current structure and organisation of most universities…is largely historical and…largely unsuited to new forms of technological delivery'* (Bates, 2000, p.36).

Introduction

The previous section focused on staff experiences beginning broadly with the organisation and related change. Here, the review narrows to a practitioner level within an organisation addressing faculty perceptions of DL, specifically barriers and obstacles.

Results

Four major literature reviews were found addressing staff perceptions in DL:

- Maguire (2005) reviewed research from 1995-2005 focused on faculty attitudes, motivators and inhibitors to online learning. In this rigorous review, search definitions, criteria, methods and limitations were outlined.
- Lahaie (2007) performed a review of literature on faculty's experiences with DL. There was no explanation surrounding the method of review and inclusion and exclusion criteria were not clearly described.
- Major (2010) performed a qualitative synthesis of literature in stages exploring faculty member's experience with DL. The inclusion criteria were clear and the methods of analysis were transparent. This meta-synthesis was systematic, explicit and rigorous.
- Berge *et al*. (2002) performed a literature review leading to the development of a survey based on the results. This review investigated multi-stakeholders online education delivery. They performed a statistical analysis by population highlighting academic barriers. All teachers had previously taught online, the authors did not define 'online' and clear inclusion and exclusion criteria were not described.

All of these reviews approached the collection and synthesis of data slightly differently, however, the aggregate findings were similar in that the major obstacles for faculty implementing DL were lack of time (Berge *et al.*, 2002; Maguire, 2005; Lahaie, 2007; Major, 2010), increased workload (Maguire, 2005; Lahaie, 2007; Major, 2010), lack of compensation (Berge *et al.*, 2002) and lack of IT and faculty support (Maguire, 2005).

Two major UK surveys were found that addressed DL and staff perspectives in the UK (Haywood *et al.*, 2000; Bennett, 2001). Although not terribly recent, these were included as they were both undertaken in the UK and done on a large scale. The majority of the research into faculty perceptions of DL has been done in the USA (Newton, 2003), and this UK perspective was invaluable. Haywood *et al*. (2000) collected data over five months consisting of questionnaires, interviews and documentary analysis exploring learning technologies in HE in Scotland. Their methods and population were explained. Eight thousand questionnaires were sent out to

individuals involved in DL (60% response rate). When data specifically related to staff attitudes were analysed, the following themes were identified: lack of time, low status compared to research and lack of reliable infrastructure. Bennet (2001), in a similar population and another large scale study, analysed a pre-tested questionnaire completed by 231 UK lecturers (57% response rate) involved in adopting teaching technologies. A list of barriers was identified including: lack of IT support, not enough time, lack of knowledge and training and a University culture not conducive to new approaches. Arguably, lack of time and low status compared to research are barriers not specific to DL and staff may identify them within a traditional teaching context. However, from my experience, lack of knowledge, lack of training and lack of institutional support were definite barriers.

Much of the literature used closed rating scales and fixed questionnaires to collect data. Two slightly eclectic studies were found using DL technology itself to collect the data on staff perceptions (Newton, 2003; Yick *et al.*, 2005). Newton (2003) explored staff attitudes in DL using questionnaires, surveys and email correspondence. 134 questionnaires, 16 structured interviews and 11 email correspondence were analysed. Using quantitative analysis, the first four barriers (in descending order) were: increased time commitment, lack of incentives or rewards, lack of strategic planning and vision and lack of organisational support. The interviews were only described as 'structured' which may not allow full exploration of individual perspective (Robson, 2002). However, Newton's (2003) findings appeared consistent with other research and used a questionnaire (piloted and pre-tested), interview and email correspondence to gather data. Yick *et al*. (2005) explored faculty experiences using both a survey and online discussion forum. Twenty eight faculty members participated in an asynchronous discussion that resembled a focus group. Again, it was not made clear how the groups were chosen and the facilitator's role was not transparent, however the findings were consistent in that concerns of time, lack of protected time and workload were identified as problematic to faculty.

The findings in the general literature concerning individual academics perceptions appeared relatively consistent. To demonstrate a depth of reading and review I decided to look more closely at my student target group (health care providers).

Fehn (2005), Ryan *et al*. (2004) and Curtis (2001) all used interviews to explore the experiences of nursing staff teaching in post graduate DL. Fehn (2005) interviewed 13 faculty using an exploratory case study approach to identify impediments in implementing an associate degree in nursing. The interview guide was developed by the researcher as part of her PhD and data was analysed by coding and thematic analysis. Validity was addressed directly, as follow up interviews were done for clarification and the data was analysed twice by independent sources. Findings included concerns around increased faculty time for both development and implementation, course ownership, lack of faculty training and lack of technological support (Fehn, 2005). Ryan *et al*. (2004) performed focus group interviews with 19 nursing faculty involved in postgraduate teaching across Canada and the US, investigating their experience of teaching in online small groups. Similar to Fehn (2005) above, major categories identified from dimensional analysis were: managing time (due to increased workload), faculty role issues, designing courses, dealing with technology, handling communications (between other staff) and developing partnerships (Ryan *et al.*, 2004). Although there was single analysis of the data and scarce information regarding the interview guide, Ryan (2005) later performed a validating study confirming the major categories and dimensions of the matrix (Ryan (2005) in (Mancuso, 2009)). Curtis (2001) performed 16 telephone interviews on health care teaching faculty from 10 universities in the United States looking specifically for incentives and obstacles to online teaching. The interview questions were piloted and as in Fehn (2005) thematic analysis was used. As noted in Fehn (2005) and Ryan (2004), barriers to online teaching included: increased time commitment, no release of time, no compensation for time and lack of technological or institutional support (Curtis, 2001). The interview guide was not described nor was the process of development clear to the reader. Validity of the research was addressed in that researcher biases and assumptions were discussed and transparent. There was participant or member checking and the data underwent double analysis by a peer.

Time and workload patterns appeared to be the major obstacle for academics implementing DL. Student's expectations and how interaction online has increased workload was discussed earlier. However, there has also been a shift in workload patterns and roles that is unique in DL environments. In a study exploring changing

roles in universities, academics identified the main differences between roles and competencies in traditional and online environments. Reponses indicated two major demands for academics that are not obstacles in face to face teaching: the constant, on-going demands on the online academic and the ability to energize discourse without the benefit of heard expression, tone or body language (Briggs, 2005). These changes and expectations of flexibility are further confounding in DL as the workload associated with 'flexible' learning is currently unrecognised by management and many academic believe unsustainable (Schofield *et al.*, 2003). Not only is the pattern and type of work different, but recognition of this work and time involved are barriers. Furthermore, due to the nature of online interactions and perhaps student expectations concerning contact, this has resulted in an inordinate increase in workload (Hovenga and Bricknell, 2006) and the concern that tutors could be placed on a '24/7 treadmill' (Briggs, 2005).

My experiences mirrored the literature. As in the previous section when dialogue and interaction were a major issue and further explored, I felt this should be scrutinised in more detail. On a personal level, I was totally ill prepared for the time this module took me to write and deliver. I had no idea, no experience and felt I had very little voice. To be totally transparent, the next section was driven by the literature flagging up time and workload issues, coupled by the major incentive of exploring my own experience and obstacles.

2.11. Staff Perspective: Time

Time is the new distance (Mason and Weller, 2000)

Introduction

This portion of the literature review looks at time and work patterns of academics involved in DL.

Results

There was unequivocal support of distance teaching taking more time than traditional teaching ((NEA), 2000; Brogden and Couros, 2002; Howell *et al.*, 2003; Garrett and MacLean, 2004; Pirani, 2004; Johnson *et al.*, 2005; Ryan *et al.*, 2005; Laurillard, 2007; Mancuso, 2009); however, much of this appeared to be based on anecdotal data. Often staff were asked about their impressions of time spent, not actual records.

Interestingly, there was some literature suggesting DL was a cost savings to academics (Chumley-Jones *et al.*, 2002; Twigg, 2003; Harley *et al.*, 2004). Twigg (2003) evaluated ten projects that had recently begun to use DL in a Polytechnic in America. In two rounds of market research, all projects were deemed successful and overall time was reduced by offering DL. This, she concluded, enabled academics to increase their productivity as there was a reduction in their time. However, in her results, the reduction actually occurred in administrative tasks, like recording and storing grades. Academic delivery time was not addressed. Harley *et al*. (2004) compared time used by academics in a traditional lecture of undergraduates in California to providing material online via the internet. He found that it led to a cost saving to the University two years after it took place. However, he was involved in a large lecture course in which the students had access to the lecture the next year as well as the material and he was not responsible for teaching (Harley *et al.*, 2004). In a review of evaluation literature in web based learning, Chumley-Jones *et al*. (2002) looked at 206 articles directly related to medical education. Only one article in their search (1966-2002) suggested web based learning was a cost saving initiative. However, the cost saving was found in the decrease in printing and distribution costs of materials. There was no discussion of faculty time.

Although the cost of implementing DL has been studied extensively in HE (Laurillard, 2007) costing studies appeared to focus on the cost of face to face vs. e-learning (Garrett and MacLean, 2004), the cost of specific technologies, or an inter or intra-institutional comparison (Bates, 2005; Laurillard, 2007). Planning and documenting costs of traditional teaching is challenging enough, yet the literature around what e-learning actually costs to the academic is surprisingly sparse (Rumble, 1986; Laurillard, 2007).

I was not concerned with the financial cost of developing DL. To me, that was not significant. As a junior member of staff who had no access, nor particular awareness of business plans, my interest was far more personal and perhaps, pragmatic. I was interested in time, my time. It would be a simple calculation to multiply my hours by the costed time per hour for my salary. However, that financial number would mean less to me than how long DL actually took me to develop and deliver. I was also

interested in when I was working. As a practitioner, what I needed to know was how long this took and when I was working.

Laurillard (2007) developed a cost- modelling tool to help plan for e-learning and control costs. Drawing on literature and personal experience, she analysed different methods of costing e-learning in an attempt to identify relationships between learning benefits and costs. Although the overall aim of the study was not of primary interest to this review, she suggested that technology was not necessarily a major cost in e-learning, but '*the more significant cost driver… is that teachers….spend their time differently' (Laurillard, 2007, p.29)* . Rumble (2001) in an inaugural lecture explained that online tutoring adds to traditional faculty workload and highlighted the need of dealing and coping with an academic's increased work load. As with Laurillard (2007) he suggested that costing e-learning was fraught with problems and comparisons were difficult. He warned that academics, when pressured to create e-learning resources may feel a 'hint of exploitation' and cautioned that academics working on the course development side were particularly vulnerable to the erosion of contractual benefits. Of academics, he suggested that teaching online would almost certainly add to work hours unless student loads were reduced. Brogden (2002) and Howell *et al*. (2003) agreed and suggested that one of the greatest reasons for faculty resistance in distance education was the labour-intensive and time consuming demands required to develop online resources.

The National Education Association (NEA) performed a survey to 402 faculty members involved in distance education in 2000. Not surprisingly, their top concern was they would have to do more work and spend more time teaching in this environment for the same amount of pay (NEA, 2000). Following up, they found that most faculty do spend more time on their distance courses than face to face ones and only 16% received a reduced workload. Although these results appeared to support the literature, they should be interpreted cautiously. The data was all collected from 402 phone interviews of members of the NEA. They were asked to estimate whether they had spent more time, less time or the same amount of time preparing and delivering their DL. Regardless, DL has been shown to cost more and take more time than traditional methods of instruction in HE (Rumble, 1986; Bower, 2001; Garrett and

MacLean, 2004; O'Neill *et al.*, 2004; Pirani, 2004; Bates, 2005; Laurillard, 2007). However, 'more time' or 'less time' did not help from a pragmatic or practitioner perspective. Again, it did not answer the question 'How long does it take?'

Some authors have suggested quantitative measures for time involved in DL. Jewett (2000) wrote that tutors could spend twice as much time tutoring students in an online environment than face to face. Laurillard (2000) (in (Holley and Oliver, 2000)) created a course appraisal model. She suggested that converting 40% of a course's material to an online format would increase staff time by 50% during the course and 120% on production time. She also suggested that managers underestimate the full cost of IT to lecturers. Carlock *et al*. (2001) highlighted faculty workload conflicts as one of the major obstacles to implementing technology in higher education. They suggested there was a fourfold (16hr per student for online teaching vs. 4 for in-class) increase in academic time involved in e-teaching. In a critical look at general educational programs using the internet, Brown (1998) found distance education courses created 40-50% more work than traditional teaching. Looking at nursing faculty, Ryan *et al*. (2005) developed a highly involved matrix to develop a model for faculty to monitor workload. They suggested that more than 300 hours were required to convert a traditional course to an online format. Unfortunately, the number of students was not made clear. In a second study looking at nursing faculty, an extra 8-11 hour time commitment/week from academics running online learning was suggested (Johnson *et al.*, 2005). Again, the context of the learners was poorly described.

The point of my inquiry was not a comparative study, although literature comparing cost of distance to face to face learning (Garrett and MacLean, 2004) exists and as outlined above varies significantly from a fourfold increase (Carlock *et al.*, 2001) to a twofold increase (Jewett, 2000) in time compared to traditional teaching. Cook (2009) argues that comparing traditional learning (lecture) to e-learning (internet) does not make sense as effects will forever be elusive because of the heterogeneity of the interventions. Laurillard (2007) argues that there is no consistency in the parameters used comparing costs of new technology with traditional methods in an institution. Again, I had no desire to compare traditional and DL. Furthermore, Cook (2009) warns

that researchers should resist the tendency to seek global effects of e-learning in comparison to other methods; the focus should be on studies that will inform practice.

2.11.2. Summary of research on staff barriers and time

- Literature around this topic was abundant with the majority of it being published in North America and focusing on barriers and incentives to faculty implementing DL.
- Literature consistently cited time (lack of protected time and underestimates of time necessary), increased workload, lack of compensation and lack of training or IT support as disincentives for faculty.
- Literature focusing on HCP has produced similar findings to above.
- Time involved in DL was generally accepted to be greater for faculty than in traditional classrooms.
- Time was a more practical tool to measure workload for academics than actual 'cost'.

Various authors have produced quantifiable models for predicting time involved for faculty including:

- Laurillard (2000): Converting 40% of a course's material to an online format will increase staff time by 50% during the course and 120% on production time.
- Carlock *et al*. (2001): There is a fourfold (16hr per student for online teaching vs. 4 for in-class) increase in academic time involved in e-teaching.
- Johnson *et al*. (2005): Suggest an 8-11 hour time commitment/hour online learning.
- Brown (1998): Distance education courses created 40-50-% more work than face to face.
- Ryan *et al*. (2005): More than 300 hours were required to convert a traditional course to an online format.
- Jewett (2000): Tutors spend twice as much time tutoring students in an online environment than face to face.

2.12. Chapter Summary

To review, my objectives in this review were:

- To identify and review strategies which had been shown to be effective in DL within the field of postgraduate clinical education
- To review literature on the theoretical and pedagogical underpinnings of DL, specifically TDT
- To review literature on the interactive components of transactional distance theory: structure, interaction and autonomy
- To review literature on organisational culture and organisational change as it related to distance education
- To identify and review issues that facilitated and were a challenge to academic staff when designing and implementing DL
- To review in more detail 'time' as one of the barriers to academic staff.

This review was a complicated expedition for me. As I explored, instead of my objectives becoming unambiguous, they, and my overall focus became obscured. Upon completion of this review, several drafts and thousands of deleted words, I developed clarity. Writing the summaries at the end of each section and formally revisiting my objectives was essential. Much of my work flagged up questions, and the results of different sections led to new directions in others. I have included my conclusions, questions and personal thoughts below. Finally, with a goal to constantly evaluate and improve, I have incorporated a learning point and action list from the review.

2.13. Conclusions

Part of the difficulty of reviewing literature concerning DL was the difficulty of there being no single 'experience', but a combination of factors creating the system (Alexander, 2001). Overwhelmingly, people appear to learn from DL compared to no intervention. Understanding how they learn, or how best to implement DL was far less understood, despite being widely espoused by those involved in HE. Reading this literature contributed to an essential and fundamental knowledge base, yet did not directly address my aim: *How do I improve my practice?*

I saw two avenues to explore at that point: one theoretical and one practical. There were practical issues of time, money, my ability and technology surrounding the design of a successful initiative. However, there was something more fundamental. What did I believe? Upon what did I base my decisions? What were the theoretical underpinnings of successful DL? I realised, as explained by Moore and Anderson (2007) that I needed to develop practitioner-oriented principles inspired by theoretical models. Whilst reviewing literature on DL, they argued that progress in this field required a close and iterative relationship between theory building and practical application (Moore and Anderson, 2007). I had practical experience, but I needed a stronger theoretical basis. I found it in TDT. Although TDT has not been grounded in large scale empirical studies (Gorsky and Caspi, 2005), it explained what I believed was happening in DL. The link to Dewey's original work (constructivist) and the humanistic and behaviourist approaches appealed to me and demonstrated the complex processes of DL (Goel *et al.*, 2012). The literature surrounding DL and changes to organisational culture appeared to be a warning, or at the very least highlighted the problems and potential problems that may be encountered. Exploring this change allowed me to put my experience into perspective and plan for my next cycle within action research.

There was a clear need to explore the complex processes of individual staff navigating within a traditional university setting and expected to deliver DL. Increased time, lack of support and changing workload expectations were consistently highlighted in the literature as barriers and disincentives to DL. This correlated exactly to my fundamental experience.

2.13.1. Learning Points and Action

- Whilst reviewing interaction or dialogue, I read several papers addressing specific technologies: virtual lectures (Cramer *et al.*, 2007), e-portfolios (Bolliger and Shepherd, 2010) and screen casts (Pinder-Grover *et al.*, 2009) which finally clarified something (terribly obvious) to me. I was only interested in technologies that had a social dimension, some form of dialogue or communication. I believed the social context was essential to explore as it supported the complexities of learning, knowledge and

judgement. The action I took was to narrow my search to DL initiatives that included interaction or dialogue.

- Learners interact with their environment. I had never stopped and thought this so humbly. Was interaction essential for DL success? I believed so. Initially, I had limited my search, and beliefs to 'interaction' meaning dialogue between teacher and student or student and student. The 'action' of thinking about interaction in a much broader sense (the environment) and with wider parameters allowed me to explore interaction, and certainly TDT more rigorously.
- Initially, I naively considered traditional instructivist learning quite separate to constructivist learning. Although I did not believe learners in instructivist settings were totally passive recipients of knowledge, I believed there was a separate constructivist approach in which the learners were engaged actively in constructing knowledge. This became problematic and I began to wonder if through DL, these two traditions could be more easily integrated. My 'action' was reading and deconstructing the three components of TDT. My old classification began to dissolve, or perhaps my desire to classify learning theories so systematically altered. Regardless, this dissipation of theoretical constraints and the metacognitive development of new theoretical models was invaluable at a practical level. I began to develop practitioner-oriented principles inspired by theoretical models which, according to Moore and Anderson (2007) are one of the key factors in developing successful DL. These principles, whilst not exclusive to DL are imperative. In an extensive review on research of DL in HE, Phipps and Merisotis (1999) claim online teaching research reveals a lack of theoretical focus. They argue that theoretical frameworks are rarely referred to when relating DL to higher education. It was therefore essential for me, as a researcher and practitioner to develop principles inspired by theoretical models. If educationalists do not engage theoretically, the effect will have a 'devastating' impact on both research and practice in the domain of educational technology (De Castell *et al.*, 2002). Again, this was vital for me in developing my dual role. My practice was inspired by theoretical models

as I was aware that much of the 'theoretical discussions' that exist in DL neglect both traditional theoretical frameworks and curriculum discussions (Twomey, 2004).

Chapter 3. Methods and Design

This chapter begins with a theoretical section, describing my interpretation of action research and the relationship between action, knowledge and theory relating to this inquiry. The subsequent section deals with study design, data collection, analysis and limitations. A timeline of major research decisions can be found in **Error! Reference source not found.**. Rigour is addressed within this chapter and in more depth in Chapter five. The aims and related research questions are described in Table 5.

3.1. Introduction

3.1.1. Why action research and....what is action research?

Decisions regarding the study, topic and design occurred simultaneously. I decided that action research (AR) would be a practical, realistic option as I wanted to change and improve my DL practice. I read liberally and struggled with a clear definition and differentiation between action research, professional enquiry, professional inquiry, teacher as researcher and curriculum research. Stenhouse (1975) suggested that the combination of action and research is a form of disciplined inquiry in which I should personally attempt to understand, improve and reform my practice. I agreed. Ebutt (1985) stated that AR is a systematic study that combines action and reflection and my intention should be to improve my practice. I agreed with that, too. Cohen *et al*. (2009) proposed that my AR should include small scale interventions in which I would investigate the functioning of the real world with an examination of the effects of my interventions. I kept agreeing. I read, made copious notes and still could not decide what I was doing as I was determined to find the 'right' answer. I read Carl Lewin's work, one of the originators of action research. He suggested that only by doing an inquiry (myself) could I understand the social practice of curriculum development. He described a very specific systematic methodology and highlighted evidence and evaluation as a means to improve curriculum (Lewin, 1948). This appealed to me as it seemed rigorous, clear cut and the focus was on curriculum improvement. However, I found his discussion on the social practice of development and rational management slightly grandiose for what I was truly hoping or planning on doing. It felt artificial comparing my own study to his of disadvantaged society and the inequity of standards within groups. Lewin's writing did not help me on a practical level.

It appeared what I was doing fit into aspects of every definition and model. I decided to approach AR differently, from a deficit model. I thought if I could not define exactly what it was, perhaps I could define what it was not. Kemmis and McTaggart (1988) explained that AR wasn't the usual way of thinking about one's teaching; it was systematic, collaborative and reflective. It was not simply problem solving; it was problem posing. It was not done on other people; it was research done by me to help improve what I do.

Finally, I asked, 'Why am I searching for one definition?' I stopped reading and gave myself permission to think. Would choosing one author's definition add to my understanding? Was it necessary? One of the arguments supporting AR is that it is one of the research designs that is in the hands of the practitioners, not the theorists or academic community (Cohen *et al.*, 2009). By struggling to define it, I was moving away from practice and forcing unnecessary academic constraints on what I have done. Therefore, I did not limit myself to one definition. In this study, AR was simply me trying to improve my practice. Drawing heavily on work by McNiff and Whitehead (2002 and 2009), I systematically examined and evaluated my practice, implemented planned change, monitored and analysed this change.

3.2. Research Paradigms

3.2.1. Justification

The predominant research paradigm for several centuries has been that of logical positivism (Armitage, 2007). This paradigm suggests that there is an objective reality or truth and that knowledge surrounding that reality can be experienced and verified between independent observers. Phenomena are subject to natural laws that we discover in a logical manner through empirical testing, using inductive and deductive hypotheses derived from a body of scientific theory (O'Brien, 2001). This appeared to be the antithesis of what AR was to me. I had no hypotheses and I did not believe curricular design and implementation followed natural or logical laws. I did not feel the 'truth' was something I was trying to uncover as I did not find labels like 'truth' helpful. My beliefs or findings might be 'true', but only depending on how helpful they were to my inquiry and action. Overall, I did not subscribe to this paradigm.

An alternative choice was to look to social science in an attempt to challenge these positivist beliefs. This view concerned the naturalistic, constructivist or the interpretive paradigm (Armitage, 2007). Here, there was an emphasis on the socially constructed, subjective based reality that was influenced by culture and history (O'Brien, 2001). It was an attempt to understand meanings. Multiple-constructed realities were accepted with no time or context specific generalisations expected or possible (Johnson and Onwuegbuzie, 2004). The source of reality was the knower and the known could not be separated from this knower. This didn't quite seem what I believed either. I thought there was actually a 'reality' in the way I should improve my practice. There was also something rigorous and systematic in how I hoped to analyse the process. As I discuss in more depth later, understanding, action and improvement were my aims. I was not drawn to AR for the methodological or theoretical debates, but the nature of the process itself. I did not see the spheres of these distinct paradigms as dichotomous or opposing, but as a continuum upon which I moved back and forth with the goal of action and improvement guiding my decisions.

So, neither of these two distinct paradigms helped me view my own research inquiry. It was not about measurability, objectivity and predictability, nor was it about solely understanding and interpreting experiences. I believed that both forms of investigation would be necessary and valuable towards my research question and inquiry.

Dewey (1998) suggested that inquiry is an activity that deflated the dichotomy between theoretical and practical judgements. By choosing AR, I was eroding boundaries between theory and practice or knowledge-generation and action which often leads to difficulties reconciling AR as research by academic standards and presenting it to fulfil assessment requirements of academic qualifications (McMahon and Jefford, 2009). I had not considered the potential conflict with my personal inquiry and an academic pursuit. My dilemma was risking the integrity of my research by constraining it into safe, academic boundaries or failing to meet the set standards by following the action-research cycle wherever it led. Initially, I hesitated to label and define terms in academic language that did not contribute to action and improvement. Certainly, Bryman (2008) identified an increasing trend in social science research to decrease the 'ontological and epistemological baggage' that has encumbered research

methods (Bryman, 2008). Nevertheless, this contributed to an academic submission; therefore I must be pragmatic and enter the philosophical world. I realised, perhaps I was scared of committing to one paradigm, epistemological or ontological stance. After all, if I never labelled anything, I could not be wrong. However, Oliga (1988) argued that my avoidance of methodological exploration and exposure did not avoid methodological commitments; it only made me uncritical and unreflexive (Oliga, 1988). As a major part of my methodology and personal assumptions was my ability to be critical and reflexive, this was unacceptable.

3.2.2. What is the relationship between theory and practice?

My paradigmatic stance was one of Pragmatism although Pragmatists are not concerned with a particular theoretical position (Creswell and Plano Clark, 2011). I agreed with Creswell and Plano Clark (2011) who suggested Pragmatists believed research questions were of primary importance; more so than the method or the philosophical worldviews that underlay the method. Dewey (1938) suggested that in Pragmatism, there was a logic of controlled inquiry in which rational thought was interspersed with action. Inquiry must be a directed transformation of an indeterminate situation into a determinately unified one. This transformation required practical action that must inform theory and the two are interspersed (Dewey, 1938). Practical action must inform theory and theory must be adjusted according to practical outcomes of the action. This correlated exactly to my inquiry and stance: theory and practice were not separate dimensions. Theories and distinctions were necessary, but not separate to my practice. The relationship that became critical for me was that of knowledge and action. I believed theory was something I 'learned' from direct experience and ultimately returned to inform my experience. My theories about DL were due to my experience and these theories should ultimately inform my next experience.

3.2.3. My assumptions

Elliot (1991) suggested the most important element in AR was reflection and was the core of the research process. As I undertook this inquiry, it was difficult to judge the extent to which my assumptions and biases influenced me. The acknowledgement of biases and preconceptions does not allow them to be abandoned (Robson 2002), but I hoped the early and intentional reflection would help me maintain an awareness.

Kemmis (1985) suggested reflection in AR is a dialectic process '*It looks inward at our thoughts and thought process and outward at the situation in which we find ourselves*' (Kemmis, 1985, p.141). My ability to recognise my place in this inquiry (reflexivity) was essential (Patton, 2002). I have inevitably drawn on my own values, norms and concepts as I am a product of a social world. My social history affected this research and my assumptions have influenced the devising of research questions, gathering, analysing and presenting the data (Hammersley and Atkinson, 1995). I have included a list of my assumptions (Appendix C) in a further attempt to demonstrate reflexivity and make my processes explicit whilst addressing the issues of validity and reliability (Delamont, 2007).

I am a Canadian sports physiotherapist with a Master's Degree in Education presently lecturing in Clinical Education at an English University. After much reflection, even more writing and a multitude of different visual representations, I have distilled the information to demonstrate what has created and affected my world views (Figure 11). After revisiting this model, I have highlighted personal characteristics that may reflect my pragmatist leanings.

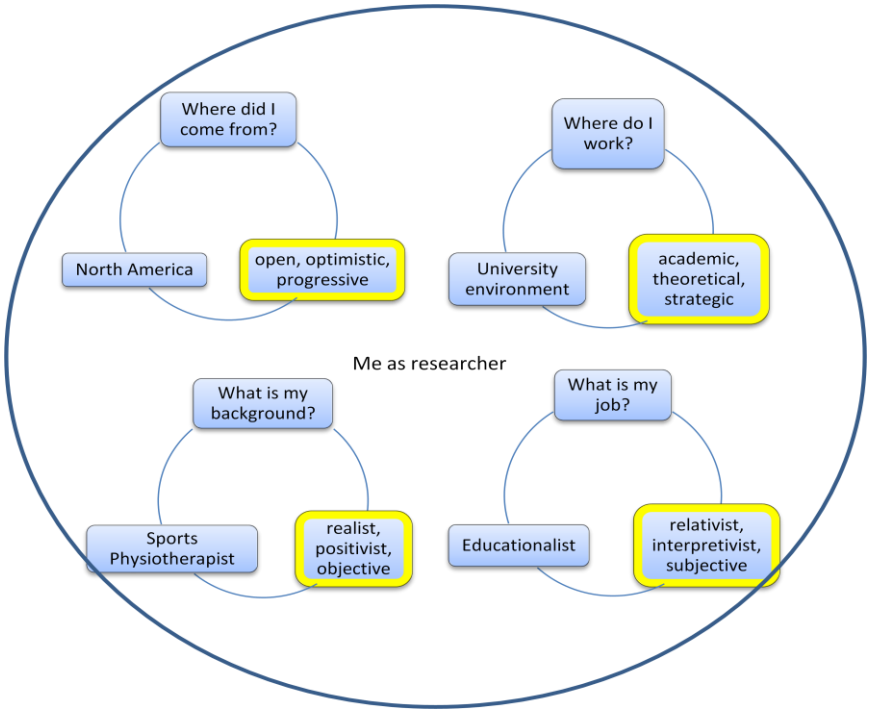


Figure 11: Diagrammatic representation of who I am

Ontological and epistemological assumptions are usually the primary steps in determining methodology choices for an inquiry. Ontology is a particular view of reality. There are two radically opposed views –either there is an objective reality or

that reality is really a mental construction of an individual's views. However, these views may represent two points on a continuum of ontological assumptions (Creswell and Plano Clark, 2011). I believe I am in such an intermediate position. My views are not realist, in the traditional sense of logical, external validity. Nonetheless, this inquiry was based in a real setting with real constraints influencing the entire project. Therefore, I acknowledge there was an external world that was fixed, and had to be dealt with. I also accepted that there may be alternative realities that were products of the individuals and social systems involved in this inquiry. How I viewed what happened might be very different than other individuals involved. That did not make it any less real or valid as I did not believe that meaningful knowledge could only be understood and constructed by individuals. I saw no difference in practical or theoretical reason, nor facts and knowledge. This distinction was not helpful. In this inquiry, the goal of knowledge was the solution of problems, or problematic situations. My focus and guiding principles were consistently improvement and action.

Epistemology relates to how our assumptions are known. It is the process behind the generation or exploration of reality or truth (or not-truth). This truth can either be subjectively or objectively knowable (Cohen *et al.*, 2009). In positivism, the focus of research is the production of knowledge and that knowledge tends to be abstract and generalisable. In constructivism, the focus of research tends to be participative, experiential and the knowledge produced is local with the researcher co-creating the situation (Oliga, 1988). In my inquiry, the focus of the knowledge was practical benefit and improvement. This relates to my earlier discussion of the separation of theory and practice. Which was more important in producing knowledge? I did not see these in opposition, so the question did not make sense to me. I believed that knowledge was eventual (as opposed to antecedent) and it arose from action. My goal was not to develop abstract theory or create local theory solely for change- my goal was to create solutions for practical problems. I hoped to share my findings in a public forum, but this was not the driving force behind this inquiry. I was not interested in discovering the truth or creating the truth. These labels or questions did not help me. I did, however, believe there was a 'better' way of e-curricular development and that was my driving force.

I was not a purist. I did not believe that I had to choose one of the traditional paradigms, or even that these different paradigms were incommensurable because they were based on different assumptions, values and methods. I believed a better way existed in the development of DL; this was both created and discovered by my own experience and Pragmatic inquiry into that experience (Dewey, 1998).

Therefore, my worldview was that improvement and action were my priorities. These were more important to me then the specific methods I used or philosophical assumptions. I did not adopt a single world view; I adopted a Pragmatic approach. Pragmatists hold a mixed view of reality, where the research question is of primary importance and guides the inquiry (Creswell and Plano Clark, 2011). My worldview altered as I carried out different aspects of the study as it was not fixed in one paradigm. What worked, what made most sense, what was most efficient, what I could action and how I could improve guided the inquiry. Therefore, I rejected the choice between the two traditional paradigms and minimised the adherence to traditional ideas of ontology and epistemology in my quest for a practical approach to methodology (Creswell and Plano Clark, 2011).

3.2.4. Summary

I have examined the relationships between theory and practice and knowledge and action. Deconstructing my beliefs and views around ontology, epistemology, quality and purpose was a difficult, intellectual journey. I agreed with Mertens (1988) who suggested this process is often messy and more akin to a ramble in the country, with excursions up blind alleys than a journey on a motorway from a to b with no diversions. However, it was essential I took this journey and demonstrated how this related to DL design and delivery. Stenhouse was adamant in his defence of what he called 'curriculum research'. He maintained that it was inadequate for teacher's work to be studied unless it was studied by the teachers themselves (Stenhouse, 1975). In order to fulfil my aims, I learned and improved by participating directly in the experience and the research process. Learning is a local, contextual, concrete phenomenon, not an abstract process. Therefore, the evaluation of this process had to be done locally and by me (Mihalca and Miclea, 2007).

3.3. Research Design

In this section, the design, data collection, analysis and limitations of this research are explained and justified. Limitations are addressed although discussed in more detail in Chapter five.

3.3.1. Action Research

The purpose of this inquiry was to systematically and critically evaluate the development and delivery of a DL module and was akin to a self-evaluation (McNiff and Whitehead, 2002). It was an opportunity to study and solve my own problems. It was collaborative amongst colleagues and students and I was searching for solutions to everyday, real problems. I explored ways of improving instruction, increasing staff and student satisfaction, improving planning, reducing costs and improving student achievement. I tried to generate theories about work from work. After reviewing several frameworks for action research (AR) (Kemmis and McTaggart, 1988; McNiff and Whitehead, 2002; McMahon and Jefford, 2009), my approach was not a linear process, based on preconceived ideas of practice as outlined naively in my original proposal In my experience, linearity is encouraged by traditional ways of thinking and writing about research which emphasise 'sanitised' versions and reconstructions made to fit the linear logic of planning and of the written text. My actual approach was based on authentic practice, and experience (Figure 12).

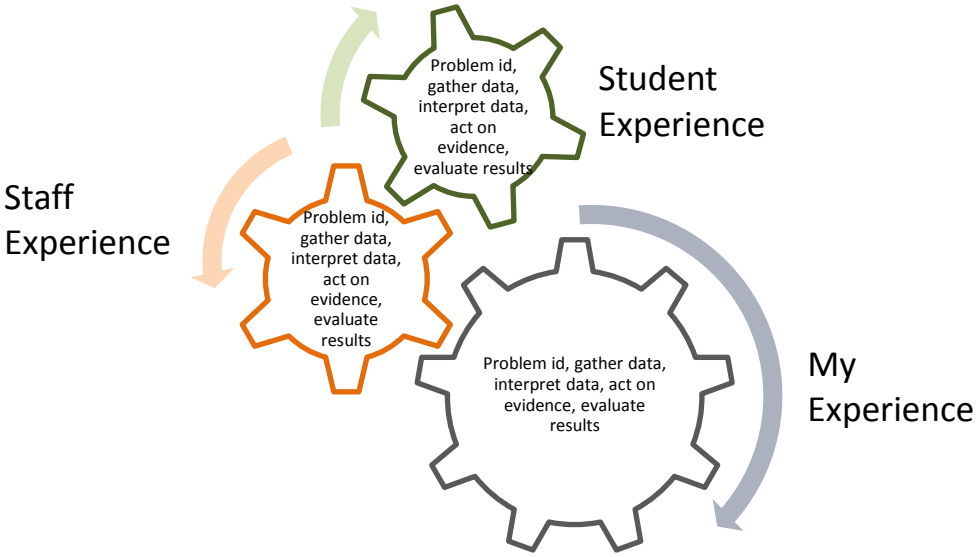


Figure 12: Actual approach to inquiry, based on practice.

3.4. Outline of Steps Undertaken

Identification of Problems

I had several data sources and my own experience from which problems were identified. Some problems were simple and technical, and some theoretical and complex. The questions outlined in (Table 5) helped clarify and issues and identify problems. The questions I chose had to be concise, meaningful, avoid jargon and something over which I have influence (Ferrance, 2000). These questions were dynamic (McNiff and Whitehead, 2002), related to overall aims and helped focus and guide my inquiry.

Gathering of Data

In my inquiry, data was collected using: questionnaires, interviews, documents, web analytics and work logs. Triangulation, structure and organisation were important for me. Table 5 outlines the main sources of data and corresponding objectives. For orientation, (Figure 13) maps data collection points against major landmarks in the module itself.

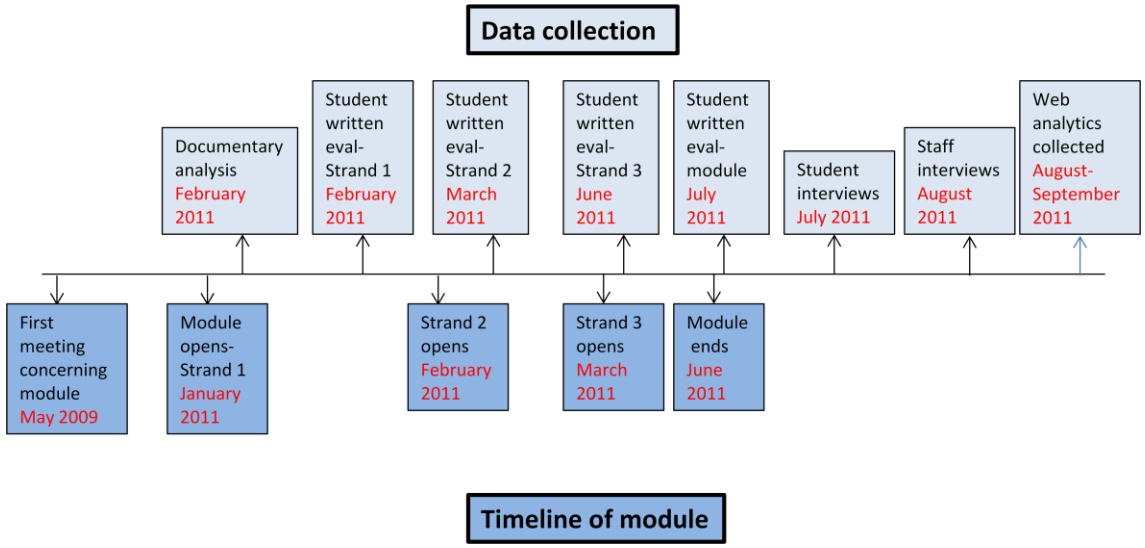


Figure 13: Timeline of data collection and module progress

Interpretation of Data

I identified major themes and used some statistical analysis. The analysis techniques were based on the most appropriate method for answering the research questions.

Acting on Evidence

After reviewing the results and the literature, I planned action, made changes, and then reviewed those changes. This occurred differently throughout the module as

some of the data collection and analysis was retrospective and some dynamic and iterative. As I progressed, I continued to document and collect data on the module. I was not researching other people, but myself (McNiff and Whitehead, 2002). I was evaluating myself, my practice and others as my practice impacted on them.

Evaluation

Part of my inquiry concerned my evaluation of the effects of intervention or changes and determining if improvement had occurred. When there was improvement, I have included evidence of that improvement. If not, I tried to re-assess the situation and identify what actions I could change to elicit better results.

3.5. Ethical Considerations

Ethics were integral to this inquiry. I have traditionally thought of ethics as a set of conditions that were listed and checked off. However, in an inquiry like this, to demonstrate quality, a different ethical approach must be evident. Action research can be ethically dangerous (McNiff and Whitehead, 2009) as the boundaries between inquiry and practice are difficult to define; yet demonstrating ethical coherence is essential for rigour. Groundwater-Smith (2007) suggested ethical procedures and policies should be one of the main guidelines when addressing quality in practitioner inquiry.

I initially applied for ethical approval by submitting a 'Preliminary Ethical Assessment' in January 2011 (Appendix D). Due to my desire to interview both staff and students, I required full ethical approval through the Faculty of Humanities and Social Sciences. The full ethical application, correspondence and final approval are included in Appendix E. On page 187, I highlighted some of the potential ethical concerns I had to the ethics board. I was aware of and vigilant towards the complexity of AR at the onset of this research. As I was working, I was researching my work. I was both a practitioner and a researcher. Because AR involves the research of real-world circumstances, the researcher must pay close attention to the ethical considerations in the conduct of their work (O'Brien, 2001). McNiff and Whitehead (2009) explain a key aspect of demonstrating critical engagement is to show awareness of ethical considerations and limitations. Although I address ethical concerns later in this chapter relating to individual data collection methods, for transparency and validity and it an attempt to

demonstrate truthfulness and critical reflexion, I have included specific ethical issues I experienced below (Table 4).

Ethical Concern	Date	Ethical consideration	Outcome
Action List I decided to ask staff members to keep a crude record of time spent on different activities. This was decided prior to beginning my research. However, I then decided to ask staff members to contribute to a collaborative document online. I created a wiki with headings of problems, actions and evidence. I thought this would be a great, dynamic way of collecting evidence that fit in well with action research. I was the only one who was completing the log. I could have gone and spoken to each staff member as module leader and insisted they complete this online document.	May 2011	Upon reflection, I realized this was unethical. I wanted the evidence solely for my own research, not the day to day development of the module. I could have used my power to 'make' them contribute. I decided using work time and my position to gain contributions was unethical.	I abandoned the collaborative document as I realized they were unethical.
Evaluations I decided to evaluate each strand of the module. The module was to be evaluated as a matter of policy at the end, but I added three extra evaluations during the implementation of the module. I was concerned I was putting an unfair onus on students to complete extra evaluations solely for my own research.	March 2011	I spoke to my DPD and voiced my concerns and asked if she thought this was unethical. Upon discussion, she flagged we used to evaluate each study day as well as the end of year module. She also argued that since this was our first online module, the heavy evaluation load was justified as it would inform our practice in general, not just my academic submission.	Evaluated each strand and module end.
Student tutee One of the students on the module was my personal tutee and I was his supervisor for his Master's submission. I was concerned that ethically, he may not feel he could turn down my interview request and may feel reluctant to criticise the module or my role.	July 2011	Upon reflection, I thought it was unethical to put him in this situation.	I did not ask him to participate in the interview process.

Table 4: Examples of ethical issues experienced in my teacher as researcher role

Within my inquiry, I have had a constant collaborative relationship with the other staff members, and indeed the students and I have addressed both the 'celebratory accounts' of my inquiry (O'Brien, 2001), and the difficulties and concerns of other stakeholders. I have identified some of the difficulties I have had with this module. It was not a smooth process; there were some real clashes and mistakes made. However,

by declaring and examining these issues, I believe I have attempted to demonstrate transparency and quality, essential qualities in ethically sound AR (McNiff and Whitehead, 2009).

3.6. Justification of Choices

My main questions concerned what I had learned, not questions that would simply add a description of what happened (McNiff and Whitehead, 2002). I have presented, chronologically, the questions I asked, objectives and data sources based on my research aim in Table 5.

Data source	Research Objectives and questions addressed
UTCE documentation: Minutes of meetings, action lists, reports , team meetings , curriculum meetings, notes, workshop materials	Objective: 1) To gain an understanding of the range problems encountered, overcome or not, whilst collaboratively developing and delivering UTCE. 2) To reflect on changes made, actions taken and to critically evaluate those actions, focusing on improvement
	Questions related to objectives as outlined immediately above
	What problems did we face? What were the barriers to our learning or experience? How did we overcome a these hurdles? What actions were taken? Were the actions taken successful? How do I know? What did we do about hurdles we could not overcome? What could be done to overcome these? What would we do the same next time? Differently? How could the process of development have been improved? What did I learn? What facilitated my (our) learning or experience?
Interviews-staff	Objective: To explore collaboratively and critically with staff, via interviews, the process of developing and delivering this e-module, focussing on barriers, facilitators action and improvement.
	Questions related to objective as outlined immediately above
	What problems were faced? What actions were taken? Were the changes successful? How do we know? What could not be overcome? Why not? What would we do the same next time? What would we do differently next time? What did we learn? What were barriers to our learning or experience? How could the process of developing an e-module be improved?
Post strand and module end questionnaires	Objective: To investigate student perceptions of UTCE focusing on barriers and facilitators to their experiences, changes evaluation of changes and suggestions for improvement in the future.
	Questions related to objective as outlined immediately above
	What were the positive aspects of each strand? What did students and I learn from those aspects? What were the obstacles or hurdles in each strand? What improvement or action was taken? Was the improvement helpful? What could be improved? What did the students learn? What should remain the same?

Data source	Research Objectives and questions addressed
Interviews-student	Objective: To explore, via interviews, the student experience of participating in a distance module, focussing on barriers/facilitators to their experience. The focus of these interviews will be on action and improvement.
	Questions related to objective as outlined immediately above
	What was helpful about each strand? What facilitated student's learning or experiences? What problems were faced? What actions were taken to overcome problems? Were the changes successful? What could not be overcome? What could be done to overcome these problems (what could we do/students do)? What were barriers to the learning or experience? What would the student do next time in a similar situation? What would he/she do again to improve? How could this module and student experience be improved?
Analytics	Objective: To analyse time commitments from staff in the development stages of UTCE in order to inform workload planning.
	Questions related to objective as outlined immediately above
	What was the pattern and volume of email communication during development? What kinds of issues were the main sources of emails prior to delivery (academic/technical/administrative)? How much time did staff spend working on each strand? How much development time was taken??
	Objective: To analyse time commitment and contributions from students to create a representation of online learning workload and patterns.
	Questions related to objective as outlined immediately above
	When did students contribute and what was the pattern of their contributions? Where did students enter and exit the module? How many hours did they spend in total on each strand? Did students engage with the material?
	Objective: To analyse time commitment and contributions from staff to create a representation of online teaching habits and patterns during the delivery phase of UTCE.
	Questions related to objective as outlined immediately above
	When did the academic contribute to the module? What was the pattern and volume of email communication during delivery? How many hours did staff spend contributing on each strand? How much staff time was taken to deliver this module?

Table 5: Data sources, objectives and research questions.

3.7. Data approaches

There were the four main approaches to data collection used which I have presented in chronological order of collection (documentary analysis, interviews, questionnaires, and web analytics), linked to specific aims and the related research questions (Table 5). Depending on the source, there were some variations; however, each approach follows roughly the same model (Figure 14).

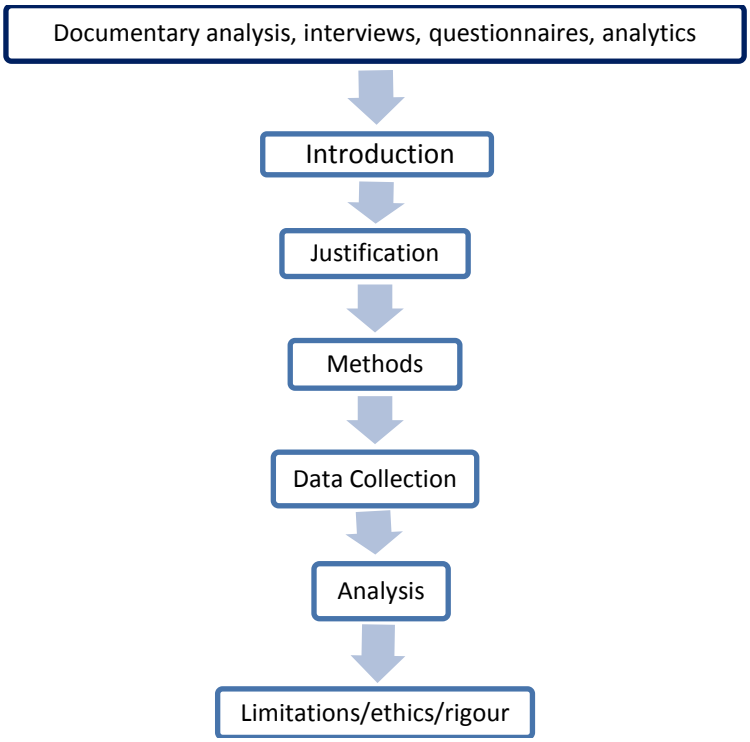


Figure 14: Overview of main approaches to data collection

3.8. Documentary Analysis

Objectives:
• To gain an understanding of the range problems encountered, overcome or not, whilst collaboratively developing and delivering UTCE. • To reflect on changes made, actions taken and to critically evaluate those actions, focusing on improvement

Introduction

These research objectives were concerned with achieving a deep understanding of organisational issues and processes behind UTCE from conception to fruition. I had attended every meeting concerning this module and for the majority of these meetings, notes were taken by a secretary or administrator. These notes were useful at the time as records and plans and in retrospect have provided a thorough history of how the 'team' worked. Although I had been present at these meetings as module leader with a job to do, analysing these documents retrospectively created a new role

and perspective as inquirer. This demanded an interpretation of the texts generated around the team processes. My professional role could therefore be married with my research role and it seemed logical to pursue this analysis further. I was interested in gaining an understanding of our experience as a team and mine as an academic within this process.

Justification

Documents are stable and accessible sources of data, provide rich descriptive information and can help ground a study in context (Ary *et al.*, 2010). Documentary analysis may be useful for '*rendering more visible the phenomena under study*' (Cohen *et al.*, 2009, p. 201) and may show how situations and processes have evolved over time. Documentary analysis is one of the most predominant data collection strategies in qualitative approaches to research (Ary *et al.*, 2010). The formal team documentation behind this module offered a wealth of information. These were all primary sources, insomuch as they are all written by an individual (mainly me or an administrator taking minutes at meetings) who had firsthand experience of the process. I made the assumption that both authenticity (subject to external criticism) and accuracy (subject to internal criticism) (Cohen *et al.*, 2009) could be established due to my intimate relationship with this data. Validity of the documents was strong as these were all first person documents (Cohen *et al.*, 2009).

3.8.2. Methods

Data Collection

This data had been collected as part of the UTCE development process. All meetings and notes were stored electronically on the University server. In March 2011, after ethical approval, I began to electronically search all departmental files beginning in 2008. In total, 35 documents (Table 6) were found concerning UTCE which were collated, organised chronologically and stored on the school server. I contacted all staff members involved, directing them to the folder, asked them to review the contents, noting any discrepancies.

Document analysed	Details	Date of document
Minutes	General School meeting concerning new 'e' module	May 28 and June 28, 2009
Notes, module outline drafts, draft aims and objectives.	Small group formal project proposal meetings	Dec 3 2009 and Feb 17 2010
Minutes	Curriculum Committee meeting	April 20 and Oct 19, 2010
Minutes	Small group meetings with those 'assigned' to help with module	May 12, May 14 and May 20, 2010
Minutes	General team meetings	June 29, July 20, Aug 31, Nov 2 and Nov 23 2010
Notes	Met with Head of School	July 8, 2010
Notes	Met with IT	July 17, 2010
Minutes	Module leader meetings	March 1, Sept 14 and Nov 21, 2010
Minutes, notes	UTCE team meetings	Oct 8, Nov 19, Nov 23, Nov 26, Nov 30, Dec 9, Dec 14, Dec 16, and Dec 20, 2010. Jan1, Jan 10, Jan 24, Jan 26, Feb 8 2011.
Notes	Met as UCTE team and with Head of School	Jan 23 and 24, 2011
Total number of documents analysed: 35		

Table 6: Documents analysed

Analysis

All electronic documentation was initially transferred into Microsoft Word. A method of coding these documents was used for analysis, similar to the method of qualitative content analysis described by Cohen *et al*. (2007) and used in coding the interviews in this inquiry (Graneheim and Lundman, 2004; Braun and Clarke, 2006). Graneheim and Lundman (2004) described **qualitative** or **thematic** content analysis as a method of analysing data that is used to interpret meaning from the content of text data. Thematic content analysis is a useful tool in the analysis of educational documents (Cohen *et al.*, 2009) as it may help identify factors stressed, ignored and the influence of both social and political factors. It goes beyond statistics towards the examination of language and classification of text (Graneheim and Lundman, 2004) and is an analysis method for the subjective interpretation of the content of text data through the systematic classification process of coding, categorising then identifying themes or patterns (Hseih and Shannon, 2005). As supported by Miles and Huberman (1994), in my coding, I was not searching for words, but *meanings.* My goal was to gain a deeper understanding of the development and implementation of UTCE by the identification of themes or patterns derived inductively and directly from the documents collected

(Hseih and Shannon, 2005). This process is comprised of two parts: a mechanical and interpretative component. The mechanical aspect is concerned with organising and dividing the data into codes and categories and the interpretative aspect determines what categories are meaningful in relation to the research questions (Hseih and Shannon, 2005; Braun and Clarke, 2006). The 6 phases of thematic analysis on which this analysis was broadly based are outlined in Appendix F.

By coding, I performed meaningful analysis, while trying not to disturb the meaning of the documents. The codes were words, 'chunks', phrases or even sentences. The data was read through and codes were developed, many of which were common to the majority of the documentation. 'Administration', 'time' and 'academic contributions' were examples of codes common to many of the documents. A thesaurus was used to identify synonyms, allowing comments describing the same concept to be coded together (Davidson, 2002). 'Difficulties' and 'problems' were synonyms, therefore, comments alluding to either of these were coded as 'barriers'. The coded data was read through and broad overarching labels or themes into which the coded data seemed to fit emerged. The completed data analysis was read by my immediate work supervisor, who also provided advice where I had difficulty with the coding or thematic categorisation of any comments.

Limitations, ethics and rigour

When reviewing these documents I had to remember their original purpose (Ary *et al.*, 2010) as these documents were not intended to be regarded as research data, but were recorded for a different purpose, context and audience (Cohen *et al.*, 2009). I had my own well formed biases about what happened and why it happened; I had to interpret the data in the 'spirit' of when it was written. I could not assume that the minutes of our meetings provided accurate accounts of events or settings (Ary *et al.*, 2010) and therefore needed to check with the other members of the group. I was also aware these documents, notes and minutes may be biased and selective in what they contained (Cohen *et al.*, 2009). My final themes were sent to the 'team' involved in this module for checking. Overall, examining work documents was unobtrusive and practical. The data had been collected and ethically, put no extra burden on staff or students.

3.9. Interviews

Objectives:
• To explore, via interviews, the student experience of participating in a distance module, focussing on barriers/facilitators to their experience. The focus of these interviews will be on action and improvement. • To explore collaboratively and critically with staff, via interviews, the process of planning and implementing this e-module, focussing on barriers, facilitators action and improvement.

Introduction

Qualitative approaches in research have been challenging for me. My background as a sports physiotherapist was based on a traditional or pure sciences background, quantitative analysis and positivism. However, due to the nature of this aspect of this inquiry, which aimed to explore perceptions and views regarding this module, this was not appropriate. I chose to tackle these objectives from a more interpretivist approach as I wanted to elicit the perceptions of those interviewed without overly constraining or guiding them and so to collect rich data. I believed there was no objective truth about this subject. The truth was subjective and perceptions varied between individuals. Therefore, an underlying assumption I made was that reality can be interpreted subjectively and therefore interpreted in various ways (Graneheim and Lundman, 2004). By exploring these participant perceptions, I believed it could help clarify the multiple interpretations of what 'happened' in this module. Interpretative approaches to research are characterized by the acceptance of multiple interpretations of the study topic and reality should be explored from the participant's viewpoint (Cohen *et al.*, 2007). Ideally, this approach contributed to my understanding of the variations and degrees of differences that existed.

Justification

These two objectives required the collection of rich qualitative data to explore and make meaning of experiences for others (Kvale, 1996). I was interested in the rich experiences of two groups of collaborators on this module: the staff and the students. Interviews were chosen as a method of data collection as I was interested in exploring what the staff and students 'thought' about the development and delivery of this module. Byrne and Long (2004) suggested interviews are well suited to explore the attitudes and beliefs of individuals. This method also produces a specific representation of the opinion or point of view of the individual. Through these interviews I aimed to identify and develop a deep understanding of what went well,

what did not go well and how things could be improved. I also wanted to critically explore changes we had already made as we were embedded in practice. Semi-structured interviews were used which allowed participants to give detailed descriptions of what they thought about their experiences. This is a common approach in qualitative research and allows previously unidentified areas of importance to the participants to be explored (Kvale, 1996; Silverman, 2001). I used a set of open predetermined questions and others emerging naturally from the interview itself (Byrne and Long, 2004; Cohen *et al.*, 2007) that focused on overall experiences, problems we had and what we did about them (Appendix G). This flexible method allowed me to set the overall structure of the topic and decide the main questions I planned to ask whilst capturing individual thoughts, beliefs and realities.

3.9.2. Methods

Data Collection

I interviewed two distinct groups of stakeholders to explore different perspectives: the staff involved in module development and the students involved in the delivery. It was necessary to explore their experiences for two reasons. If we had not experienced this process together, or if they were unfamiliar with the context of this module, their values and beliefs would be interesting, but not relevant to this research. There are others in the University who have experience developing distance modules I could have interviewed. However, I knew these groups had shared experience concerning this module.

Staff

Both the administrator and technician who were instrumental in developing this module agreed to my interview request. My aim was for staff to share their experiences (as mentioned earlier, they were not all positive) with a focus on improvement. I interviewed them in a classroom, alone and audio taped the interview. I knew both of these individuals well at a professional level, but have no social contact with them. I began each interview with 'small talk' to set them at ease. I explained they could stop at any time and finished each interview explaining that I would only contact them if I needed clarification with some aspect of the interview or analysis. Each interview took just under an hour. After completing the interviews, I listened to

them in their entirety several times, transcribed them and entered the data into Nvivo for coding.

Students

When interviewing the students, I made similar assumptions as I did with staff. I hoped they would be willing to share their experiences with a focus on action and improvement. After the final assignments had been submitted, I contacted seven students who all agreed to participate in an interview to discuss their experiences on the module. Although I am aware valuable information may have been lost, I chose to do telephone interviews. This was a distance education module. All of our communication had been totally at a distance; therefore, for consistency in communication, telephone interviews were chosen. Furthermore, telephone interviews can be efficient, reliable and a valid form of data collection (Musselwhite *et al.*, 2007). All of the students (bar one medical student) were practicing clinicians, two were overseas and I was eager to get as many interviewees as possible. Therefore, it was not realistic to interview them, except by distance.

All interviews were completed by me following the outline set out in my ethics application. I was alone in a room using a speaker phone and recorded the interviews. The interviews and mechanics followed a similar format to the staff interviews.

The outline of the interview schedule is below.

Participant	Email	Response	2nd email	2nd letter	Time set	Time organised	Interview completed
1 Staff	Y	y		y	y	June 2 at 1000hrs	June 2 2011
2 Staff	y	y		y	y	June 3 at 1400hrs	June 3 2011
1 Student	Y	y		y	y	June 29 at 0900hrs	June 29 2011
2 Student	y	y		y	y	June 30 at 2000hrs	June 30 2011
3 Student	Y	Y		y	y	June 28 at 2000	June 28 2011
4 Student	Y	y		y	y	July 18 at noon	July 18 2011
5 Student	y	y		y	y	June 30 at 1230 then July 4 at 1015hrs	July 4 2011
6 Student	y	n	y	y	y	July 7 at 2000hrs	July 7 2011

Participant	Email	Response	2nd email	2nd letter	Time set	Time organised	Interview completed
7 Student	y	n	y	y	y	July 7 at 1000hrs	July 7 2011
Total Interviewed: 7 Students and 2 Staff							

Table 7: Interview schedule

Analysis

This part of the inquiry required analysis of rich qualitative data that was complex as it offered varied insights into individual's experiences. Therefore, for analysis, I chose thematic or qualitative content analysis as described earlier.

Following the interviews, transcription and rereading, codes were generated from the rough data. Broadly following Braun and Clarke's (2006) model (Appendix F), I tried to develop overarching descriptive labels or themes, while ensuring that all coded material was encompassed into one of these themes. Then, using both the interview questions as a guide and the descriptive labels which emerged as the transcripts were read, the themes were reviewed and defined.

Limitations, ethics and rigour

My position as module leader was known to all participants. To address this, I made initial contact formally and non-personally by email. After the module was finished and I had received ethical approval, emails were sent to participants explaining the purpose of the inquiry and inviting them for interviews (Appendix H). Power within both an academic setting (both staff-staff and staff-student) and within practitioner research is omnipotent. Recognising and confronting power differentials between the researcher and the researched is essential (Cornwall and Jewkes, 1995). I was aware of this and hoped it would not alter participants' desire to answer questions as openly as possible. They were aware I was involved in this inquiry as part of an academic submission, but also to improve UTCE. Action research can ethically be dangerous ground (McNiff and Whitehead, 2009). My vigilance with transparency to myself and others was critical in this process.

This was a small, non-random, convenience sample and unlikely to be representative of the population as a whole (Patton, 2002). However, this purposive sampling was strategic and allowed me to choose individuals who would be familiar with UTCE, and thus have rich experiences that were relevant to the research question.(Crotty, 1998)

The sampling strategy within this section was not about generalisability, but facilitated the exploration of my aim. Maxwell (1996) argued that qualitative studies rarely involve sampling procedures or size necessary to address generalisability. The overall goal of this sample was to explore the 'authentic', and in this case collaborative, understanding of peoples' experiences.

3.10. Evaluation questionnaires

Objective:
• To investigate student perceptions of UTCE focusing on barriers and facilitators to their experiences, changes, evaluation of changes and suggestions for improvement.

Introduction

One of the ways I hoped to learn and improve concerned the evaluation of each of the three 'strands' and the overall module. My view of student's perceptions of each strand suggested the phenomenon was real, existing as a truth outside of the mind of individuals. Here, this inquiry is approached from a slightly more positivist paradigm with the intention of collecting and interpreting data objectively. I knew I planned to interview students, which would approach the data collection and analysis from a very different perspective. Combining methods of data collection when evaluating DL may give a more complete picture of learner intent (Rogers *et al.*). Coherent with the eclectic methodological choices I employed as a Pragmatist, I decided to use a questionnaire to gather evaluative information concerning each of the three strands and the module as a whole, allowing consistent data collection across a sample. Given the suitability of questionnaires in 'gathering factual information and data on attitudes and preferences' (Cohen *et al*., 2007, p. 206), this was an appropriate approach to achieve the objective outlined above. I hoped to collect and analyse data between strands to improve and develop the next strand and ultimately the overall module.

Justification

This section of my inquiry aimed to identify what the students found useful, what could be changed and how long they spent on each strand. The four evaluations had the same format and similar questions (Appendix I).

In e-learning environments, questionnaires are a valuable method of successfully capturing phenomenon in an objective manner (Hermans *et al.*, 2009), are recognised

to be both economical and time-efficient (Cohen *et al*., 2007), and can potentially be generalisable to a wider population (Robson, 2002). Being realistic and practical, this was an ideal choice. Some of this data would have been collected, regardless of me participating in a formal inquiry for my EdD therefore put little additional burden on the students. This method also allowed greater sampling of a geographically distributed student population in the limited time available (Robson, 2002). There were only three weeks between strands with students all over the NE of England and two students overseas. The likelihood of arranging or performing one to one interviews was not possible, nor realistic.

3.10.2. Methods

Data Collection

At the end of each strand and the module, a questionnaire (Appendix I) was sent electronically to all students. This data collection and resultant analysis spanned the entire module as four different evaluations were sent out. This data was analysed and acted upon in an iterative manner. The data was anonymous, collected electronically and analysed by me. Arguably, although the entire cohort was evaluated, I realise a small sample (n=8) cannot be said to be representative or generalisable. With respect to the small sample of students, a high response rate (mean of 90% with four evaluations) may have increased the generalisability of results (Robson, 2002). This data was easily accessible, timely and gave me an early indication as to students' perceptions of what was working and what was not. It also gave me some early suggestions for action and improvement.

Analysis

Quantitative data was entered into a Microsoft Excel spread sheet and descriptive statistics performed. Since the free-text questions simply asked students to share positive aspects and how this module could be improved, a simple method of coding these statements into categories was used for analysis, similar to the method of content analysis described by Cohen *et al*. (2007). Free-text responses were transcribed, the data was read through, codes were assigned and broad themes emerged. Although the evaluations are presented late in this chapter, the beginning of this data (the first of four evaluations) was collected and analysed early in the research

process. After the fourth and final evaluation, the analysed data was reviewed chronologically. During this second stage, I was looking for themes congruent to all of the evaluations that demonstrated barriers, action or evidence.

Limitations, ethics and rigour

An inherent limitation of questionnaires as a method of capturing a phenomenon is the assumption that the responses participants give are an accurate reflection of their true beliefs (Cohen *et al.*, 2009). In my inquiry, the questionnaires were anonymous in the hope that this would encourage frankness of response (Robson, 2002). The link to the evaluation was sent from my secretary (as are all administrative emails) as part of her routine administrative duties. I hoped this consistency and distance from me would encourage authenticity.

I realised using questionnaires as a research method limited the depth to which the phenomenon could be studied. McNiff and Whitehead (2002) warn against using questionnaires in action research. They are notoriously difficult to construct and liable to be misused. However, they suggest they can be used to identify trends or as a basis for further qualitative analysis. The length of this questionnaire and the questions were far from exhaustive; the need to produce a questionnaire of an acceptable length, without putting an onerous burden on students restricted me to four or five questions. I was evaluating each strand, so I wanted the evaluations to be brief and focus on action and improvement. Pre-testing of the questionnaire was done with two colleagues. Piloting was done to test the mechanics, attempting to identify and resolve any potential issues before the study commenced (Stone, 1993).

3.11. Web Analytics

Objectives:
• To analyse time commitments and patterns of work from staff in the development stages of UTCE in order to inform workload planning. • To analyse time commitment and contributions from students to create a representation of online learning workload and patterns. • To analyse time commitment and contributions from staff to create a representation of online teaching habits and patterns during the delivery phase of UTCE.

Introduction

From the onset of this module, one of my main problems, and one for which I was ill prepared was that of time. Conversations with other staff reinforced this as did early

feedback from students. Another problem I faced was understanding how the students engaged with the educational experiences I created. With no traditional face to face feedback, as a novice DL practitioner, I needed to explore how, and if, students were engaging.

Justification

In this study, time spent by staff and students, email traffic and workload patterns were quantified. Three data sources were investigated: self-reported time work logs, email traffic and web analytics. These are all valuable sources of information when investigating DL practice (Christenberry and Sturgeon, 1996; Baumfield *et al.*, 2008; Rogers *et al.*, 2010). Furthermore, these sources may highlight links between new IT projects at the University level and faculty (Christenberry and Sturgeon, 1996). Personal records of time spent on tasks in 'work logs' were the first sources investigated. Christenberry and Sturgeon (1996) suggest that in IT development in Universities, work procedures are misunderstood by the institution and the link between what is actually being done could be manifested through work logs and transaction records kept by employees. The second data source was a record of staff email traffic concerning the module. Counting emails does not necessarily indicate workload; however, email exchanges form a tangible part of the transactions between staff, and are easily accessed (Baumfield *et al.*, 2008). The third data source was web analytics which provided the opportunity to explore staff and student usage and behaviour patterns online. Web analytics is defined as 'the measurement, collection, analysis and reporting of Internet data for the purpose of understanding and optimising Web usage' (Web Analytics Association, 2010). They have been used primarily in business to track consumer groups related to marketing efforts, but can be used as a powerful way of extracting actionable knowledge in distance education (Rogers *et al.*, 2010). This actionable knowledge was what I hoped to gain in order to inform practice. Web analytics were used to create a concise picture of academic and student work patterns during delivery.

The data was approached from a positivist viewpoint and was treated as an object that could be captured and measured(Crotty, 1998). The data was collected and interpreted objectively in a search for answers.

3.12. Methods

Staff Data Collection

There were three main team members involved in developing and delivering this e-module: an academic (me), a technician and an administrator. In October 2010, I asked each team member to keep a record of time spent working on this module to inform future development. They agreed. I had not begun work on this submission. In January 2011, after deciding on my topic for this submission, I asked if they would consent to me using this data as part of this submission. They consented. We kept detailed logs of time spent in any activities surrounding the development and delivery of the module. Each staff member kept either a paper or electronic record of time spent working on the module in 15 minute increments beginning 3 months before implementation with students until the module was completed. We classified our time into one of two categories: development and delivery. These records were collected weekly and put into a shared data base and 'themed' as academic, technical or administrative responsibilities. All email traffic concerning the module was saved in a separate folder in Microsoft Outlook and classified in a similar method: development or delivery. After the module was completed, I categorised these tangible e-mail records of activity by 'theme': either academic, administrative or technical. To increase reliability, an independent educationalist reviewed and categorised a random sample of 30 emails into the three 'themes' of: academic, administrative or technical issues. There was a 100% agreement. This suggested reliability with the categorisation, and also suggested the tasks and issues fell clearly into one to the three themes. With these work logs and email records, I hoped to identify time involved, trends and workload patterns.

Analytics are collected routinely within our Learning Support Environment (LSE) in web logs. Using a system administrator, and adhering to ethical standards, I extracted relevant data from the web logs to create online working profiles. Academic working patterns were outlined. All data collected was anonymous. Data of individual staff was not considered as valuable as that of the entire academic team, so although in some instances (for example when individuals signed their name in the discussion forum or learning space) we could identify individuals, this was of no benefit and therefore not recorded against a name. The data was collected and analysed and trends were identified as groups.

Student Data collection

Whilst adhering to ethical standards, the online behaviour of the students was tracked. All data user was totally anonymous as explained above. Certain web analytic metrics should be chosen because of their impact on outcome as well as the ability of the investigator to make actionable decisions based on them (Rogers *et al.*, 2010). My focus was continually on action and improvement.

Emails were saved (in and out) in a specific folder in Microsoft outlook. I applied for funding from the school to employ an undergraduate maths student to count the emails and enter temporal data in Excel (Appendix J). I was fortunate enough to receive £1500 to employ a student 'Chris' to input the data from our server. He came to the University and after an explanation began inputting the data. He did this in the same office in which I was working so had access to me if he had any questions or concerns. Explicit instructions were given and his contribution, whilst totally invaluable, focussed primarily on data input.

Analysis

Data analysis was done using Excel and simple statistical analysis. I met with Chris and explained the major sources of data: emails, discussion forums and the learning spaces. I explained how he should input the data and my expectations. He input data into Excel concerning email traffic, learning space use, discussion forums, timings and 'hits' per page. I performed simple statistical analysis myself (chi-square analysis and post-hoc tests), based on Rogers *et al*.'s (2010) work with assistance from a psychometrician.

Limitations, ethics and rigour

Historically, analytics have been used in business to track online consumer groups. Using web analytics in education can be misleading as the field is still emerging (Rogers *et al.*, 2010). Arguably, they cannot be used alone to make informed educational decisions (Ament-Gjevick, 2012) but when used in combination with other outcomes can become meaningful and actionable (Rogers *et al.*, 2010). As analytics can easily be misinterpreted, I had to avoid an attempt to infer patterns based on short term results (Ament-Gjevick, 2012) and also in the small numbers in this module. However, Rogers *et al.*, (2010) argue that the above flaws are no reason to 'shy away' from the use of

analytics and suggest that researchers and practitioners of DL may be uniquely positioned to take the use of analytics to a new level in both design and decision making.

To address reliability, I performed four independent audits of discussion forum/learning space contribution timings and compared my results to Chris'. They were in exact agreement. He then classified the emails according to times/dates and either recipient or sender. Again, I gave him 20 to classify against which I classified mine to address reliability. There was no difference. He worked either in my office beside me or at home. I was available to him at any time via telephone or email.

3.13. Chapter Summary

As described earlier, I rejected the choice between the two traditional paradigms in my quest for a practical approach to methodology (Cohen *et al.*, 2009; Creswell and Plano Clark, 2011) and I have justified my eclectic methodological choices, based on my research aims: action and improvement.

My inquiry and AR in general, were a blend of practical and theoretical concerns and were both action and research. My view of the world, and this module, altered as I carried out different aspects of the study. It was not fixed in one paradigm. I was guided by what worked, what made sense, what was most efficient, what I could action and how I could improve (Creswell and Plano Clark 2011).

While focusing on objectives and research questions, I have described a systematic approach within my action research inquiry, data sources, a variety of instruments used for data collection and different analytic approaches. Undertaking this inquiry motivated me and gave me the confidence and opportunity to do something about 'my practice'.

'Built into action research is the proviso that, if as a teacher I am dissatisfied with what is already going on, I will have the confidence and resolution to attempt to change it. I will not be content with the status quo…'(McNiff and Whitehead, 2002, p.50).

The next chapter addresses the results of both the development and delivery of this module. It was not always a flattering portrait of my practice and I was often dissatisfied.

Chapter 4. Results and Analysis

4.1. Introduction

McNiff and Whitehead (2009) explained that my action became research when I decided to investigate what I did**, explain how and why I have improved my practice and what my purposes were.** My inquiry could not be focused solely on improving practice; I had to make a claim about improvement. I could not just describe action; I had to explain it. This chapter is organised by data sources, followed by a subsection highlighting actions I took, explanations and significance to my practice (Figure 15). The results and analysis of the analytics are presented first as this offers an overview of the module and related to both the staff and students. This is followed by results representing staff, then student perspectives. Wherever possible, I displayed results in both a graphic and table view. The tables allowed clear definitions and structure to my analysis, and hopefully demonstrated transparency with my qualitative content analysis as an academic submission.

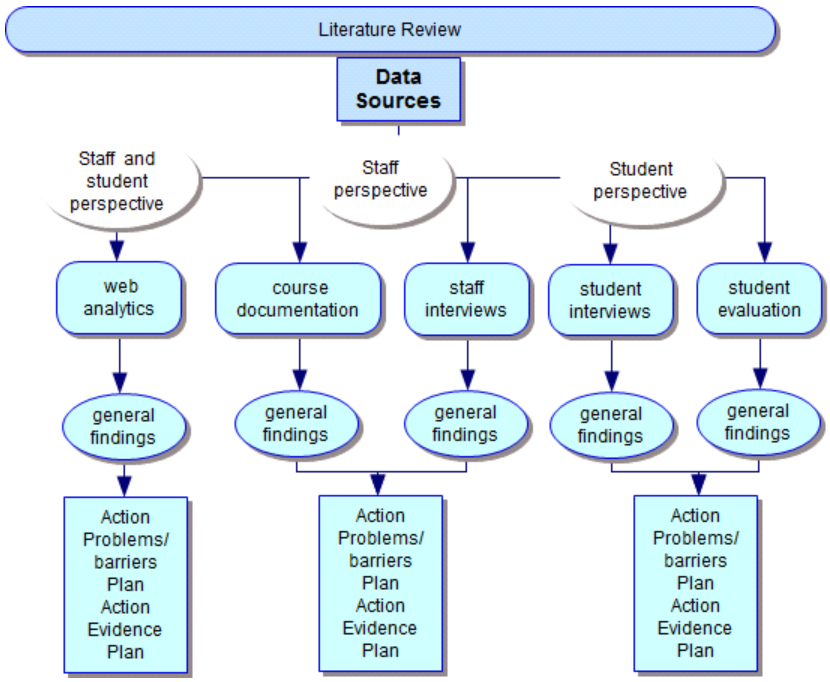


Figure 15: Overview of results section

4.2. Staff and Student Perspective

4.2.1. Web Analytics

Introduction

As outlined in the methodology chapter, web analytics provided data concerning staff and student behaviour patterns online. The presentation and analysis differs greatly

from the next sections, as the data itself was so different. I believed I could measure this data and interpret it objectively . These results are presented visually and chronologically, beginning with development and ending with delivery. For orientation, I have included a module overview (Table 8).

Development and delivery of UTCE
Prior to the UTCE (Utilising Technology in Clinical Education) module going live, staff (administrative, technical and academic) developed it for about a year. The module itself ran for a semester beginning in January 2011. There were three strands; each strand was open for two weeks and consisted of activities, discussion forums, wikis, required reading and individual and group tasks. There was approximately three weeks off between each strand.

Table 8: Overview of UTCE

4.3. Development

4.3.1. Staff issues with development

The following data was collected before the module was released and went 'live' to students.

Pattern and volume of staff email communication

There were over 1000 emails exchanged between the academic, the administrative and technical team during the development of this module (Figure 17) with administrative issues comprising the majority of the concerns. Although the team was congenial, the nature of the emails was never of a personal nature; our communications were all task related. The technical, academic and administrative emails appeared to follow a similar pattern (**Error! Reference source not found.**) which suggested all three of these roles required significant levels of activity throughout. The majority of these seemed to fall within the last month before implementation. In hindsight, this was not surprising; however we were not prepared for the actual volume of work.

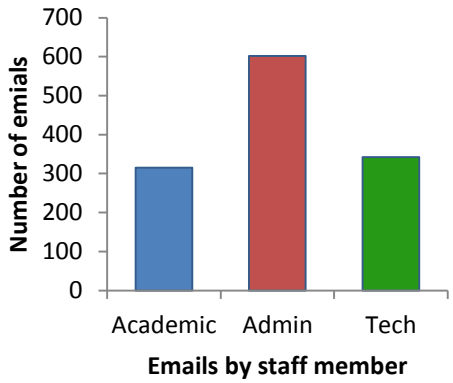


Figure 16: Volume of staff emails

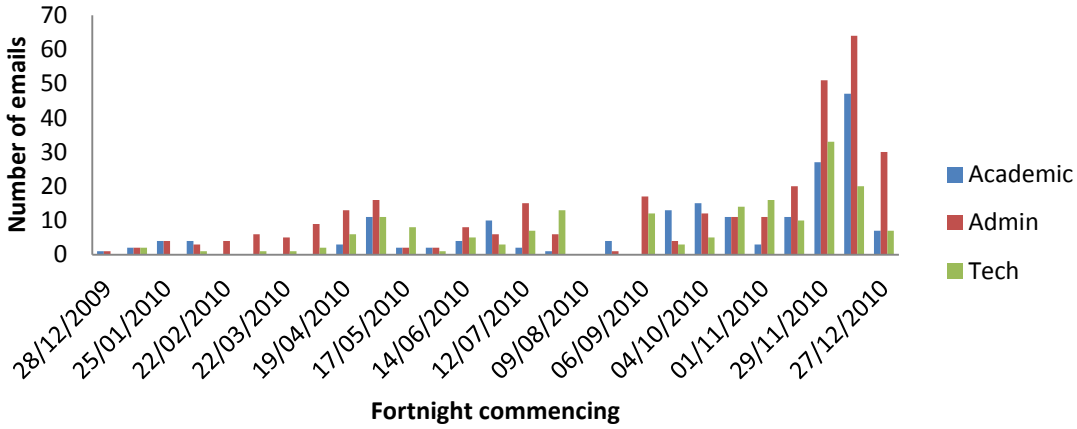


Figure 17: Pattern of staff emails during development

Pattern and volume of student email communication

Figure 18 and Figure 19 are slightly misleading as there were very few emails from students. However, they do demonstrate that there appeared to be no academic concerns or questions before delivery. All of the emails from and to students were of an administrative or technical nature.

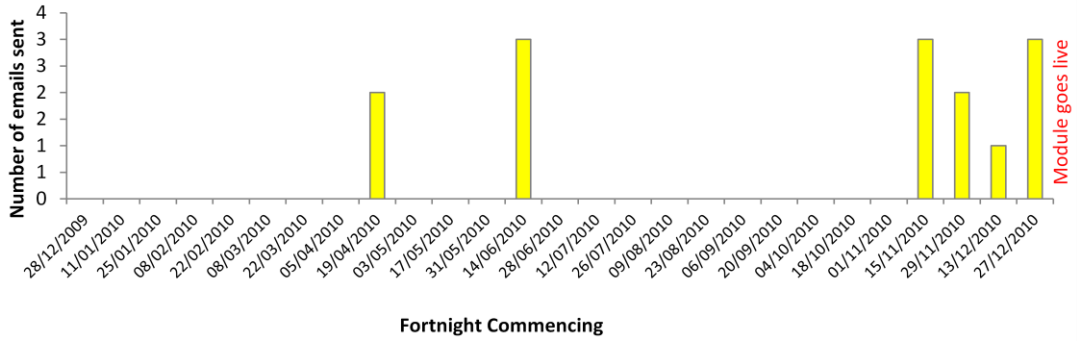


Figure 18: Pattern of student to staff emails

Figure 19: Volume of e-mails between students and staff

Development time per strand

Figure 20 demonstrates the number of hours the academic, administrator and technician took to develop each strand. As the module progressed, overall the total time commitment decreased. Figure 21 illustrates, as the module progressed, the ratio of academic time increased and that of the administrator and technician decreased. This demonstrated a change in both workload and pattern of work. As the academic, I began performing more of the administrative and technical roles. There was a significant input of time from the entire team in the development stage. Over 200 academic hours, almost 100 technical hours and 42 administrative hours were dedicated solely to the development (not delivery) of this module. Each of the three strands took students approximately 10 hours to complete (Figure 25). Therefore, we used approximately 12 hours (7.3 academic hours, 3.3 technical hours and 1.4 administrative) to develop one hour of online student activity.

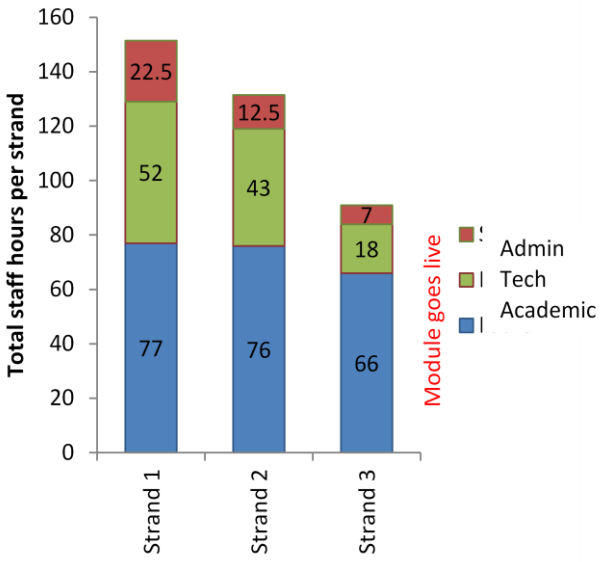


Figure 20: Staff development time in hours by strand

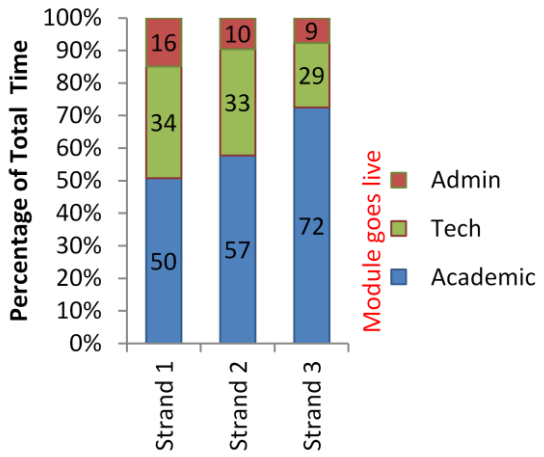


Figure 21: Ratio of staff development time by strand

4.4. Delivery

4.4.1. Staff issues with delivery

Over 75 percent of the recorded academic time was spent outside of 'normal' work hours (Figure 22).

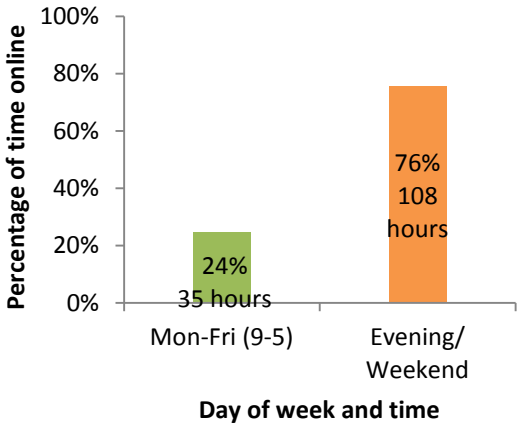


Figure 22: Timing and pattern of staff contributions

Figure 23 demonstrates the large volume (over 400) and focus of inter-staff emails, during delivery demonstrating it was not solely academic work; administrative issues appeared to be predominant. Technical issues appeared to be less significant and occur in bursts. During development, we pre-tested and piloted the entire module from a number of different locations (University library, public library, different private residences). Activities and software were altered and in some cases, abandoned. Although time-intensive, I was aware that technological problems are cited by students as one of the major barriers to successful DL (O'Neill *et al.*, 2004). I needed to ensure the functionality of the infrastructure before the module was delivered, which,

perhaps was demonstrated by the technical issues being the least significant demand. Overall, there was a decrease per strand in email traffic.

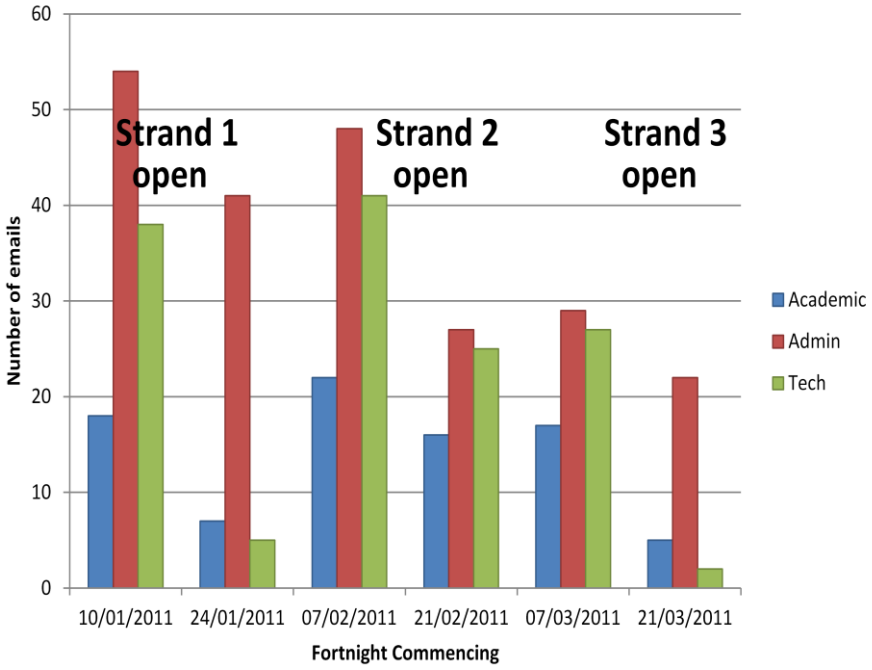


Figure 23: Focus and pattern of staff emails during delivery

Over 100 academic hours, almost 10 technical hours and 3 administrative hours were dedicated to delivery of this module (Figure 24). Each strand took students approximately 10 hours to complete resulting in approximately 4 hours staff time (3.6 academic, 0.3 technical and 0.1 administrative) per one of online student activity. As discussed earlier the development took approximately 12 hours per one student hour. Combining this data (Equation 1) suggests that for each hour of online student activity, 16 hours (12 development + 4 delivery) staff time was invested (11 academic hours, 3.5 technical and 1.5 administrative hours).

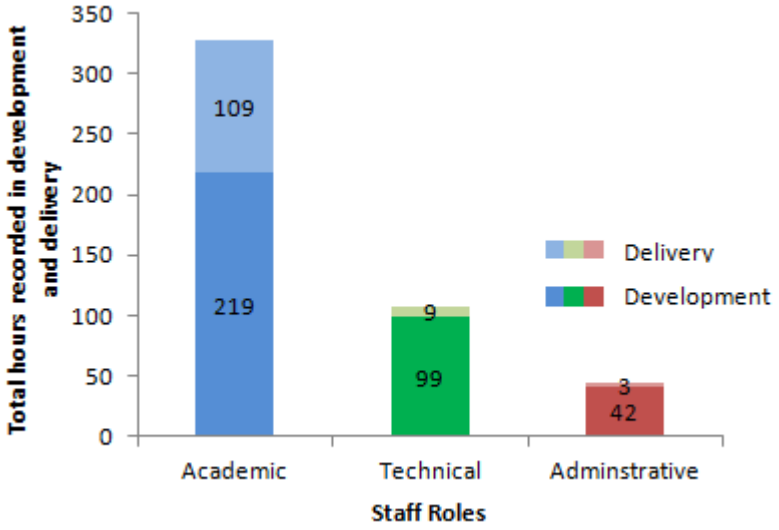


Figure 24: Individual roles and total hours required

Time Model: 1 hour student activity requires 16 Staff hours			
1Student hour = 16 Staff hours (11Ac + 3.5 Tc + 1.5 Ad))			
St= Student hours	Ac= Academic hours	Tc= Technical hours	Ad= Administrative hours
This workload can be further planned or modelled by the following: 1Student hour = 11(7.3 dvp'mnt + 3.6 dl'vry) Academic hours + 3.5(3.3 dvp'mnt + 0.3 dl'vry) Technical hours +1.5(1.4 dvp'mnt +0.1 dl'vry) Administrative hours			

Equation 1: Breakdown of development and delivery tasks for one hour student online activity

4.4.2. Student issues with delivery

The following data was collected during delivery of the module.

How long did students take to complete each strand?

This was self reported by the students. I planned each strand to take around 7.5 hours for completion. On our programme, the average face to face diploma module has 20 hours class time, so I used that figure as a guide. Although the first strand appeared, on average to take longer (which one might expect as a certain time would have been spent becoming familiar with the environment) the 2nd and definitely the 3rd strand were close to target (Figure 25). This suggested we planned the activities fairly accurately.

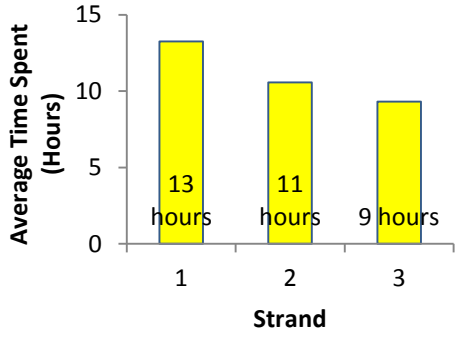


Figure 25: Self reported time per strand by students

When were students working online?

Our students contributed most regularly on Sundays (Figure 26) and the busiest 4 hour period was consistently 2000 hrs until midnight (Figure 27 and Figure 28). This was contrary to the literature which suggested Monday as the most popular day and the busiest period being noon until 1600 hrs (Rogers *et al.*, 2010) for online contributions in distance learning. There appeared to be relatively even distribution with the times of postings, but after 2000 hrs seemed the most popular posting time.

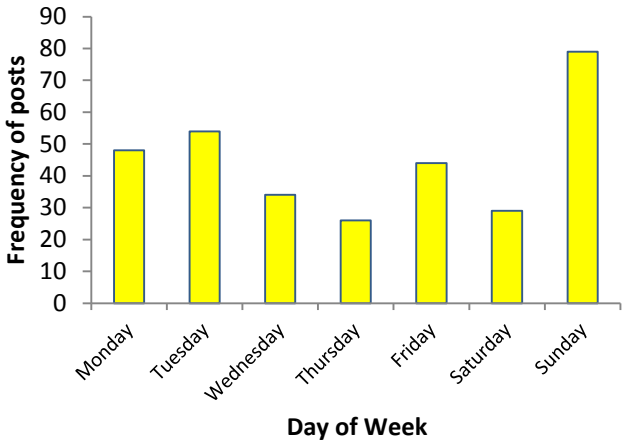


Figure 26: Postings by day of week

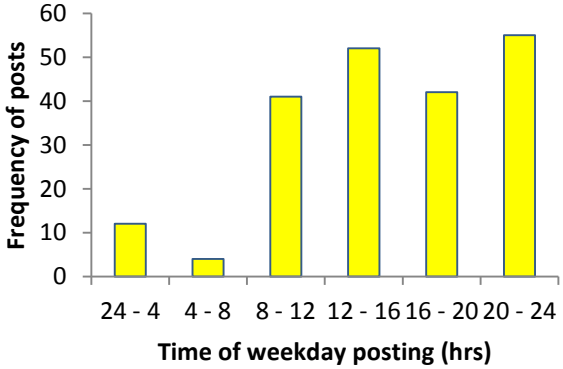


Figure 27: Time of posting on weekdays (M-F)

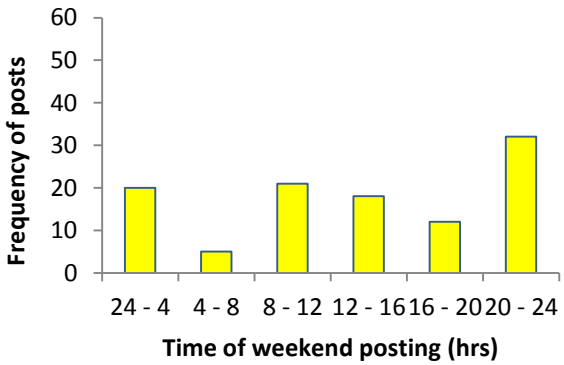


Figure 28: Time of postings on weekends (S-S)

Almost 70 percent of the all contributions from students occurred outside of normal working hours (Figure 29).

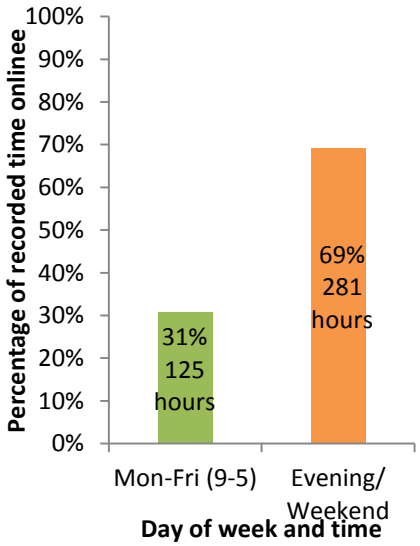


Figure 29: Timing and pattern of student contribution

How were students working?

The visits appear to be directly proportionate to the actual activities. For example, there are more 'other' pages in the module, therefore, more opportunities to visit. That itself is not particularly interesting. However, students tended to exit primarily from learning spaces (Figure 30).

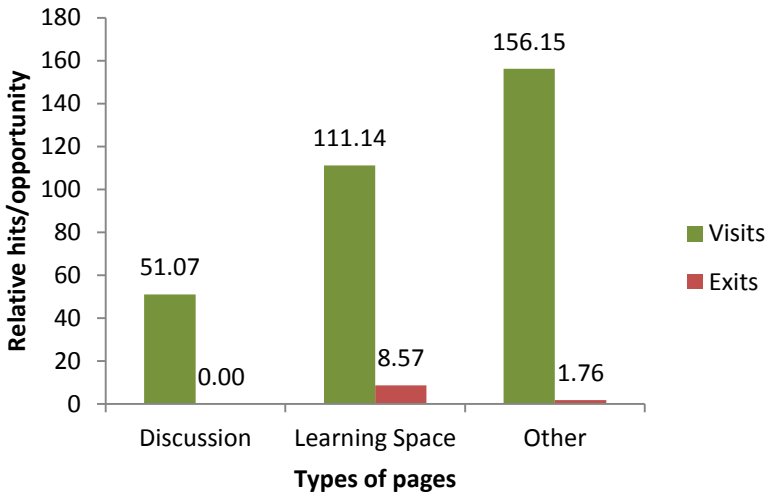


Figure 30: Proportion of visits/exits to opportunity

Did students engage with the material?

'Google Analytics' suggest students have engaged with material if the average number of visits to intermediate pages is higher than the average for the site in total (Rogers *et al.*, 2010). Using Figure 31 as an example, students who were solely strategic, and not engaged, would read the information on the first tab (i.e. tab 1: what is e-assessment), then skip to the last tab (i.e. tab 3: workplace) and contribute. However, if they were engaging, they would visit the middle tab (i.e. 2 Assessment in Medicine) more as these tended to be more complex readings or other forms of information. I tested to see if this was the case.

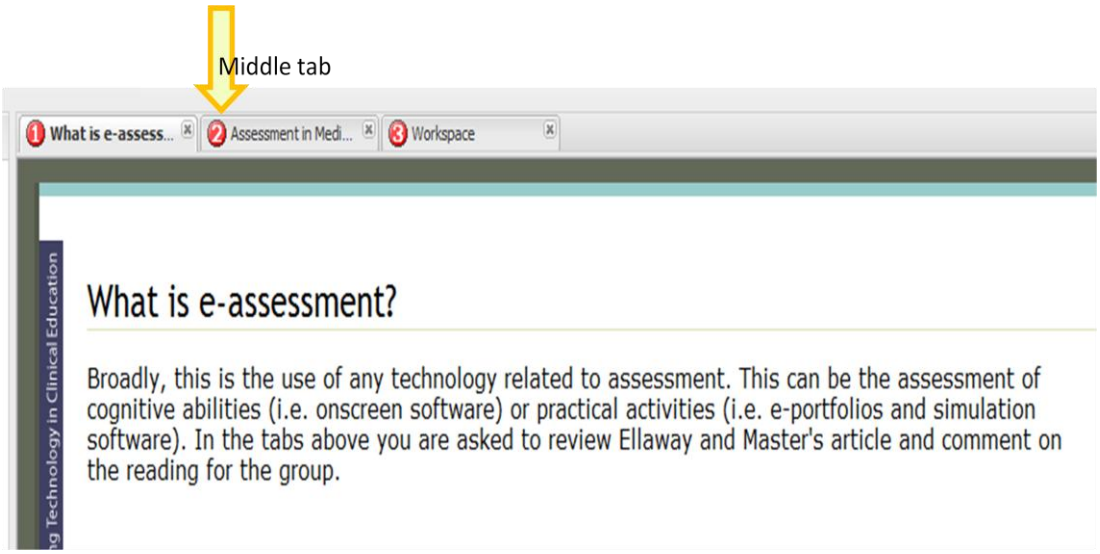


Figure 31: Example of page from UTCE module with middle tabs

I defined a subset of middle tab clicks from activities that have a discussion or learning space on the last tab and compared these to the overall tab clicks (Table 9). I then sorted the data chronologically by strand (I had structured the activities to encourage

the students to become more autonomous and 'engaged' as the module progressed.). Clicks to middle tabs were lower than the strand average in strand one. However this increased as the module progressed with middle tab clicks being closer to the strand average in strand two and culminating in strand three where middle tabs were clicked more than the strand average (Table 9). This is demonstrated in Figure 32 where the mean middle clicks in strand 3 exceed the overall clicks.

	Strand 1	Strand 2	Strand 3	total
Total middle tab clicks	449	578	879	1906
Total overall tab clicks	1040	1559	1292	3891
Proportion of middle tab clicks to overall clicks	43%	37%	68%	49%
Average middle tab clicks	64.14	96.33	79.91	79.4
Average overall tab clicks	80	103.93	76	86.5

Table 9: Outline of middle tab and overall tab clicks

After performing a Chi square analysis, a significant difference in the clicking behaviour between the three strands was identified ($\chi 2$ (2, N= 5797) = 94.9, p<.001). A post-hoc examination of the standardised residuals showed that actual middle tab clicks were higher than their expected counts for the third strand (residual = 6.2 which was greater than the critical value of 1.96). As the middle tab clicks are indicative of student engagement (Rogers *et al.*, 2010), the results suggest that students engaged in strand 3 and were more engaged than they were in strands 1 and 2. There was a significant difference in engagement across the 3 strands. Students appeared to be engaging more as the module progressed.

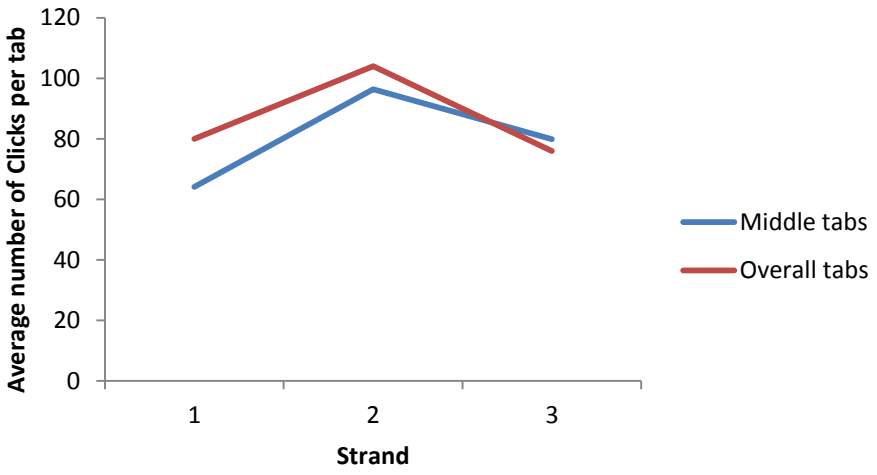


Figure 32: Comparison of middle to overall tab clicks

4.5. Action staff and student perspective

At the risk of this becoming a technical process, using the analysis from the web analytics, I have created a list that outlines actions I have taken or plan to take and what I have learned. These are incorporated at the end of the thesis under recommendations.

4.6. Staff Perspective

4.6.1. Course Documentation

Introduction

As explained earlier, the analysis of the Web analytics was done last. It is presented early in this chapter to provide context and an overview of the module. The remaining analysis is now presented chronologically, beginning with early development of the module.

The collated course documentation provided an important perspective on the developmental process of this module. As in the later results, I originally planned to create tabled definitions and visual diagrams of each theme, however, the presentation of this early data became artificial and did not fit into my original analytic plan, which is not uncommon (Morse, 1999). In retrospect, my desire to analyse and formulaically present this early data probably stemmed from my positivist education and desire to be concise and systematic in the initial stages of the study. In reality, these early results provided a background for later data collection and analysis, emerged far more holistically and are therefore presented as descriptive themes (Cohen *et al.*, 2009).

4.6.2. Key Themes

Initially, it was clear that the initiative was 'top down'. There was early documented support from the Head of School and the faculty requirements for a new module were addressed. These documents focused on formal procedures and University regulations. The majority of the later documents were programme level, but vague. There seemed to be a lack of direction; it was unclear who was doing what or even where the module was to be hosted. This was in direct contrast to the midpoint documents which focused on technical issues, clarifying responsibilities and timelines. The final documents were almost a team debriefing and clearly reinforced the barriers and hurdles that had been highlighted earlier.

Several key themes emerged from the documentary analysis:

- There were continued issues of who was doing what and how the module was to be delivered. There were several concurrent meetings when the interface and roles or responsibilities were not clear. Being part of this process, I was aware this was problematic.
- A certain vagueness, we'll have to 'wait and see' feeling seemed present within meetings. Individuals were frequently unprepared for meetings, not present or filling in for someone else and not familiar with the agenda. Nothing, administratively, or disciplinarily was done about this. It seemed to be ignored. Roles and accountability appeared unclear. Since, online learning represents a discontinuity with previous practice, it has the potential to cause role crisis (Briggs, 2005) which I believe we experienced. The documents I analysed contained general programme issues and there were eight other modules running. Roles and accountability did not appear unclear in the rest of the programme. Only in this module were these issues prevalent.
- There appeared to be barriers, conflicts or lack of clarity as to the developmental process of this module. Several questions were asked in the meetings and the answers were incomplete.
- The top-down initiative and formal processes were discussed and the team were aware of the hierarchy of the University. Involvement with 'the

school' appeared to be more of a threat, or a tool for action, as opposed to a developmental process.

- There was not a clear (formal or informal) power structure.
- Time, progress and deadlines were mentioned repeatedly. However, the themes appeared to conflict in that: individuals were not aware of them, they were meaningless or alternatively they were structured and necessary.
- Communication was discussed, especially in the beginning. We did not have patterns and habits to fall back on. We had to establish 'how' to communicate.
- The final UTCE team documents contained very little of the above themes, they were all directed towards technology, concrete changes and immediacy. Even the tone of the minutes went from a slightly conversational style, to bullet points, lists and action plans.

The analysis of these documents and dates of meetings demonstrated a pattern of little or no forward movement or vision, until approximately 6 weeks before the delivery date (Figure 33).

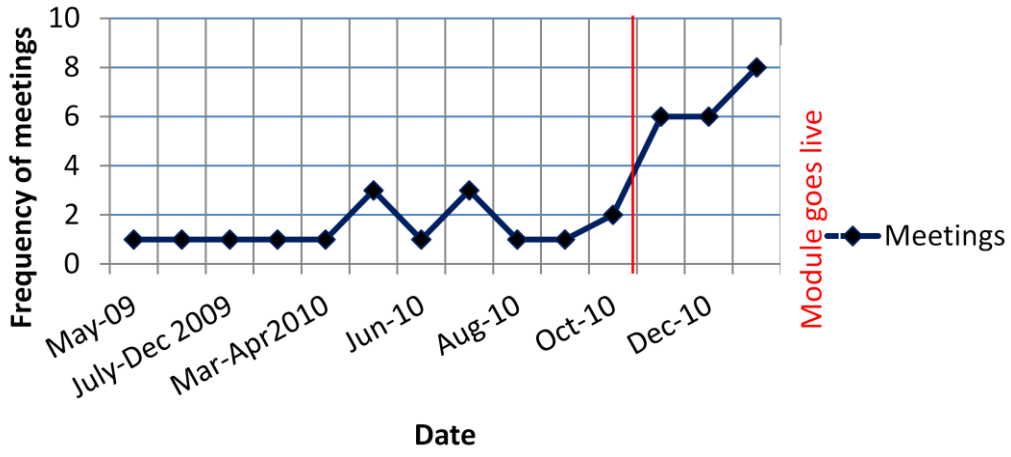


Figure 33: Trends in meetings prior to implementation

There were unclear or mixed messages as to who was doing what, roles, responsibilities and how this module was going to be delivered. The project went on for months with little happening and lack of role clarity and resultant lack of accountability. It then became apparent that we were running out of time, and at this point, the actual interface had not been decided. As the start date loomed, the tone of

the documents changed. It became a panic on the ground level to get the module up and running.

4.7. Staff interviews

Introduction

This data was arguably the most interesting to me as a researcher and a member of staff. It had nothing to do with being a good teacher, or what students thought. It had little to do with the module. It was about working, and navigating within a team, inside of a University. Using Nvivo, I coded the interviews and refined the results from 36 initial codes to 20. Using thematic content analysis, I grouped the codes into the five themes presented below (Table 10).

Theme that emerged	Definition of theme	Codes making up the theme
Change	This was any clear indication of change that was taking place. It did not matter at what level; there was some movement or attempt to move.	Emergent change Planned change Cultural change Change in tradition Organisation support of change
Practicalities	This was any technical or pragmatic issue. It was about the day to day work that needed to be done on the module and was tangible.	Time, Delivery 'Getting on-getting the job done'
Influence	This theme concerned power or position. It was a broad theme that consisted of outside 'influences' that were less tangible but affected the development process.	Leadership Motivation Vision, Rationale Empowerment
Group Behaviours	This theme encompassed anything the team, or those involved peripherally were doing that affected and/or involved others. It involved specific group behaviours, not general influences.	Teamwork Group actions Communication Conflict
Individual	This theme concerned the expectations, or behaviours of individuals. It included individual characteristics of people.	Accountability Trust Individual actions

Table 10: Themes and codes for staff interviews

I deleted identifying notations within the analysis and results section as I felt the anonymity of the staff members was essential. Although not flagged by ethics, I felt uncomfortable with the potential breach of anonymity by my co-workers.

The first question I asked concerned the developmental process.

[Interviewer (me)]: *So, how do you think the developmental process went?*

'That was hard- that was difficult. Um- I mean, you know- there was the problems we had with staff leaving…… I don' think you or anybody else realised it or would put their hand up and say maybe we should rethink what we are doing about this. And, I think it was about people were unsure what they were doing…..uh... It was very difficult'

This was the second team member's response to the same question:

'Overall- reasonable. Yeah. '

It was evident from the start, the team held very different views as to what had actually happened. In a team of three, one member thought our process of developing this module was reasonable and one thought it was difficult and hard. I realised, as the leader, I had no idea what they thought.

4.7.2. Themes

The five main themes outlined and defined in Table 10 are described in more detail below.

Change

Change was addressed by both staff members. There were different kinds of change discussed: cultural change, changes we had planned and changes that just happened. Cultural change appeared to be a major issue: some change in the organisational or institutional way things were done. This was brought up in terms of what we were trying to do now, not working within the traditions or habits of how things had worked in the past and seemed to be a struggle:

'I think school politics consume an inordinate amount of time…..It is unfortunate and frustrating. You underestimate the task of starting with …politics and opinion... I mean... you almost need …to make sure things happen… it is out of necessity that the formal structures and procedures break down'.

Emergent change was unplanned change that happened as part of the developmental process. There were several comments concerning technical changes, discussed under practicalities, but these changes were far richer. We appeared to be struggling against the institution and its structures to work out a way to function together.

'I think in the end it comes down to a small group of individuals getting these things off the ground'.

'The role given was to me was to XXXX- which just did not function. The role ended up being a facilitator and trying to get people to stick to deadlines role. It just did not work……..I don't think I'll ever get so frustrated again. '

Practicalities

There was an appreciation for the lack of clarity in what platform we would use and the confusion this caused due to rewriting of materials. Time was an issue and the press for time limited our delivery options.

'*By being limited by time and having to get on and produce the module. We were rolling with a blank sheet of paper with no mechanism for delivery. I am guessing you don't want to deliver these from scratch every time'.*

'It was like the ball was rolling down the hill and we had to keep running'

Influence

This theme concerned issues of power, leadership and vision or motivation. There was a definite feeling of powerlessness in the team and an acknowledgement, or understanding, that I too was powerless within the university.

'.. You know, time… that is what you asked for initially, wasn't it? You asked for time, you know I think that is something, how , you know, if you did this again, you would insist that you were given time. But it is awkward, how do you, with the hierarchy, how do you, how do you say to someone who wants you to do something -I'm only going to do it if...I suppose it is having that confidence to be able to do that , you know'

'As module leader maybe it should have been you doing the chasing from the start. I understand your difficulty in that- because of the hierarchy- because of the different teams'

We were aware we were being asked to do something difficult, out of our comfort zone and had no power or voice to make demands. However, it was unclear to us who was leading.

'Everyone has an opinion of the e-learning angle and the delivery of teaching in general. 'Too many cooks spoil the broth'. Everyone has a slightly different opinion, but ultimately, you as module leader are, ah have to, ah deliver the module. It has to be a compromise…. I think your role became more transitional, it was not clear cut technical. It was mutual/dynamic.'

This theme broadly encompassed our motivation for the module. It was clear that it was highly externally motivated, and driven by politics.

'I think it was a push form the school-From the top. We need to be capable of the school in this area. This whole module has been testing the water in the respect of politics…..This module is inconsequential. It is just testing the water. This module is used to shape other e-learning.'

There appeared to be reluctance and resentment directed towards the 'institution' for telling us to do this without giving us the support. Although, these feelings of lack of support did not disappear, there seemed to be realization that the 'institution' was right to suggest the module after all.

'There was a need to progress with this programme-not everybody involved thought it was a good idea. We know there was a lot of push from people within the school. I think it was definitely a formal push. Maybe the people on high were right- we should have done it. I don't think we understood the need. There weren't a lot of students coming forward and saying 'I want to do an online module' so- I think that is where the reluctance was from the programme because we did not see it was a need at that point. Now it has been done once.....'

Group Behaviours

Group behaviours included any interaction or behaviour that involved more than one person or affected more than one person. This included aspects around communication, teamwork and group conflict or difficulties working together. There was generally a feeling of poor communication within the smaller team, and within the University as a whole.

'We work differently, but there has to be recognition of what we are actually doing and recognition that you can't leave things and test things after it has gone live. I know we work differently, but there is no acknowledgement it is an issue. Nobody else thinks there is a problem. The people who matter, heads of school, did they care? As long as it went out- it does not matter.'

'We, as end users of the system, like this module, there needs to be some quality control or something. There were certain things that were- like things looking black and white - a lot of the things we asked for, just were, not done. Was it time or was it the fact that the difference in personalities when they thought we were just being picky. We wanted it to be right and they are hoping it functions the way it is.'

There was also a realization that we were not getting the help, direction or support we needed, so we had better resign ourselves and get on with it.

'.... caused a lot of discussion, rather than getting on delivering it. Lots of how we should go about it and how it should be delivered.....'

'Everybody likes to proffer an opinion, but when it comes down to it, getting the work done, it comes down to one or two individuals getting the job done.....'

Individual

This theme included internal attributes or actions displayed by individual team members and affecting the team. Trust and accountability were definite issues. These were difficult topics for the team to discuss openly. There was feeling of disappointment regarding the support we had, job habits and who actually cared about the students and the module. People not taking responsibility or not demonstrating accountability appeared to be prevalent and demoralising to the team.

'People are not personally responsible'.

'I have learned an awful lot about politics in the school. In terms of I naively think that everyone would want this to be successful and chivvy in.'

'If the module was a complete flop, it would be your flop. Although, you have been asked to do something and it is your responsibility, but you are 100% reliant on IT services to do what you need to do. So, if you are let down, I can't see how you could be held personally accountable, but um... It is difficult. I think yeah- this process has opened my eyes, really.'

'There is a cloud of people who can allegedly do things, but the reality is people need to be tasked to be accountable'.

Along with accountability, issues of personal trust were found within this theme. This was discussed in a positive and negative light. It was positive in that we were being

entrusted to get on with this module ourselves. The 'University' must have believed we were capable of success.

> *'It was regarded as our problem. I think the head of school has a huge amount of confidence in the IT team and their abilities'.*

It was also mentioned in a slightly more sinister note. Since we were so heavily reliant on technical support, and we have such limited knowledge, we have to trust what they were telling us. There was a clear relationship to accountability and trust.

> *'If you know more, it would reduce reliance and there would be less trying to pull the wool over your eyes. I don't know. How do we do that? If you had an action, you would make sure you did it. It is down to authority and working in teams and not feeling like...it is awkward is it not it...uh... It would be, to me, a member of your team has not done something, and I would have to go and make sure they did something. We are talking about adults. It seems childlike to say- I need to say something to your boss to make sure you do something'*

4.8. Action

4.8.1. Staff or development perspective

Introduction

Using a combination of documentary analysis and staff interviews, I produced an explanation of the 'action' and 'inquiry' I performed related to the staff perspective. After the analysis of the above findings was complete, I needed to explain my actions and highlight the changes and significance to my practice (McNiff and Whitehead, 2009).

Identification of problems, gathering and interpreting data

This data demonstrated a slow and protracted action on my part and if I am honest, often inaction. I wrote the academic content and did not feel it was up to me to chase others concerning the major problems we had which included: communication, roles, responsibilities, and the interface. The earliest problems concerning communication were evident from the following comments minuted in the same meeting:

> *'**expressed concern at the lack of progress to date when the launch of the UTCE module is in January 2011'*

*'** were not aware that the new module was being advertised and that the first cohort was planned for January 2011.'*

Another problem concerned the interface. I did not have the technical ability, confidence, knowledge or positional power to make a decision concerning where it would be hosted. As the interface decision was dynamic and mercurial, I kept rewriting the content to suit the newest ideas from IT (I Started in PPT, changed to storyboard, rewrote it in flash, changed to text, changed to wireframes). Again, I stubbornly thought if the module was a disaster, I was not accountable as I did my 'academic' bit. I was not taking on a leadership role, and I was avoiding responsibility and accountability. This was an issue throughout the development; the other staff members thought I should be leading and was not. The problem of accountability was immense. Even after we formed a 'team', we were unsure of what we were doing, we had no experience from which to draw and as mentioned earlier had no formal strategy to follow. The latter documents and discussion with the staff demonstrated a change in the problems and barriers to the module. These final problems became very technical and specific.

Action

I finally faced these problems and identified I needed to take on a more managerial role and get help to sort out the technical issues. I contacted the head of school in November 2010 (two months before delivery of the module) outlining my proposed requirements requesting specific hours and support (Appendix M). I thought this would reduce issues with communication, roles, responsibilities and accountability.

Evaluation and Reflection

The staff member I requested was assigned by the head of school. The work and related documents became task focussed and one of the biggest decisions, the interface, was decided as soon as he came on board. I had requested the head of school to use his power. Originally, I did not think I was 'allowed' to email the head of school and make demands for support of my teaching. In the past, I was autonomous.

Next steps/Planning

The module was repeated again beginning January 2012. I spent hours reviewing and reflecting on the process and the data for this thesis. I planned actions, based on my first experiences including:

- Making a formal request to my DPD for additional IT resources outlining clearly what activities would need to be altered as the number of students accepted has been doubled (Appendix L).
- Requesting a clear indication of specific staff members and protected time. I had learnt from my experience the previous year how much work it would be and the need to start early and to clarify roles and responsibilities.
- Formally discussing with my DPD a flexible workload whilst delivering the module.
- Formally writing to my Head of School explaining the workload planning model I was asked to complete was based on traditional teaching and suggested modifications for an online model (Appendix M).

Overall, I had the confidence, experience and knowledge (which I was beginning to identify as power at that point) to make requests. Action research authors have discussed the importance of identifying and reflecting upon what I have learned undertaking this process. Unequivocally, the main thing I have learnt is this: If one does not have the power, either explicitly through formal job descriptions, or implicitly through knowledge and experience in this setting, it is difficult to accomplish a new initiative. Accountability of the team, and more humbling, of myself was essential before this module could be successful. To improve the process of DL we needed clear roles and responsibilities, protected time and to work together in communities with trust and accountability.

Triangulation

To add rigour to this inquiry, it was important to evaluate the quality of inferences from my results and integrate the different research perspectives (Tashakkori and Teddlie, 2003) through triangulation. Cresswell (2002) refers to this as triangulation, explanation and exploration, whilst Green *et al*. (1989) described triangulation, complementarity, development, initiation and expansion. Given this inconsistency in

the terminology surrounding methodological triangulation (Tashakkori and Teddlie, 2003), I have synthesised my reading and developed my own components for use in demonstrating triangulation in this inquiry. The components developed are: triangulation, complementarity and expansion. Drawing heavily on Greene *et al*. (1989), the following definitions were developed:

- Triangulation (T): uses two or more methods to explore phenomenon. The results of these methods converge or corroborate and it is a reconfirmation of another source.
- Complementarity (C): seeks clarification or meaning from different methods to complement a main theme. It has resonance with the primary source and theme, but adds a new dimension or information.
- Exploratory (E): seeks to increase the depth of inquiry, not clarify meanings. In this inquiry, different methods are used for different inquiry components.

Below, themes, data sources and quality of inferences are displayed in order to display coherence within my data analysis. They are primarily in chronological order (Table 11) and have been coded as primary (P) or secondary (S) suggesting:

- P- This data source is the primary provider of material to develop the theme. Additional data triangulated, complemented or explored the theme. This illustrates how different data sources combined to contribute to the development of themes.
- S-This data source was either complementary or exploratory and not the main source.

As Table 11 indicates, there was a great deal of feedback and feed-forward between the interviews and the documentary analysis in the development and strengthening of the key themes. The analytics either were the primary source or added to the depth of the themes and did not clarify meanings.

Themes Related to Staff Experience	Analytics	Documentary analysis	Staff interviews
Role and responsibility confusion and roles (tasks and changing nature)	S Exploratory	S Triangulation	P
Vagueness, unpreparedness		P	S Exploratory
Barriers, lack of clarity		P	S Triangulation
Involvement of the institution, hierarchies		S Triangulation	P
Unclear power structure		S Complementary	P
Progress and deadlines		P	S Complementarity
Communication habits	S Exploratory	S Complementarity	P
Patterns of work and work habits	P		S Exploratory
Change (planed, cultural, emergent)		P	
Practicalities (time, delivery, getting the job done) and Technological issues		S Triangulation	P
Influence (leadership, motivation, vision)		S Complementarity	P
Group Behaviours (teamwork, communication)			P
Individual (accountability, trust)			P
Time	P		S Complementarity

Table 11: Data methods and themes of staff experience comparing data sources and methodological triangulation

4.9. Student perspective

Student perspectives were collected from a combination of evaluations and interviews. I have presented the interview results first in detail, followed by the evaluation results.

4.9.1. Student interviews

Introduction

Using Nvivo, I coded the interviews and refined the results from 50 initial codes to 19. Using thematic content analysis, I grouped these codes into four major themes (Table 12.

Theme that emerged	Definition of theme	Codes making up the theme
Other participants	This encompassed anything that students said concerning other students. It could have been when others were contributing, identifying who other group members was, or how they reacted to other students. It was an external factor concerning another member of the group- including me.	Contribution of others Others in general Identification of others
Personal attributes or behaviours	This was an individual or personal perspective. It was usually something of an affective nature (motivation, fear, isolation). It was a personal view of what helped or hindered them, internally, in e-learning	Confidence, Motivation Isolation or working alone Facilitation or support Expectations
Value to individuals	This theme encompassed anything that the student thought was valuable to them or relevant to them as clinicians or teachers. It was focussed on the individual, but at a pedagogical level. It included personal examples of what was helpful and indications of things that were student or learner centred.	Examples or experience Theory/practice balance or relevance Learner centred or learner needs
Concrete issues	This was a more concrete theme and included comments concerning the layout, structure, timings and evaluation of the module. The actual layout and the technology itself were included in this theme.	Content, Structure, Time, Administration , Planning Evaluations, Technology More efficient use of technology in communication

Table 12: Themes and codes for student interviews

There was unquestionably overlap when I began coding the interviews to the codes I used in the analysis of the student evaluations that follow. I set the (very loose) interview questions after having analysed two cycles of evaluations. I know I was not without bias and I was aware of issues students had already flagged as difficult. This was practitioner research, done in practice and almost inevitable. I was also aware I might be missing avenues in the interviews due to the student feedback in the evaluation. My critical friend and fellow PhD student reviewed my interview questions and coding for both the evaluations and the interviews. (Having just completed an

analysis of 20 interviews, she was invaluable.) She flagged up one issue: that of expectations. I had missed it completely in the coding. This critical dialogue was essential for my development and validity.

4.9.2. Themes

The four main themes outlined and defined in Table 12 are described in more detail below.

Other participants

Participants initiated comments concerning the effect other group members had on their experience. This was not surprising, as the basis of my approach when writing the module was one of social constructivism and group work. Overall, there seemed to be an extremely positive group ethos. There were comments concerning difficulties 'getting to know' others early on and having confidence posting online. There was a definite desire to identify or be identified by others. Students made comparisons to the differences, and how different it was dealing with others in a face to face situation. None of these students had experienced DL, and it was not as easy transition.

> *'You would write something and people would take a bit to reply. You know, you think, when people don't reply, what are they thinking? Do they not agree with what you are saying? What's happening here?'*

> *'The lack of immediacy was the hardest thing about it- especially the first strand'.*

Although there was an initial hesitancy, the comfort and confidence within the group and within an e-environment appeared to increase as the module progressed.

> *'In the first strand, I did not really log back on too much, but the second and third strand, I was logging back on every day to see if people had replied to what I had said or added to it or added any interesting points…. you wanted to see what other people have said and reply to them'.*

The importance of other students appeared to be two-fold. There was an emphasis on the constructive nature and quality of postings from others:

> *'What other students wrote- there was no- I would never say there was any intimidation- there was no- I never felt stupid at all during this*

module. If anything, they all brought up some interesting discussion that made people contribute even more'.

'Everybody was very helpful and constructive-everybody came up with constructive comments'

There also appeared to be a pervasive social emphasis or positive reinforcement from the relationship with others*:*

'It is like when people use face book. It gets a little bit addictive. You want to go on and check what has changed and you get a variable amount of reinforcement. You go on and no one has responded, and you go on again and someone has responded or something has changed. It is a bit compulsive when you get into it',

'It was kind of like, I could only describe it to, when maybe, when you are on face book, you... Log on, and you see what others have commented to what you said, or things like that….. I know it sounds silly… It is kind of exciting to go back online and see if people have agreed or disagreed to it and praised it or thought of other ideas or criticised it. It was always quite exciting-

This social aspect within a group appeared essential including the suggestion of having a:

'.. doctors mess or a student room and just have a chat about what is going on or problems that you had- more of a social aspect to it, without the thought of what I am writing down here is going to be documented forever, a little less permanent and a little more informal. Learning like this is like learning a new etiquette'

*S*eeing what other people said, and being seen to contribute was consistently highlighted. A second major aspect concerned the contributions by me. Following Gilly Salmon's model, I was involved, responded quickly and tried to be as inclusive as possible (Salmon, 2008). There were several comments about the speed and frequency of my facilitation as well as the facilitation itself:

'You saw links between our posts that maybe we hadn't picked up on and I found that the most useful thing. We were all talking along one discussion forum, but making our own comments on the topic, but you picked out the patterns between what we were saying that none of us could have done and I found that was useful. Giving my opinion and then later seeing that it does match this, or it doesn't match this. You

know having analysed things a little more deeply that on the face comparisons'.

Personal attributes or behaviours

This theme represented the individual experience. It involved emotions, the affective domain and anything that was an internal process to the student. The majority of the students expressed fear, isolation or lack of confidence. This ranged from a fear of social isolation:

'I didn't want them to ignore me- I have never got involved with discussion forums-I always felt a bit anxious about them and I wanted to be in the loop and people wouldn't forget me. I had the fear people would not go back…to answer questions';

to that of cognitive ability or knowledge base:

'*In the first strand, I was a bit out of my depth- then I started reading and building my knowledge up'*.

Trust and having a social aspect to the discussions appeared imperative:

'I like it when other people gave personal information- I found that comforting….I found I could communicate with them and felt more of a connection with them'.

Being, feeling and contributing to part of the group were all personal and motivating factors for these students. There was a definite desire to continue and not let others down as the module progressed.

'As the strands went on, I felt more of a responsibility to post-because everyone was posting and contributing and discussing. I felt more responsibility to post and participate- to the group.'

The group support and interaction were essential as one student elaborated *'The discussion forums were the crux of the motivational aspect'*. However, in the interviews, I asked each student if they had any contact (email/phone/face to face) with other students OUTSIDE of the learning spaces or discussion forums. None of them had. So, the group was important to them, but only within the parameters of the module.

My role played a part in their behaviours, too. I put hours of effort into this module, and sincerely cared about the experiences the students were undertaking. This affected the students:

> *'I was motivated by-the honest answer is it was a two way process. It was clear that a significant amount of effort had gone into the other end- in some ways it is almost, well, effort breeds effort. You get out what you put into the system. You had put in a lot of effort; therefore, it seemed appropriate and spontaneously generated effort at the other end. The interactivity encouraged me to contribute.'*

Value to individuals

This theme emerged out of discussions around the relevance and learner centeredness of the module. The comments concerning relevance invariably related to the learning medium, not the content.

> '*It is relevant- we do so much online learning at work- that is the way it is going'*

> *'Seeing the potential of what e-learning could be makes you more critical of…what might be out there'.*

One student spelt it out for me:

> '*The e-learning experience more than the content was relevant'.*

The flexibility of e-learning was important:

> *'What really interested me about it was it was just there- all the time. It was fascinating.'.*

Although this flexibility was attractive in the beginning, it was also an obvious difficulty, and time was a major issue for every student.

> *'I didn't realise the importance of scheduling time on the module…. Thinking about the benefits of online learning, I was thinking, well its flexible, I can do it whenever I want. I am bound to find the time somewhere- and of course you don't do you as you have other things to do with that time. You end up squeezing it in where you shouldn't and your wife says 'what about me'? That is one of the problems- makes you realise you have to set aside time for it.'*

'Time management was the thing I found hardest. For the other modules, I booked study leave, I booked time off work, whereas with this, I thought I could fit it in- and actually- it was quite time consuming- really and I had not really factored that in. My preconception was that I could fit it around the other activities I do and it was quite difficult to do that. .. I had not realised what the time the commitment would be and I had not formally built time into my schedule. I had thought I would fit it in one way or another. If I was to do it all again- I would set out with the idea that I would actually block time out to work on it. I would have tried to take a half day or day off for each of the strands to do it.'

Concrete issues

This theme included more tangible issues that were external to the student and included more administration, technical issues or structure.

Once again, time was a major issue. There was overlap between time in this theme and in the 'Value to individuals' theme above. Time, in this theme was less personal, and more technical.

'Monday was not a great day. It would have been better to open on the weekend so you could have a little look at it before work happened on Monday. That would have been a massive benefit to me'.

Comments concerning content and the technical aspects were minimal, but included comments like:

'The site and content was pretty straightforward. And Module was friendly. I did not have any difficulties with the content or assessment. The instructions were clear and I could follow them.'

The students appeared tolerant of the evaluation requests and, interestingly, once again, the opinion of the group mattered, it was not just an individual exercise:

'I suppose the reason why we got the evaluations is because this is the first time this module has been done. It did not take much time for me, so I did not mind it. The action list made a difference- the suggestions other people came up with were pretty interesting.'

4.9.3. Student Evaluations

Introduction

The evaluation questionnaires were sent out via Survey Monkey after each strand and after the final submission (Table 13).

Evaluation	Sent	Responses
Strand 1	Feb 2011	8/8 =100%
Strand 2	Mar 2011	7/8=88%
Strand 3	April 2011	8/8=100%
Module end	May 2011	6/8=75%

Table 13: Response rate to student evaluations

Although most of the student evaluation data was collected and analysed prior to the interview data, for coherence, I addressed it last. The nature of the evaluations and the data was geared towards action and improvement; it was transformational and systematically influenced new developments for me as a practitioner (McNiff and Whitehead, 2009). As outlined above, this evaluation data was collected and analysed four times during the module and the results were catalysts for change as they were acted upon iteratively.

As part of my practice, I analysed the evaluations, reviewed problems, tried to find solutions and made changes. Working and navigating in my practice, I was vigilant that this was both formal research and me trying to improve my practice. The results are presented and explained below.

Using Nvivo, I coded the evaluations and refined the results from 26 initial codes to 14 (Table 14) which were analysed and grouped into three themes.

Theme that emerged	Definition of theme	Codes making up theme
Individual behaviours and processes	This theme encompassed issues that were complex and personal. It involved personal internal processes and was related to individual behaviours, attributes or interpretations.	Confidence Identification of others Isolation/working alone Learner centred/own learning needs Theory practice balance /relevance Individual use of technology in communication Other's contributions
Technical or practical issues	This theme included codes that were functional or technical in nature. They were concrete and tangible and geared towards practical and quantifiable issues.	Time Reading/accessing resources Experiences/Examples Technology itself
Structure and Administration	This theme included anything controlled by external practice. These may have been complex issues, but were processes or issues that were influenced or controlled peripherally and external to the individual students	Facilitation/ Staff Support Administration/structure Evaluation

Table 14: Themes and codes in student evaluation data

There was significant repetition with this analysis and the previous student interview data. This included: technical issues, time, isolation, administration, structure, facilitation support and identification of others. The group as a whole seemed to work together sharing a feeling of accountability and responsibility for each other's learning. There was a sense of potential isolation, fear and lack of confidence. Students did not want to be the first to contribute, and were not sure what the social rules were. This was a new learning environment to every student, so it appeared a normal 'culture' had to be developed.

Triangulation

As in the staff section (Table 11), methodological triangulation was important for the quality of my results (Tashakkori and Teddlie, 2003). Below, (Table 15) demonstrates the major student themes, data collection sources and triangulation. There was a great deal of feedback and feed-forward between the interviews and the evaluation in the development and strengthening of the key themes. The analytics did not add depth or clarification in these themes.

Themes related to student experience	Analytics	Student interviews	Student evaluation
Others (contribution, identification) and Individual behaviours (confidence, isolation, other's contributions)		P	S triangulation
Personal attributes (confidence, motivation)		P	S exploratory
Value to individuals (relevance, learner centeredness)		P	S exploratory
Concrete issues (content, structure, technology)		S exploratory	P
Structure (facilitation, administration)		S complementarity	P
Individual behaviours (confidence, isolation, other's contributions)		P	S complementarity
Technical (time, technology resources)		P	S triangulation
Time	P	S complementarity	S exploratory

Table 15: Data methods and themes of student experience comparing data sources and methodological triangulation

- **Triangulation:** two or more methods used to assess one phenomenon. The results of these methods converge or corroborate and it is a reconfirmation of another source.
- **Complementarity:** seeks clarification or meaning from different methods to complement a main theme. It has resonance with the primary source and theme, but adds a new dimension or information.
- **Exploratory:** seeks to increase the depth of inquiry, not clarify meanings. In this inquiry, different methods are used for different inquiry components.

- **P**- This data source is the primary provider of material to develop the theme. Additional data triangulated, complemented or explored the theme. This illustrates how different data sources combined to contribute to the development of themes.
- **S**-This data source was either complementary or exploratory and not the main source.

4.10. Action

4.10.1. Student or delivery perspective

Introduction

The interview and evaluation results have been combined to demonstrate an action cycle representative of the student experience. Once again, I needed to explain my actions and highlight the changes and significance to my practice (McNiff and Whitehead, 2009).

Identification of problems, gathering and interpreting data

As the evaluation data was cyclical and collected four times (**Error! Reference source not found.**) I put the data into chronological order, facilitating identification of problems or barriers, actions and evidence. There were general barriers the students had concerning fear, anxiety and isolation.

> *'I was not sure what to do and not very confident that I was doing the right things or anybody was out there'.*

As these were problems, they had with the environment; they are problems I had with the module. There was a general feeling of being ill prepared for the time requirement. Initially, I was reluctant to give timings on activities as I did not want to influence students' expectations.

> *'I think some indication of the amount of material involved in the strand would be useful at the outset'*

Students did not seem to factor the time required, or how they would find this time, into their expectations.

> *'…tough to find the time. I had not realised what the time commitment would be and I had not formally built time into my schedule. I had thought I would fit it in one way or another'*

Identification of others was a problem and all students wanted more, not less ability to identify each other.

> *'Photos of the persons commenting on the discussion would help visualise the conversation'*

'Some kind of colour coding for each participant as few are posting without names (difficult to know who is on the other end)'

The students appeared aware that as the module went on, my role as a facilitator would decrease, but still found this slightly uncomfortable or unsafe.

'I know in strand three, we were expected to be more but it is tough to do maybe one more strand would do it!'

The problems or barriers identified above appeared to be of a personal/emotional nature (fear, isolation, confidence, time) or an external nature (identification of others, facilitator role, time). I have included time in both as it was a consistent and omnipresent issue.

Action

Instead of large reflective cycles of learning and action, as found in the staff development perspective, these cycles were much smaller, and perhaps more technical. After early feedback, I manually uploaded photos beside individual names. Although a relatively primitive method, it made a difference to students.

'I like the photos, what we did, - it gave context to peoples responses. I liked the fact that I knew what they looked like and stuff and having responsibility to the group'.

I also assigned colours and colour coded each learning space. This was time consuming for me, and again, a very primitive approach, but it was valuable to the students.

'Colour coding made it much easier to identify individuals' contributions'

I could do nothing to decrease the time students spent online, but trying to make timings explicit seemed to help. In the second strand, I added timings of each activity.

'The time indicators in this strand were very helpful for planning'

The module was set up to promote student centred learning, social interaction, social learning and be a safe environment based closely on the theories of social constructivism and the work of Gilly Salmon (Salmon, 2008). Fear, isolation and lack of independence were all barriers the students identified to their learning. I made

moderations as the module went on to evaluate and address these issues. I was explicit about what the expectations were, that everybody needed to contribute and I tried to create a safe environment from the beginning. The initial barriers students expressed appeared to be somewhat addressed.

> *'I can hand on heart say this is one of the few times, I felt as if what I wanted to learn and how I wanted to develop, was part of learning'*

My goal was to do a better job and to improve. I believed it was imperative for students to think that, as educators, we cared and were listening to them. The evaluations were invaluable as I improved the module, and appreciated by students.

> *'Strand evaluation was definitely helpful. I looked forward to getting back the evaluation sheets with the comments on and the responses. Even thinking I am being listened to and you are taking on what I am saying- it made me fill out the other ones- but even to see how it was developing along the course. It was not a hassle for me to fill out the forms. I did not think oh my goodness another evaluation. '*

Large parts of the module appeared to be working well. However, there were several changes I hoped to make the next year. I created an action list (Figure 34) with actions I hoped to take. These were all points focused on improvement. This is what I planned to do, based on what I had learnt from my experience that, hopefully, improved my practice.

June 2011- Planning for next cohort of students
• Ability to upload avatars themselves and have these corresponding pictures when they contribute to discussion forums • As above but with academic staff • Meet the group information automated instead of manual compilation for me • Multiple choice questions automated instead of manual • Learning spaces- these won't scale up easily, and I think we were discussing new software. Depending on numbers, we might have to split people into two groups. • I believe new software is now available for delivering e-learning. I would need a demonstration and SUPPORT with this • Need to redo activity 4 in strand 1 • Upload all reading once it has been ok'd by authors/editors • Review all links, videos, etc. • Automate assessment submission process • Set up synchronous chat- link to activities • Include all timings for activities • Re-link all discussion forums and wikis (or whatever we are using) • Study guide/reading list etc. need to be taken down and revised ones uploaded (do this or show admin team how to) • Allow students access to last year's assessments

June 2011- Planning for next cohort of students
• Break down discussion forum into two groups if numbers get above 10 • Corresponding pictures on learning spaces • Collect data (back end) from multiple choice questions and feed back in strand 3 (to demonstrate computer generated feedback in use) • Create mailing list for everyone- general and esp. if they are split into groups.

Figure 34: List of planned changes for next cohort of UTCE (2012)

4.11. Chapter summary

Web analytics demonstrated a significant administrative and academic workload and changing academic roles as the module progressed. The technical role, although less taxing was also less predictable. Students and staff appeared to be contributing extensively outside 'normal' work hours. Significantly, students appeared to engage with the activities within the module. In the staff data, it was obvious there were conflicts. Change, working together, lack of accountability, vagueness, confusion in roles and lack of leadership or power were identified as problematic, or at least unclear. Student data highlighted the importance of working together, groups and the value of interaction. The significance of my role as facilitator was highlighted consistently. There were practical themes concerning technology and unequivocal data surrounding the issue of time, protecting time, and certain unpreparedness for the time and commitment involved.

In the next chapter, these results are discussed in relation to existing knowledge and the implications are discussed in a wider context.

Chapter 5. Discussion

'It is not enough for distance educators to be good practitioners' (Garrison *et al.*, 2003, p.113).

5.1. Introduction

One of the ways to demonstrate rigour and ethical coherence in action research is to demonstrate truthfulness, critical reflection, validity, transparency or reflexive critique (McNiff and Whitehead, 2009). I have tried to do that consistently, but at this point, I faltered. Was it possible to be too honest and too transparent? Should I nakedly expose my thoughts and writing concerning what I actually thought and did at this point or should I be more strategic? I decided to take the former path.

This is the most honest and authentic chapter I have written; it is the only chapter I have written that chronologically was in line with what I did. In the structure of this paper there is an introduction, literature review, and methodology and results chapter. This fits into the traditional thesis outline and as an academic submission. This is not how it was written. I wrote the methodology chapter first, then the analysis and results, followed by the literature review. Only this discussion chapter falls into place and was written in the order that appears within this submission.

The quote above was significant. I was just beginning this chapter when I read it and it was difficult to reconcile. After all, that was my entire intent: to be a good practitioner and improve. After copious reading and rethinking, the issue became clear. To be a scholar, a leader and have the ability to inform others, I had to demonstrate theoretical insight as well as provide evidence of my position as a strong, improved and innovative practitioner. I needed to provide a personal theoretical framework explaining my improved distance education practice. In considering this, two issues became apparent. Primarily and strategically, I had to provide coherence with my overall Pragmatic stance (as the separation of theory and practice was not necessarily a helpful distinction). Secondarily and authentically, my work had to demonstrate personal improvement, be informative and influence decisions other educators would be making on pedagogical, technical and administrative decisions. Within this chapter, I synthesise my roles and responsibilities as a practitioner of DL, followed by a personal framework of communities in both the development and delivery phases. Strengths,

weaknesses, action and recommendations are reviewed at the end. For orientation there is an outline of this discussion chapter (Figure 35) with delivery issues consistently green (moving forward) and development issues consistently amber (planning).

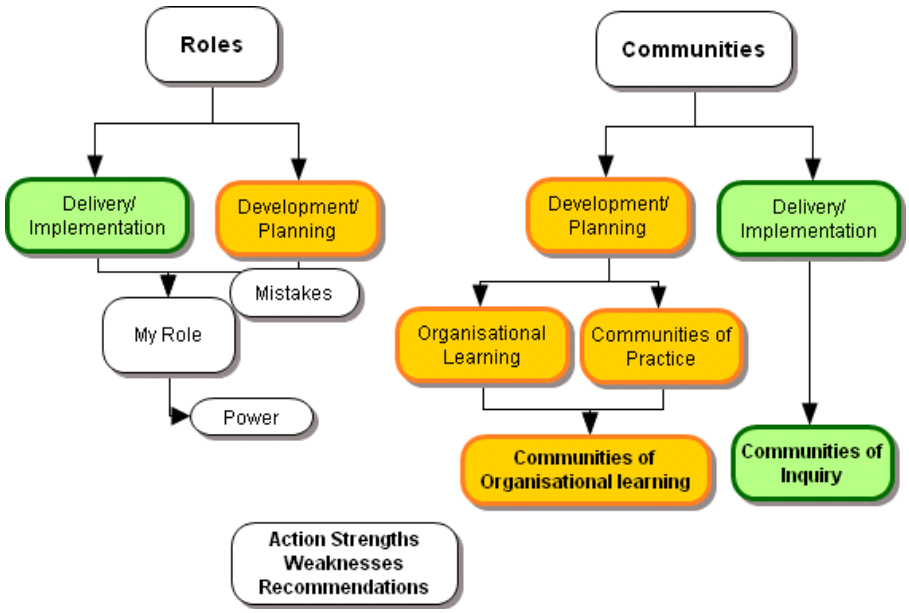


Figure 35: Overview of discussion chapter

5.2. Roles

5.2.1. Delivery

When I was first asked to develop this module, my focus was on 'How do I teach online?' Upon reflection, 'teaching' online was the role for which I was probably most prepared. My role was knowledge expert or teacher, facilitator and moderator. The real difficulties were in other roles that implicitly came along with this endeavour and the related ambiguity. These roles had nothing to do with the 'teaching' of this module, but with development.

5.2.2. Development

Changes of roles and identities for academics in DL were well supported in the literature (Beaudoin, 1990; Alexander, 2001; Briggs, 2005; Hovenga and Bricknell, 2006; Hanson, 2009) and consistent with my experience. In reviewing my results, the most overwhelming themes were that of roles, responsibilities and related changes. Who was doing what and whose job was it to make people accountable? This was seen in staff comments such as:

'I think your role became more transitional, it was not clear…it was mutual, dynamic'

Was I responsible for chasing others or solely for writing the academic content? Was it clear to the rest of the team? I believed I was responsible solely for the academic content. The rest of the team thought I should be chasing others and directing this project as a program manager. This was evident in the staff interview:

'We are here to deliver what you need, so if we are not doing that, then it is your job, I mean, you provide the direction really'

As discussed earlier, the context of the university was key. It is a complex organisation with boundaries, traditions, beliefs and culture that was implicitly embedded in our practice (Becher and Trowler, 2001; Silver, 2003). However, with distance education, traditional beliefs and workload are inadequate and inappropriate (Hovenga and Bricknell, 2006). Distance education became a 'disruptive technology' (Christensen, 1997) within our organisational culture, causing us to do things in a fundamentally different way . Christensen (1997) and Moore (1997) both discussed how the goal of organisations should be to cope with the disruptions of DL by aiming to create a 'sustaining technology' representing an improvement on current practices. One key strategy for educational organisations to achieve this, with minimal disruption is to learn from the early adopters mistakes (Moore and Anderson, 2007).

Mistakes and conflict

As an early adopter, I definitely made mistakes and was not prepared. My self-identity as an autonomous lecturer and academic had grown and my biographical narrative was constructed over time (Giddens, 1991). Historically, all teaching decisions I made had been local and influenced by my personal beliefs and educational values. Although this process was responsive to changing situations and events, once the reality of delivering DL became apparent, my personal narrative could not be sustained and I was overwhelmed by external events (Hanson, 2009). With DL, senior administrators have become focused on DL for reasons other than educational implications (Garrison, 2000) which has led to internal conflict within the higher education environment (Garrison and Anderson, 1999). Moreover, the actual impact of DL initiatives on academic identities has been limited to enthusiastic innovators and approached from a

managerial perspective that further contributes to the suppression of the lone academic voice (Hanson, 2009). Alarmingly, with failed or delayed implementation of DL initiatives, there is a tendency in the managerial discourse to blame the individual academic for ill will, indolence, ineptitude or indiscipline (Knight and Trowler, 2002). Interestingly, this was one of the most fundamental questions I asked myself during this module. If this module was a disaster, was I at fault? It was also an issue for the rest of the team:

> *'If the module was a complete flop, it would be your flop. Although, you have been asked to do something and it is your responsibility, but you are 100% reliant on IT services to do what you need to do. So, if you are let down, I can't see how you could be held personally accountable, but um... It is difficult. I think yeah- this process has opened my eyes, really.'*

It slowly became obvious I was responsible for the success or failure of this module and I would be held accountable. I was given no increase in pay, no overt line manager status and I was told **how** to teach by senior administration for the first time in my academic career. I was reliant on others to 'deliver' while my independence and autonomy was eroded. Technology has changed the roles of both universities and academics (Briggs, 2005; Hovenga and Bricknell, 2006) and the roles of academics are being threatened (Peterson, 2001). For academics, freedom is being threatened by the drive away from autonomous decisions and academic standards (Peterson, 2001) towards the new pressure of online delivery (Briggs, 2005). This was certainly my experience and my role was unclear.

My role

My personal narrative evolved over time and until recently, there was a relatively clear view of what that role encompassed. Briggs (2005) specifically addressed academic competencies in online initiatives and warned organisations must define roles and develop frameworks to address the organisational and personal development challenges introduced by DL. This was not done by me or the organisation. I felt a total ambiguity in what I was doing, and my responsibilities. Changes in roles for academics can lead to both role ambiguity and conflict. This ambiguity arises from a lack of clarity in duties and responsibilities and authority (Briggs, 2005). Clarity in roles gives a sense of belonging and continuity and the loss of it leads to organisational problems and job

dissatisfaction. However, a competent online teacher is a new and different role for academics and the competencies required are different (Goodyear *et al.*, 2001). Until now, I had not identified what these roles or competencies were; I did not have the knowledge or experience to define them. The defining feature had nothing to do with technology, or pedagogy. The competencies I was lacking and ill prepared for were those of a programme manager. The rest of the team clearly identified they thought this was my role and I did a poor job of it. Even after the completion of the module, it was not clear to me as was seen by my comment in the staff interviews:

> ***[Interviewer (me)]*** *'If I had to do it again...it is not about my confidence in technical or academic capabilities, but in my managerial…position'*

One of the contributing factors to this role ambiguity was one of power.

Power

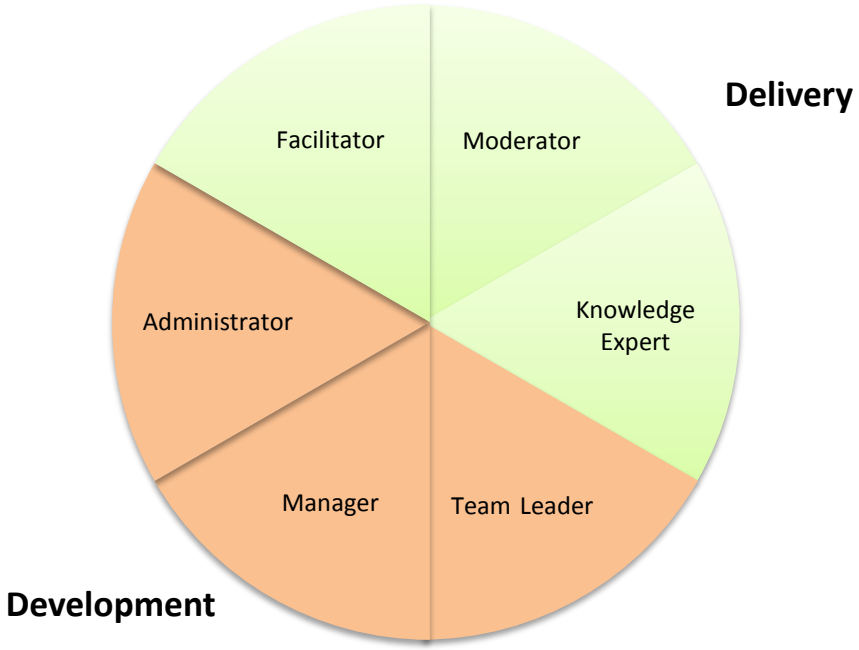
Although not the focus of this paper, power within this experience was paramount and I felt essential that it was at least addressed. With my 'developing the module' role came little explicit or traditional authority. I was suddenly responsible for the managing and leading of a 'team', yet I was given no explicit power, nor did I seek positional power. I did not see 'program manager' as my responsibility. Our 'team' existed within the rigid structure and hierarchy of the University and it was obvious I was not in command, but this positional or traditional power was lifeblood to other staff:

> *'There needs to be someone influential enough to take things forward. We don't have that positional power'*

Working within the tradition of the University, we appeared to need these formal structures or boundaries of influence and power. However, with the introduction of DL a fundamental power shift has resulted (Holley and Oliver, 2000; Laurillard, 2007); this was a defining feature of my experience. My role was totally transformed and I was expected at the local level to take on a role of power or authority. I did not understand this initially. When I did, I still stubbornly refused to 'programme manage'. Regrettably, this was never made explicit to the team.

5.2.3. Summary Roles and Responsibilities

After reviewing the literature and results and synthesising this through a lens of my personal narrative and experience, I have created a model and explanation of roles and responsibilities I undertook whilst developing this module (Figure 36).



Role Identified	Responsibilities
Facilitator	Enabler, instructor, assessor, collaborator, supporter, contributor
Moderator	Organiser, supervisor, planner and monitor of learning processes
Knowledge expert	Subject specialist, acknowledged expert ad information shaper
Administrator	Resource allocator, resource planner, monitor, coordinator
Manager	Communicator, expert, organiser, supervisor, supporter, evaluator, coordinator
Team Leader	Visionary, planner, securer, course developer, curriculum planner, marketer

Figure 36: Model of roles developed for academics involved in distance learning

My traditional role as a lecturer was relatively clear to me, yet became problematic in the development of this module. Arguably, many of the roles of traditional teaching are easily transferred into an online environment (Gold, 2001). However, new skills (Twomey, 2004), changing responsibilities (Hovenga and Bricknell, 2006) and altogether new roles are at the heart of academic conflict (Briggs, 2005) with DL. These changes include: using new instructional strategies, more precise planning, a need for

increased 'outside' support (Cravener, 1999), a shift from the model of teacher from the exclusive source of information to being one of a resource, (Hovenga and Bricknell, 2006), increased requirement of team building skills (Briggs, 2005) and leadership (Beetham and Sharpe, 2010). Furthermore, teachers come to conventional HE with well-defined roles and expectations. Once DL is introduced, educators are often unable to rely on predefined roles and behaviour expectations (Hovenga and Bricknell, 2006). Given the above, unsurprisingly, roles responsibilities, and accountability were all problematic in the module development. However, we completed the project as a team delivering a distance module that had 100% pass rate, 0% attrition, students demonstrated statistical 'engagement' with the activities using educational strategies in which I firmly believed. How did we, as a staff group, navigate to success through this process of 'disruption'?

I believe we managed through learning and working in communities.

5.3. Communities

Based on a theoretical framework using **communities** as a practical tool to improve practice (Holley and Oliver, 2000), in the second part of this discussion, I address the changing roles of academics within these communities (Figure 37).

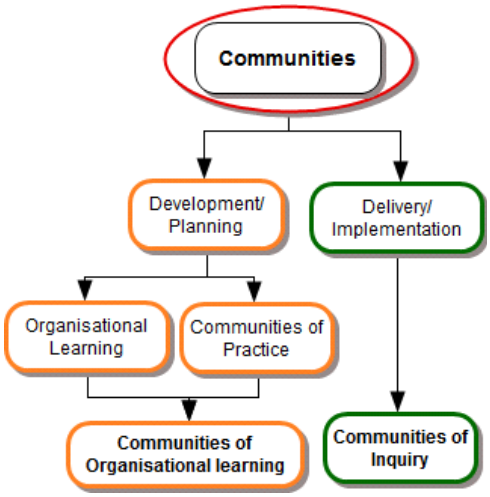


Figure 37: Overview of communities in discussion chapter

Introduction

There were two main activities or phases in this research: the development of and then the delivery of DL. Similarly, there were two main groups that were involved: staff involved in the development and students involved in the delivery. I was a member of both of these groups or **communities,** although my role was very different.

Interestingly, university is derived from the Latin *universitas magistrorum et scholarium*, roughly translated to *community of masters and scholars*. The paradox of using this anachronism to describe post-industrial education did not escape me. However, there was something fundamentally solid in the etymology that incorporated the elements of these two communities: that of masters (or staff) and that of scholars (or students). The University was the context in which this module was developed and delivered and within the university there were two communities: developmental with staff (or masters) and delivery with students (or scholars) (Figure 38).

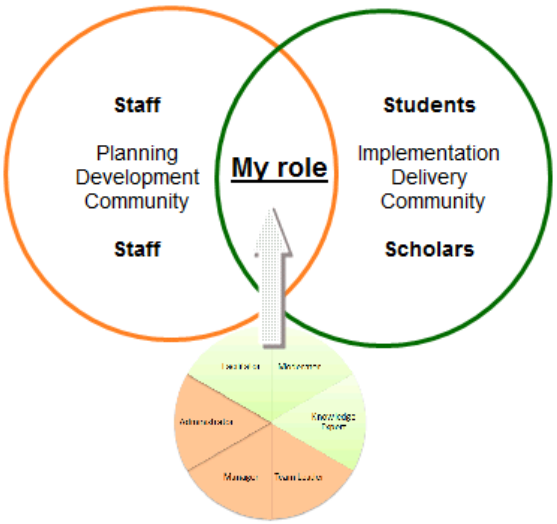


Figure 38: Communities in which I learned and worked

5.3.2. Development Community (Staff)

The development team consisted of a technician, administrator and an academic (me). This was a totally new initiative and we had to work, but more importantly **learn** together within the organisation. We were an informal 'team' working together for a common goal, but within a structured organisation. Did we develop and function as an informal community of practice to work and learn together? Alternatively, as part of the university organisation did we undergo a rapid process of formal organisational learning?

Organisational Learning

In a brief review of literature, three classical observations are described to explain organisational learning (Levitt and March, 1988). Primarily, organisations are based on routines. Organisational action is initiated from a logic of appropriateness more than

intention. Basically, procedures within the organisation are matched to situations more than to calculated choices. The second observation is based on past organisational routines and is more about interpreting history that anticipating the future. Finally, organisations are oriented towards goals. Organisational learning is governed by abstract rules and procedures, not through social experiences of the individuals (Levitt and March, 1988). Instead of learning at work being informal and natural, the trend is towards an explicit and relatively structured activity clearly organised and described through systems (Boreham and Morgan, 2004).This environment encourages incremental development of established and ingrained practices. In our case, we felt these rules and procedures were necessary:

> *'You need to put things in place. You put procedures in place..... I avoid personal conflict by following rules'*

However, we had no established practices or routines and the normal processes of module development were disrupted. Therefore, this incremental organisational learning had difficulty flourishing. There were obvious tensions in the group as we tried to conform to the institutional procedures and systems that were set out for us:

> *'Trying to coordinate something….to do with formal communications and things... I think there is something that doesn't fit with that model'*

Literature abounds concerning formal organisational learning and although some aspects of it were likely occurring, I agree with Boreham and Morgan (2004) who criticised this routine-based target oriented view of organisational learning due to the neglect of the socio-cultural analysis of learning itself. How people actually work often differs fundamentally from organisational charts and job descriptions (Brown and Duguid, 1991). The relationship between how people learn at work is an even more difficult relationship. Formal descriptions of 'work' and 'learning' are often abstracted from actual practice and are conventionally thought to conflict with each other. Therefore, if this formal organisational learning did not explain how we worked together, learned together and completed this module, what did? I think there was something more organic or anabolic taking place. We began to form a community and work and learn together. We began to **learn** together and function as our own small

group within, but distinctly separate from the larger organisation as we could not flourish within abstract rules and procedures.

> *'It isn't circumventing, but it is out of necessity that the formal structures and procedures break down under pressure….'*

Part of improving my practice became working together and as a result learning in our community, regardless of the conventional structures around us. Brown and Duguid, (1991) suggested that '*conventional descriptions of jobs mask not only the ways people work, but also significant learning and innovation generated in the informal communities-of-practice'* (Brown and Duguid, 1991, p.40).

Communities of Practice

A community is a social organisation at heart. There is an implication of shared behaviours, beliefs, assumptions and even language that constitutes the social fabric that connects people. Similarly, a community of practice (CoP) describes a group of people who share an interest, craft or profession (Lave and Wenger, 1991). CoPs embrace the sharing of knowledge across organisational boundaries (Allee, 2000). The relevant word to my experience is **share.** Through the process of sharing experiences and information, we learned from each other and developed both personally and professionally (Lave and Wenger, 1991). CoPs are informal groups of people bound by shared expertise and passion for a joint enterprise (Wenger and Snyder, 2000).These are not structured teams but informal, dynamic and self-organising. A team, working towards a common goal, has set memberships, assigned and unchanging roles and regular scheduled meetings. In a CoP the timelines, aims and the community itself may not be consistent although they share common objectives. We experienced the shared objectives of these CoPs, which was not to work towards formal deadlines or goals, but towards the objectives of the community itself:

> *'... I think in the end it comes down to a small group of individuals working together, getting these things off the ground....'*

A CoP shares common interests, the desire to learn from and contribute to the community. Using shared dialogue, not organisational structure, we functioned as a community. It was social engagements that allowed learning to occur, not the

cognitive processes and conceptual structure (Lave and Wenger, 1991). We experienced this process:

> *'I thought this module would be more about the technical side, but it was more about working relationships'*

CoPs cannot exist in the abstract as they revolve around people with common ideas and mutual accountability and therefore require engagement (Wenger and Snyder, 2000). Our experiences concerned practice, not abstraction and our ideas and actions were reflected in our engagement.

> *'We can go so far……..there has to be involvement form a learning technologist, straddling the technology and learning. I had no knowledge in that area. I am reliant on that information coming to me from you'*

By illustrating the power of these informal relationships, this sharing and validation of knowledge may be most responsible for performance in an organisational setting (Brown and Duguid, 1991; Lave and Wenger, 1991). This was clearly a contrast to the organisational learning outlined earlier. In CoPs learning is a relational practice in the workplace that is derived from the social experiences of those involved.

How were we learning and improving?

Although there was clearly evidence that we were learning and forming a CoP, there was still tension with this informal approach. This tension appeared to suggest we needed or were lacking an organisational structure to our process:

> *'If we were doing this again…we would ask for a meeting…so everyone was aware. It was too much on a friendly, sort of, it was never that formal'*

Organisational learning is governed by abstract rules, formal structure and procedures. Conversely, CoPs were introduced and pioneered as a social learning system based on informal structures, self-organisation and joint enterprise (Lave and Wenger, 1991). Were we undergoing organisational learning whilst developing this module? We had a very structured background (the University) in which to work, but we felt tension and fought this structure. Was I a member of a Community? I believe so. Was I a member of a CoP? Yes, but with certain caveats. After revisiting my analysis, I realised I was involved in a combination of both. By nature of our shared interest and experiences

and desire to contribute we did form a CoP. However, the social experiences we had were not always positive or functional because we appeared to want or need structure and systematic routines or procedures. This community was a group of us, working within a structured system with definitive deadlines and planned goals. However, we had no past routines and we relied heavily on the social experiences of individuals and common goals. If neither community had a chance to flourish, how was the module a success? I believe we navigated and learned using a combination of both informal CoPs and formal organisational learning. Since neither of these models or theories fit my analysis or experience, yet both were influential, I have taken the pragmatic decision to define my own community based on this literature, my experience and literature previously addressed in chapter two concerning change. I have developed a definition to describe this process: this process of working and learning through Communities of Organisational Learning (CooL) (Figure 39).

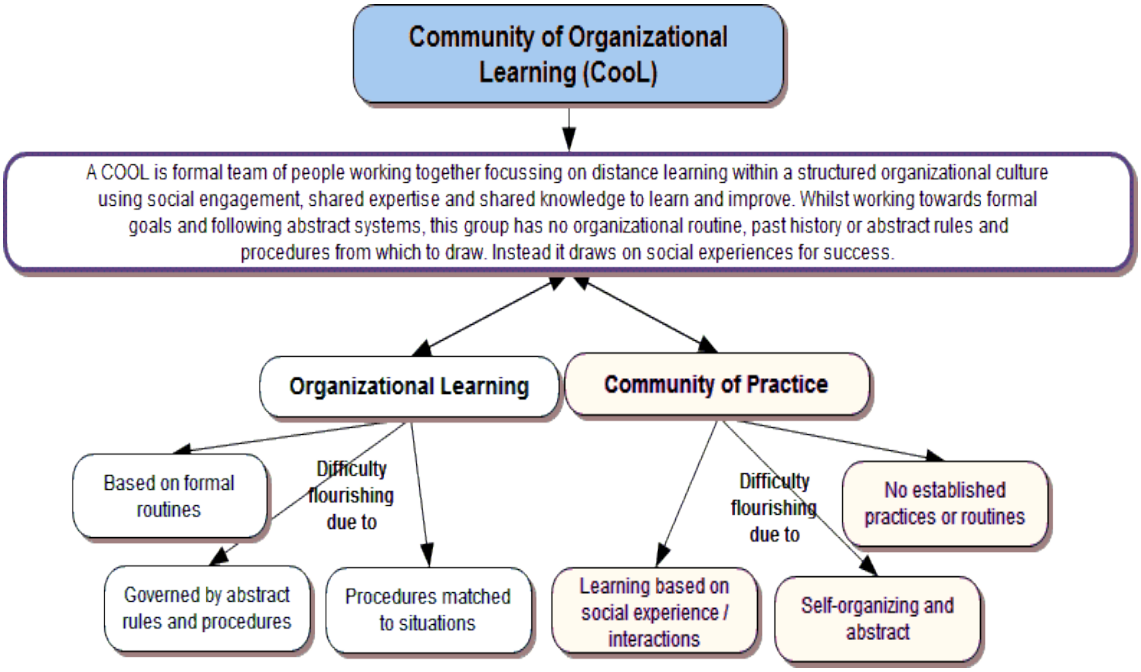


Figure 39: Visual representation of a CooL, drawing on formal organisational learning and communities of practice.

The model of this community, developed through practice, has helped me understand our change process by highlighting, not ignoring tensions to each type of learning at work. Clarifying and defining new models of working and learning in higher education has been insufficiently resilient in the face of change (Briggs, 2005). However, as mentioned earlier, roles of academics (Briggs, 2005) and the environment in which they are expected to work (Laurillard, 2007) have changed. Therefore, we should be

clarifying roles, and developing frameworks for optimal performance within the institution (Briggs, 2005). As discussed in the literature review, Moore (2007) explained that both the culture and structure of higher education will continue to be threatened by the emerging organisational models of DL. He suggested institutions should plan processes that assist in assessing options and implementing new program directions. Schwahn and Spady (1998) agreed and proposed that structural and cultural change has been viewed by many lecturers in higher education as largely beyond their control. I believe that as an early innovator I can influence change. By developing a model and clarifying expectations, the chaotic and complex change process in HE due to technological initiatives (Fullan, 1999) can be minimised. Technology, and the resultant changes are both social and cultural phenomena (Beetham and Sharpe, 2010); they must be recognised and addressed at the social and cultural levels. I do not naively believe the structure of HE and entire organisational culture is changeable at the local level, but to revisit DeFreitas (2005) I believe negotiation between individuals concerning practice is key. This social discourse, negotiation, and identification of processes involved in a CooL may help academics who are presently ill-equipped dealing with the gaps in roles and competencies online demands have presented (Briggs, 2005).This CooL model will be informative to practitioners at the local level and those responsible for formal organisational structures and resources concerning potential hurdles, tensions and difficulties in DL.

5.3.3. Delivery Community (Students)

Community of Inquiry

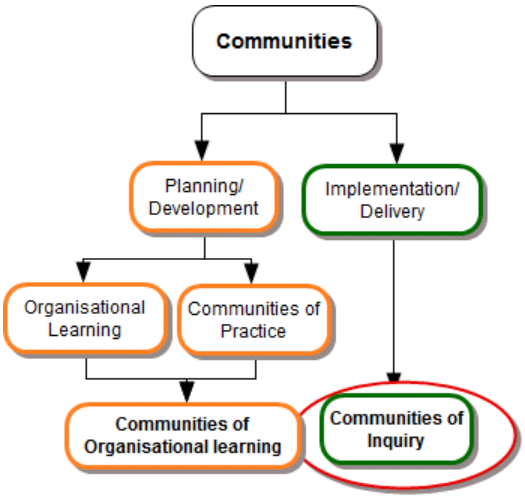


Figure 40: Orientation of communities of inquiry in discussion chapter

In the literature review, Transactional Distance Theory (TDT) provided a broad framework for structuring DL, creating meaningful interactions and facilitating learner autonomy (Moore and Anderson, 2007). One assumption I have made is this: DL intended to achieve higher-order learning skills must be embedded in a community of both teachers and learners. My assumption was consistent with Dewey (1998) who described education as collaborative experiences. Effective DL was not independent, but a collaborative-constructivist learning experience within a community of inquiry (Moore and Anderson, 2007).

HE has consistently viewed **community** as essential to support collaborative learning and the asynchronous nature of DL has focused attention more overtly on the issue of community (Moore and Anderson, 2007). How this community can be created online is difficult (Garrison, 2007) yet essential as sense of community is significantly associated with perceived learning (Rovai, 2002). One model to substantiate the transactional nature of DL experiences is the Community of Inquiry (CoI) which is consistent with Dewey's work on community and practical inquiry (Garrison, 2007). Historically, 'community of inquiries' are not new and seminal philosophers including Dewey and Peirce have addressed them. However, I was interested in a CoI in a particular context: an online environment. Randy Garrison (2007) developed his model of CoI specifically within an online environment as a conceptual framework to help educators design and support critical thinking in DL (Stodel *et al.*, 2006). Based on a model of critical thinking and practical inquiry, Garrison suggested learning occurred though the interaction of three 'elements' that were related: teaching, social and cognitive presence (Figure 41) and proposed a number of categories and indicators for each 'presence'.

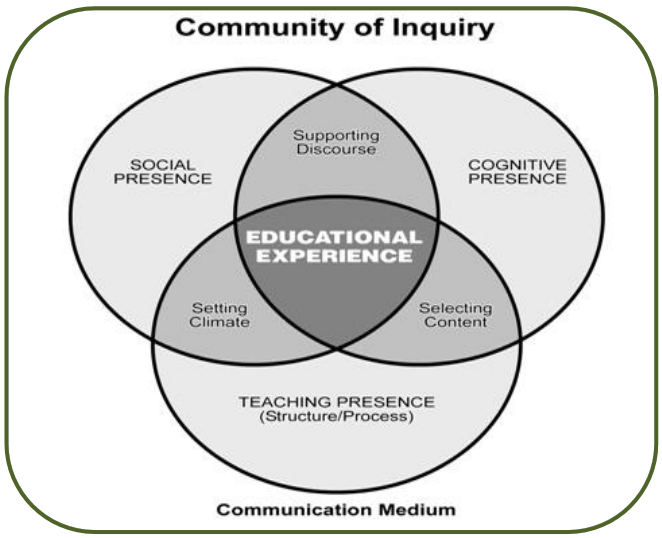


Figure 41: Community of inquiry model in distance education (Garrison, 2007)

Teaching presence deals directly with the design, facilitation and direction of both the cognitive and social processes. The structure and overall purpose of the teaching presence is geared towards personally and educationally worthwhile learning outcomes (Garrison, 2007) for students. Social presence is the degree to which all aspects in the community (both students and teacher) project themselves socially. It is the degree to which members in a distance environment feel socially and emotionally connected. Finally, cognitive presence is the exploration, construction, resolution and confirmation of understanding using both collaboration and reflection. Garrison (2007) suggested that only through interaction and conversation can members achieve resolution.

Deweyian link

As seen in the literature review, TDT was heavily influenced by Dewey's work. Unsurprisingly, the influence his early work has had on the development of CoI is unequivocal. Dewey (2007) believed that inquiry was a social activity and was the essence of an educational experience. He reasoned that a community was more than an aggregate of persons. In a genuine community, people communicate their goals, revise them and work collectively to achieve them. They engage with each other in a critical process of personal and social reconstruction (Dewey, 2007) by responding to and building on each other's ideas (Darling, 2001). Swan, Garrison and Richard (2009) expanded these ideas claiming '*the two constituting notions of community and inquiry form a pragmatic organising framework of sustainable principles and processes for the purpose of guiding online educational practice* (p. 45)'.

Swan *et al*. (2009) suggest that Dewey's practical inquiry model operationally defined cognitive presence in the CoI framework as his original model included: triggering event, exploration, integration and resolution. This links closely to ideas of Garrison (2007) including: information exchange, exploration, integration and connecting ideas.

Re-analysis

Reaching this point, I was tempted to recode the student interview and evaluation data to reflect CoI more conclusively. However, the point of me arriving at this newer understanding was not to change what I had done, but to improve and learn from it. I compared Moore's (1997) TDT to Garrison's (2007) CoI , re-analysed the data through a lens of CoI and re-categorised the original coding, although, I did not change the original codes. After rereading my literature review, exploring Dewey's work in more depth, revisiting my analysis and reflecting on my experiences I refined my insights and was better equipped intellectually to engage in further action (McNiff and Whitehead, 2009) which was viewing the implementation of this module within a framework of communities, whilst linking Dewey's work and synthesising my previous understanding of TDT into CoI.

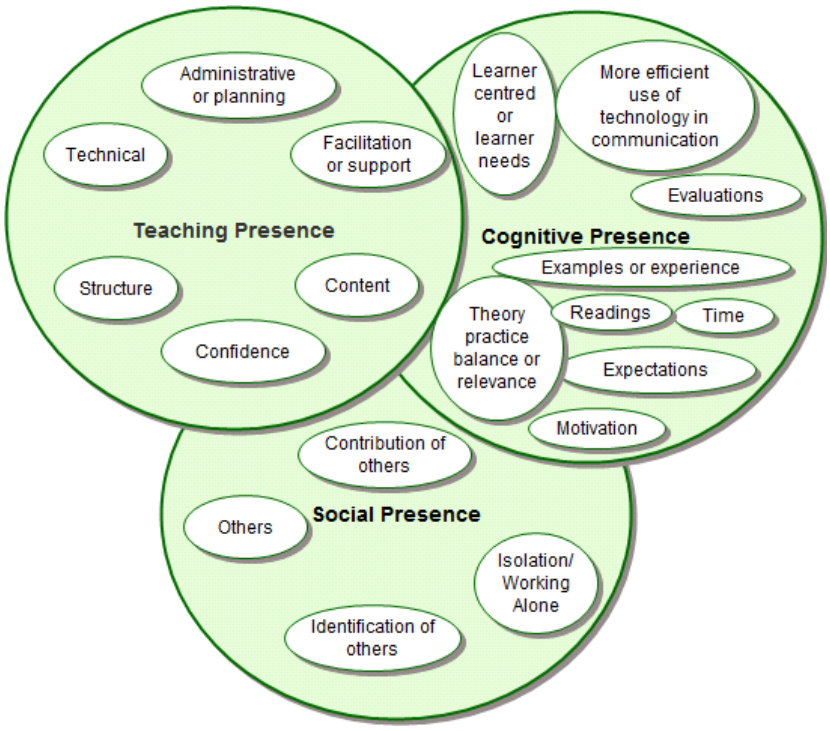


Figure 42: Student data re-categorised through a lens of community of inquiry.

In the student results, structure was necessary for the community. This corresponded to Moore's (1997) element of design and structure and Garrison's (2007) teaching presence.

> *'The structure made sense. What I mean is, each activity seemed to follow on from the next in a logical order'*

The human or social nature of the interaction was also highlighted consistently by the students. Dialogue or interaction, according to Moore (1997) or social presence, according to Garrison (2007) was essential in this community:

> *'By the end of it, we were almost like an online virtual family, helping each other out, giving advice etc.*

The final element discussed, Garrison's (2007) cognitive presence or Moore's (1997) autonomy are related and both were directly related to Dewey's work in critical thinking (Moore, 1973; Garrison, 2007). Cognitive presence was described as including information exchange, exploration, integration and connecting ideas (Garrison, 2007), whilst Moore's (1997) autonomy encompassed individuals proceeding through instructional processes independently, controlling their learning situation and learning how to learn. These higher order activities also seemed to be important and evident to the students in creating a CoI:

> *'You don't realise how interested you would be. You don't realise how much thought it was. It wasn't just reading other people's posts. It was then mulling them over and wanting to write something…and being careful….critical what I wrote….Other people were being careful and constructive….people were contributing in an intellectual fashion, not a flippant one'*

It was also clear that the students were aware of the expectations to develop their autonomy or higher level activities and accepted this:

> *'In the last strand, It was obvious we were left to be more independent which was a bit scary- felt like mother bird leaving us to fly alone after teaching us, but still watching'*

The students and I were part of a community: a community of inquiry. Clearly, my responsibility as the teacher was to structure the content and facilitate discussion. This

was clear to me. We worked together in creating 'real' social presences in a structured environment whilst critically contributing, exploring and exchanging information as a group**.**

Communities

I was part of a development and delivery community. For clarity in this submission, and in my own meta-cognitive processes, I have neatly separated these into:

- Development: Community of Organisational Learning (CooL)
- Delivery: Community of Inquiry (CoI).

In reality, although the communities may have been distinct to other members, my straddling role was not. As part of the complex focus of this inquiry, I needed to demonstrate analysis and interpretation of the entire process and apply this to my learning or improvement of my educational practice (McNiff and Whitehead, 2009). I was a member of each community. Were they related? After much deliberation, the difference I conceptualised between the Community of Inquiry (CoI) and Community of Organisational Learning (CooL) was from the perspective of formal and non formal learning. CooL, concerning development, was informal and concerned professional development and learning at work. CoI, concerning delivery was targeted towards a formal educational context. In a broad and time consuming search, no literature was found that related CoI and community of practices in DL or otherwise (To remind the reader, I believe the CooL was aligned with a CoP). Slightly frustrated, I contacted Randy Garrison the forerunner of the DL CoI framework directly. I explained my thesis and asked if he could suggest any references or was aware of any research relating staff experience to both CoP and CoI. He replied:

> *'I am not aware of anybody who has focused on this, although I think it is a worthy topic. While this may be frustrating, it also presents an opportunity to explore the differences and make an important contribution' (Personal communication, D. R. Garrison, January 12, 2012).*

Addressing communities in an effort to improve practice in the development of DL was a relatively unexplored, but valuable framework to explain practice, plan change and raise awareness.

5.4. Summary

I have included a simple model (Figure 43) incorporating and synthesising this discussion chapter. My role was central to the original inquiry and remains central in the model. From this fundamental position, came radiating responsibilities and larger communities. Clarifying these roles, placing them within a context of communities and identifying the various components of these communities was essential as I strove to evaluate, take action and improve as a practitioner.

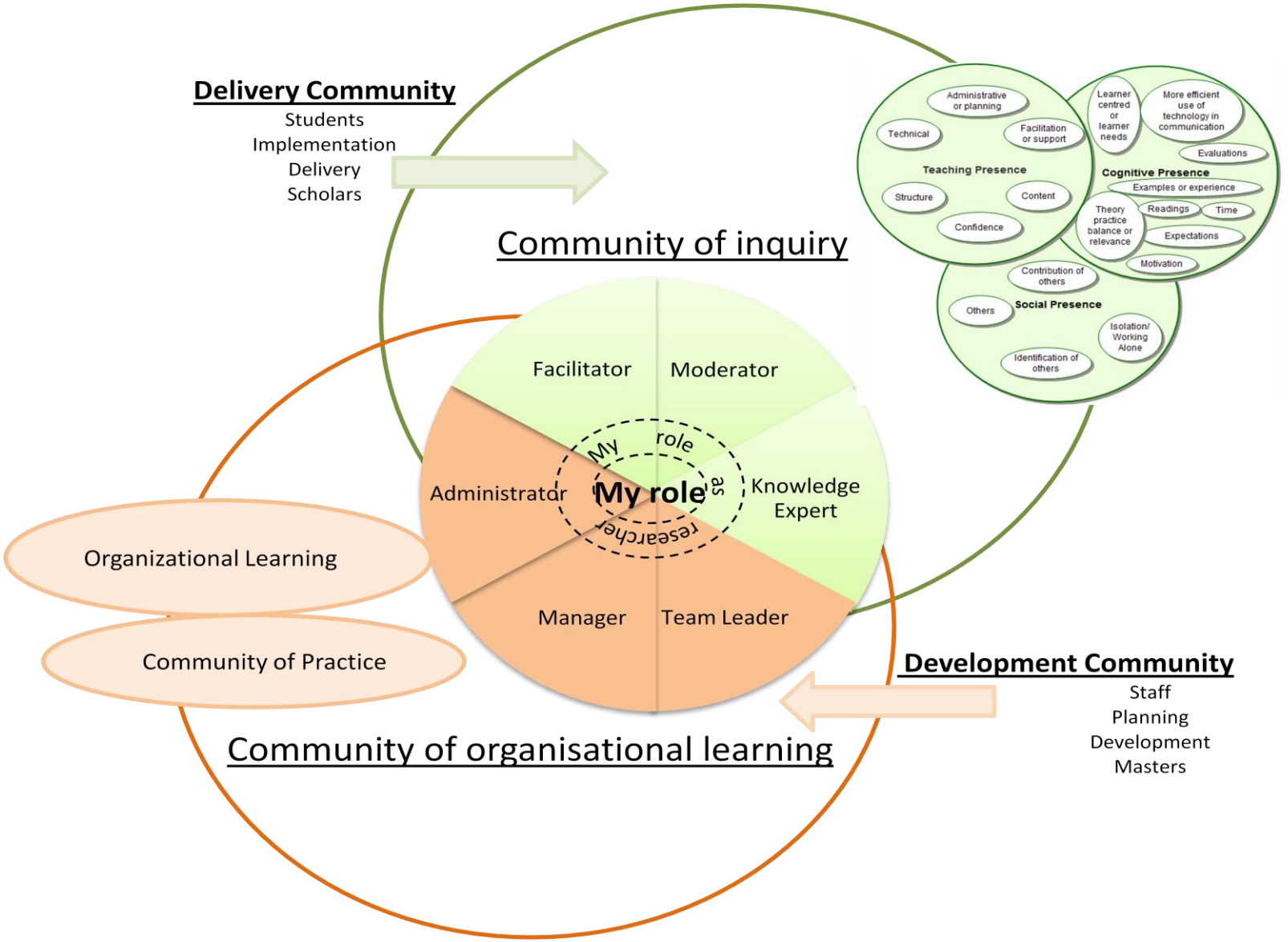


Figure 43: Model of academic roles and communities

5.4.1. Learning Points and Action

Although perhaps not a traditional part of a discussion chapter, my desire (on a personal and academic level) to demonstrate action and improvement was essential. Below, I address my learning points and action as a teacher and practitioner followed by my learning points as an action researcher. I then address strengths and weaknesses.

Teacher and Practitioner

To improve as a distance teacher was relatively easy. I read extensively, took courses, had access to online forums which I 'lurked' through and evaluated this module extensively. Through my experiences, and relying heavily on Salmon, Moore and Garrison's work, I feel confident that I have used interaction to develop higher and critical level thinking skills and encourage autonomy. Subscribing to a constructivist approach, I believe I can design content, structure and facilitate the creation of meaningful communities of inquiry in DL.

Time was a major issue for both the students and me. I formally approached my DPD requesting a more flexible approach to working during delivery. Before delivery in 2011, I took action by sending time expectations to students (Appendix N) based on last year's cohort. Feedback from this action appeared invaluable to students (Appendix O).

As for the development of another initiative, while I have learned and improved, I fear I would struggle if asked to repeat this process. Although there are formal DL groups within the university, I am not a member. Almost 2 years ago, two other women involved in DL and I began meeting. We have no fixed agenda; we get no workload points for committees or meetings. We have limited technical ability and share resources freely and openly. This informal collaboration is unequivocally a CoP and is the most helpful resource I have had since the inception of this module. I identified I needed a safe, non-threatening environment to discuss DL issues and I took action by becoming instrumental in developing this community.

Within our CooL, (Community of Organisational Learning) we continued to struggle between informal groups and formal structure. At the beginning of this development period (the module is running for the second time as I write this) we introduced

project management software called 'basecamp'. The action of introducing new software allowed team members to share files, instant message and track tasks and times. We do not use this as a formal reporting system (although it could be used this way), but for informal development. We are using technology (basecamp software) to facilitate formal recording of tasks and processes, yet collaborate informally. I believe this further supports the necessity of a model like communities of organisational learning (CooL). Finally, as part of my aim to improve was to raise awareness and lead, I have attempted this by contributing to the following:

Date	Action/contribution and description
2012	Presentation-'To critically and systematically examine and make informed changes to the design of an e-module in clinical education' accepted ASME (Association for the Society of Medical Educators' London research conference
2012	Paper accepted in Medical Teacher: 'Is the E in E-learning expensive to academics?
2012	Guest Lecturer: 'Critically examining workload models of e-learning' Northumbria University
2012	Presentation 'Is the E in E-learning expensive to academics?' accepted Ottawa Conference on Medical Assessment, Kuala Lumpar
2011	Presented 'To critically and systematically examine and make informed changes to the design of an e-module at the post-grad level' School Medical Science Education Development Research Interest Group
2011	Presented 'To critically and systematically examine and make informed changes on the design of an e-module 'at ECLS Postgraduate Seminar, Red Brick University
2011	Presented 'How do I improve as an e-practitioner' at the University Level to UNITE Project

In addition, throughout this inquiry I have identified weaknesses in my own ability and understanding. As a result, I have taken action through specific training to overcome these problems in an attempt to improve my practice as both a practitioner of DL and inquiry.

Date	Action/training and description
2012	1 day Net skills workshop : Getting the most from Google Analytics
2012	1 day workshop: Introduction to Excel
2011	1 day workshop: Nvivo
2011	1 day workshop : Introduction to Endnote
2011	1 day workshop: Action research and practitioner inquiry
2010	3 day Net skills (BTEC) workshop in London: E-learning essentials

5.5. Action Research as a Methodology

When I first decided on my study, I decided on the topic and design simultaneously. I decided that AR would be a practical, realistic option. I wanted to change and improve my DL practice and I thought AR would be a way to do this in my specific context. I was not interested in traditional scholarship nor did I want to apply other's knowledge in my practice and reproduce the status quo (Bradbury and Reason, 2007). I hoped to

engage in an innovative form of inquiry, generating original knowledge from my own practice. As mentioned in the methodology chapter, my understanding of action research altered as I undertook this research. Originally, I approached it from a linear and systematic view. I needed this structure as I was aware AR was not a traditional scholarly approach (McNiff and Whitehead 2009), and I thought my controlled and measured approach would add to the 'academic' rigour. My early reading consisted of traditional textbooks on research methods in social science in which AR was addressed. However, as my research began, this formulaic and prescriptive approach could not be sustained. My research was based on my everyday experiences; I was interested in the development of knowledge based on changing practice . Therefore, as is often the case in AR, my research emerged over time and was both evolutionary and developmental. As my skills of inquiry developed, my research evolved (Bradbury and Reason, 2007). Further reading of McNiff and Whitehead's (2009 and 2002) work was illuminating. They explained that AR is an attitude of inquiry that enables people to question and improve taken-for-granted ways of thinking and acting. This was far removed from my earlier attempt to define AR at a project level of five sanitised steps. In this study, AR was simply me trying to improve my practice. I did this by systematically examining and evaluating what was going on within this module, implementing planned change, monitoring and analysing this change. I tried to be rigorous and reflexive. I moved from a teacher trying to do a better job to a professional capable of knowledge generation and reflection. Action research is a process which allowed me to examine my own educational practice systematically and carefully using research techniques. It was a disciplined enquiry with the intent to inform and change my practice in the future (Ferrance, 2000).

5.6. Relevance of Action Research

By using AR in an academic submission, I believe I have contributed to educational practice on two levels. Firstly, I have added to useful and practical knowledge concerning DL practice. Secondly, by striving for rigour in my research and this submission, I believe I have demonstrated AR is a legitimate research approach that is accessible to teachers.

5.6.1. Relevance of Action Research to my practice as a lecturer

The purpose of my inquiry involved me, (the practitioner) working on educational problems at the same time I was trying to develop solutions to these problems. Much educational research has been conducted outside of the field of practice, producing generalized findings that the practitioner is left to 'apply' to their situation (Kelly, 1989). This has certainly been my experience. When I first began writing this module, I found very little practical research I could ***use***. In an extensive review of research on e-learning, Conole (2004) suggested that rigorous research was needed to gain an understanding of how technologies could be *used* effectively in DL. Beetham and Sharpe (2010) discuss research in pedagogy in HE with specific regards to technology. They claim there is a gap in research literature concerning how technology is actually being *used* to support and promote learning (Beetham and Sharpe, 2010). My inquiry concerned professional practice, grounded in my experience as I researched and worked and will hopefully be useful and valuable to others. It was based on practice; I elicited theories of practice directly from my actual experiences. Disappointingly, often AR , originally conceived as a practical tool for teacher's, has become distorted and published accounts have been dominated by methodological arguments rather than a discussion of the understandings and the insights generated (Noffke and Somekh, 2009). In this submission, the relevance of AR to my practice includes: knowledge and theory generation, practical explanations, description of my educational development and the documentation of changes that I, the researcher brought about in my practice.

5.6.2. Relevance of Action Research to my educational practice a researcher

AR encourages the improvement of practice by actively allowing and encouraging teachers to be involved in evaluation of their own activities. However, it has been fraught with both validity and methodological rigour issues (Huges *et al.*, 1998; Champion and Stowell, 2003). The role of teacher as researcher is difficult especially when trying to establish validity (Champion and Stowell, 2003), yet teachers should be evaluating their own work, analysing it critically and constantly working towards development and improvement (Kelly, 1989). Stenhouse (1975) supported this view. In his 'teacher as researcher' model, he suggested a teacher's personal research and development should be inextricably linked to increasing their understanding of their

work and therefore improving their teaching. Carr and Kemmis (1986) recommended that teachers must be researchers while McNiff (1988) observed that, '*action research presents an opportunity for teachers to become uniquely involved in their own practice'* (p. 13). AR should be a tool to inform and guide practice. I believe there is a need to develop AR as a research methodology appropriate to the study of 'action'. By using AR as a form of inquiry, I demonstrated practical knowledge and understanding could only be developed by advanced practitioners. Arguably, by using AR within this submission, I was also contributing to and representing educational action research at the highest academic level. Only by performing practitioner inquiry and approaching practitioner problems in this fashion, can AR which often needs legitimisation in the context of the examining system in HE (Huges *et al.*, 1998; Noffke and Somekh, 2009) become recognised.

I was pointing out to other's in a similar situation what needs to be done to improve working conditions and to the academic world that I am a public intellectual willing to stand up for others and transform practice. By using action research I have attempted to contribute to my own professional development and demonstrated both knowledge creation and theory generation (McNiff and Whitehead, 2009).

5.6.3. Strengths and limitations of the research

Introduction

Stenhouse (1975) suggested that research practices were 'good' when they demonstrated the researcher's capacity to undertake a systematic enquiry and make it public with educational intent. McNiff and Whitehead (2009) argue an inquiry must generate new knowledge and theory. Have I done this? Furthermore, have I demonstrated authenticity and rigorous research processes? Although, I have addressed rigor within the body of my inquiry, below, I address validity, quality and list strengths and weaknesses by chapter. To review, my aim and related research question of this study were:

Research Question: How can I improve my practice as a University Lecturer in the development and delivery of a distance learning module in a post graduate diploma in clinical education?

Research Aim: To critically and systematically examine and make informed changes to the design and delivery a of post-graduate distance clinical education module.

It is important to consider how well my research addressed my aim. Throughout, I have tried to follow the guidance, discussed in my methodology chapter, and followed McNiff and Whitehead's (2009) *Doing and Writing Action Research* concerning practice in my workplace, the quality of my research and the form of writing of this thesis.

Validity

I was not just 'there' during the research process. I had an intimate understanding of the research setting and substantial knowledge of the staff and student research participants. Whilst analysing the data and in the data collection process itself, I continuously self-questioned and used a collaborative process by interviewing all staff members and all but one student involved. These reflexive and dialectic principals reflected a plurality of perspectives and thus contributed to a believable lived experience (Winter, 2002). I was part of this lived experience and therefore had close knowledge of the participants; although I am aware that Robson warned against the risk of being so involved that one 'goes native' (Robson, 2002, p. 173). I believe that

my understanding of the setting and the subjects has enhanced my ability to access appropriate data and interpret it, whilst I hope that my reflexive approach has countered as far as possible the danger that I have overlooked aspects that an 'outsider' would have identified. I undertook 'prolonged engagement' and became 'immersed' in the data as recommended by Mertens (1998).

Quality

In an attempt to distil quality criteria for assessing educational action research, Elliot (2007) suggests the inquiry should:

- Be focused on a problem that is of practical concern to the teacher involved
- Gather data from different points of view (triangulation)
- Enable teachers to question their professional knowledge and test it against evidence gathered in their practical situation
- Extend teachers understanding of their situation in a way that opens up new possibilities for action.

I believe I have met these criteria of quality. The development of this module was a real life and practical problem for me, methodological triangulation was done, my tacit knowledge was continually tested in my work environment and I have been able to make changes and be pro-active in my continuing practice in DL.

5.6.4. Strengths and Weaknesses

Data Collection

Although one of the most predominant data collection strategies in qualitative approaches to research (Ary *et al.*, 2010), using documentation as a data source was not without potential faults. Documents are one perspective, out of context and although stable, collected in the past (Ary *et al.*, 2010). They did not have single 'objective' meanings, but were dependent on the perspective of the reader (Wellington, 2000). As advised by Wellington (2000) I tried to be aware of the context, authorship, intended audience, purpose and presentation of the documents whilst analysing them.

My choice to use interviews was well supported. Choosing interviews for data collection was consistently suggested in the literature for future research into DL (Saba and Shearer, 1994; Bischoff *et al.*, 1996; Bunker *et al.*, 1996; Chen and Willits, 1998; Chen, 2001; Kanuka *et al.*, 2002). I could have carried out interviews with senior management: The Head of School, Dean or Chair of the E-learning Steering Group. This would have added a frame of reference from a faculty or organisational perspective and added a further dimension and breadth to my results.

It is difficult to know how far my interview technique and the subjects' relationship with me influenced their responses. Rereading the transcripts, I think the students were more comfortable being critical than staff. The staff members and I see each other occasionally and the likelihood of working together in the future in some fashion is unequivocal. Occasionally, I felt the staff were reluctant to criticise me, the 'school' or 'institution' whilst being formally interviewed. Although this could not be included in the formal analysis, in both cases, once the interview was formally over, a far more frank conversation happened. This is well documented in social science research and Cohen *et al*. (2009) labelled these as 'lost gems'. In retrospect, I wish I had asked for ethical and participant approval to make notes of these 'gems' for potential use in the analysis or discussion.

In some interviews, my questions could have been regarded as 'leading' and may have influenced responses. Arguably, I was interested in problems, hurdles, changes and improvement. Therefore, as a Pragmatist, hoping to improve, I feel even the 'leading questions' were justified and served a purpose. I was pleased with the range of subjects included in this study. The students sampled included doctors, dentists, intercalating medical students and both men and women. The staff were also mixed gender and included an administrator and a Web-designer. Therefore, those with different roles, responsibilities, grades, levels of experience and gender were included. This is valuable for those considering whether this study is transferable to their own setting. This was a small population of students and staff and the findings cannot immediately be applied to other settings. However, the purpose was not to generalise, but to inform practice. This has been addressed by ensuring the context of the

environment of learning and the learners have been described in detail. This was especially relevant in DL. When reviewing DL literature and health care professionals, the lack of information regarding context makes it difficult to apply the results to other settings and as a result difficult to inform practice (Cook, 2009). For this research to be useful to others and inform practice, I had to describe the context in detail.

Data Analysis

Although I am aware of the advantages of practitioner research, a potential problem with my solitary and inexperienced research was that it was difficult to be confident about the validity of my isolated interpretations. I was close to two fellow PhD students and we used each other as critical friends throughout our studies. They challenged me and helped me to look at alternative explanations. My supervisor, Dr Hall, reviewed my anonymised student data analysis and pointed out 'autonomy' as a potential code for some of my data. I had missed this. My Degree Programme Director has a strong constructivist research background and was intimately familiar with our students and the team working on the module. She provided hours of peer de-brief at various stages of this research. I am therefore confident that her 'insider knowledge', research background and sincere desire to constantly improve our programme have challenged my thinking and strengthened my analysis.

The early and retrospective documentary analysis (minutes of meetings etc.) allowed improved conceptualisation as to the process the team went though and was invaluable as I was able to recognise and follow up with the interviews. No doubt analysis derived from interviews could have been richer if I had been more skilled at picking up relevant cues. I was relatively inexperienced although, by the end of the analysis of the interviews, I felt that I had reached theoretical saturation. Furthermore, much of the staff and student data was consistent with the literature.

All student interview subjects seemed to agree that this was a positive learning experience and all staff seemed to agree this was a difficult process for us. Therefore, although I have viewed the data through different lenses as my journey progressed, the fundamentals and original coding did not change.

While this was not empirical research, a positivist approach was taken in some data collection and analysis. The methodological triangulation of data collection (interviews, analytics, and evaluations) helped contribute to my claim of validity (Table 11 and Table 15).

Discussion Chapter

I had identified **'communities** 'as the basis for my theoretical framework in the discussion chapter, yet, there, I faltered. Should I have artificially returned to my original literature demonstrating a more symmetrical thought process and resultant product? My options were to look at new literature around organisational and DL communities (which might be a bit risky and definitely be more work) or focus on literature addressed previously (which I felt was less risky and less work). I decided on the former: more risk and more work. This was actually a reflection of what I did, what I learnt and new action that I undertook. I also realised that in order to test my claims of knowledge, I had to demonstrate validity against theories in the literature (McNiff and Whitehead, 2009). This chapter was an authentic representation of: action I took to improve (further reading and writing on communities), scholarly enquiry (attempting to hold my ideas against the ideas of the literature), provisionality (I believed I was right to address this new literature) and demonstration of my living values in practice (I believe it legitimised this discussion and I was prepared to stand up for what I believed in) (McNiff and Whitehead, 2009).

5.7. Recommendations for Successful Distance Learning

Within the results, there were technical, practical or administrative issues. Although important to the overall functioning of the module, these seemed atheoretical and perhaps slightly superficial to my previous discussion of communities and roles. Below, I have included a list of recommendations including both practical and more theoretical issues, again reinforcing my personal stance of the contradictory separation of theory and practice. I did not see them as separate and to do so now would be artificial for practice. In these recommendations, and overall in this inquiry, I subscribed to Dewey (2009) who argued ''*…theories…are thin…and ineffectual …they are not reflective expressions of acts and events already embodied, achieved in*

experience' (p.2). Drawn from the literature and what I achieved in my experience, these recommendations are aimed towards improving practice and are presented chronologically: early development, development, delivery and post-delivery.

Early Development

A clear plan and outline of job descriptions, expectations, roles and responsibilities is essential from the beginning

Development

Institutionally, avoid simply letting role changes and competencies evolve by intervening or defining roles and developing frameworks or training in which these competencies can develop.

Universities must provide their teaching academics with appropriate staff, sufficient resources and protected time.

Clarity within the team and tangible institutional support is mandatory for success. Role clarity would not only increase *job* satisfaction to individual academics, but may contribute to improved academic resource allocation by greater focus on individual competencies and performance related to individual needs.

Although plans for training and development can only be established after clear identification of roles and competencies (above), a personalised approach to staff development is essential including:

Pedagogical Training

Pedagogical and design training focusing on the role of 'social presence' (Garrison, 2007), TDT (Moore, 1973) or conversational frameworks (Salmon, 2008) is essential in designing DL programmes with critical higher order learning and creating communities of inquiry.

Development of Online Competencies

Support the development of online competencies and techniques in facilitation/moderation by training or mentoring is critical (Personally, this was not a difficult transition for me as I subscribed to a social constructivist approach and my background was in education.). I believe if an academic subscribed to a cognitivist or behaviourist belief system, this would be invaluable.

Project Management Training

Project manager training must address competencies including leadership, supervision, coordinator, evaluator and general management.

Invest heavily in up front technical academic and administrative support, especially in the last two weeks before an e-module goes live. Pre-test and pilot all activities and sites and plan timings. This prophylactic care may assist in keeping technical issues to a minimum for students and help them plan workload.

Team working and communities are necessary for success. Tensions surrounding structured organisational learning and informal communities of practice have given rise to a new learning within an organisational setting: Communities of Organisational Learning. Accepting this break from tradition and raising awareness of potential frictions will be invaluable to other inexperienced teams involved in DL.

Delivery

Feed forward timings and patterns of work of past cohorts to new students. Our students appeared to spend 70% of their online time outside of normal work hours and the most popular day for contributions was Sunday and the busiest 4 hour period was 8:00pm until midnight.

Outline length of time the average student spends on activities and working patterns. (Whilst not delineating specific time expectations, this information may be helpful to students and allow them to plan their learning schedule, plan realistic working times and clarify expectations.)

Students tended to exit after contributing to a wiki. This information is valuable to authors of e-materials. If students find these wikis to have a natural break, ensure activities are created and organised with the wiki being the end task- as a natural break.

Invest in up front technical training for academics. As the module progressed and I could take on more technical responsibilities (the ratio of my responsibilities increased to demonstrate this), the overall time spent by both academic and technical staff decreased

The technical demands appeared to be relatively inconsistent after the module went live and work occurred in bursts. Allowing a flexible model of planning and allocation of technical tasks is necessary. The academic and administrative issues were relatively consistent and thus, easier to plan. Ensure administrative and academic support is allocated after the module goes live and allow a plan for flexibility with technical support.

75% of the academic contributions occurred outside of 'normal' work hours. Academics involved in DL should change from a traditional model of working to one with work release, flexibility options, additional staffing or paid overtime. This should be flagged to managers and expectations from all staff levels should be explicit.

Post Delivery

Universities, especially front line management must demonstrate a full understanding of the nature of academic workload online if the goal is to provide a high quality experience to all students.

Encourage academics to rethink their academic identity as it relates to technology. The close, successful face to face teaching experience with students has changed, as has traditional academic autonomy.

For academics involved with DL new stressors including: time involved, resources required, additional workload and role ambiguity are well documented and consistent with this research. Formal recognition, opportunity for promotion, financial or time incentives would be invaluable to offset these potential hurdles.

5.8. Conclusions

The early uptake of DL by academics has been met with disappointing results (Ellaway, 2011) and universities have struggled to engage academic staff with its use (Salmon, 2005; Becker and Jokivirta, 2007). Academic roles have been transformed dramatically whilst both the opportunity and perhaps pressure to use DL as a medium has been interminable (Beaudoin, 1990).

As an academic, initiation into DL was a daunting prospect for me due to: the variety of technologies and delivery alternatives coupled with unfamiliarity in attributable workload, resource allocation and role ambiguity. My autonomy was eroded, I was 'displaced' (Beaudoin, 1990) and my personal narrative was altered as historically, I understood my role to be a relatively autonomous developer and deliverer of content. Although my 'deliverer' role shifted naturally to one of 'moderator' or 'facilitator', with my 'developer' role I was not in an overt authoritative or vocal position within university structures. Alarmingly, my academic voice was suppressed (Beaudoin, 1990) whilst major factors including workload and new responsibilities were inadequately

addressed. I was not prepared to work with DL expectations and required institutional support, vital to academic satisfaction and receptivity (McPherson and Nunes, 2008).

These research findings suggested this support should include: role clarity, collaboration, trust, and protected time to address practitioner threats including: danger to autonomy, workload issues, accountability and role ambiguity. Role ambiguity included the expectations of new competencies. Competencies including programme management or team leading were new and I did not have, nor did I claim authoritative or positional power. I thought my job was to write the content not to manage others. Collaborative or cooperative communities were the only way forward, however, these struggling communities had to flourish and function in a climate of rules, regulations, tradition and structure. A new model (CooL) is proposed.

Avoiding traditional workload assumptions that are erroneous and inaccurate (Hovenga and Bricknell, 2006), this study provides a clear framework of roles, clarity of responsibilities and workload expectations for academics whilst uncompromisingly focusing on informing and improving practice in DL. As practitioners, only through informed practice can we be empowered to plan change, collaborate and avoid distance learning workload models recognised as unsustainable (Schofield *et al.*, 2003).

Appendices

Appendix A- Acronyms

HE- higher education

UTCE- utilising technology in clinical education, a 20 credit module

LSE- learning support environment

AR- action research

DL- distance learning

CoP- communities of practice

CooL- communities of organisational learning

CoI- communities of inquiry

DPD- degree programme director

CME- continuing medical education

TDT-transactional distance theory

ID- instructional design

BTEC- business and technology education council

UNITE- University Network for Information Technology and E-learning

RCT- randomised control trial

ADDIE- analysis, design, development, implementation and evaluation

ICT- information computers and technology

NEA- National Education Association

HTML-hypertext mark up language

Appendix B- Full justification of literature review

The following is an explanation of definitions and search strategies used and is organised by topics following the same pattern as the literature review.

What is effective distance learning?

Definitions and Search Strategy

The ongoing tension of my work as an academic submission or my aim to improve as a practitioner appeared early on in this review. Systematic reviews tend to be more explicit for practitioners and Evans and Benefield (2001) along with Bassey (2000) suggested that a narrative review might be more directed towards an 'academic audience'. There is widespread debate about the methods, purpose and audience of educational research (Hammersley, 1993; Evans and Benefield, 2001; Hammersley, 2003). Choosing to approach this section of my literature review looking at both narrative and systematic reviews was practical and functional for me as a practitioner submitting an academic thesis. I acknowledged I had taken a broad approach in this section of the review, yet I was not subordinating standards. I believed from a pragmatic point of view there was value in different approaches to synthesising this literature.

Student Experience: Transactional Distance Theory

Definitions and Search Strategy

From Moore (1973), I defined transactional distance as the psychological and communication space between distance learners. Moore himself did not operationalise the terms involved (Gorsky and Caspi, 2005) although no literature was found that offered a different definition from his original (1973) and more recent work (1991).

I searched data bases outlined earlier and used the following search terms:

- (transactional distance theory or TDT or transactional distance) and
- Synonyms of distance learning.

although I did not have to use the various synonyms to DL. All of the articles found dealt with technology in learning in some format. I narrowed my search by disregarding studies dealing with K-12 populations, purely comparative studies, studies only addressing staff or faculty positions (although I addressed these later) and studies investigating specific media.

Student Experience: Instructional Design

Definitions and Search Strategy

I searched the data bases outlined earlier and began with the following search terms:

- ((Instruction* design and structure or plan or strategy or models or theory*) or structure or design models or instruction*design or strategy* or course design) and
- Synonyms of distance learning.

Much of the literature concerning instructional design (ID) was training and vocationally based. I also drew heavily on the following texts: *Rethinking Pedagogy for a Digital Age(Beetham and Sharpe, 2010)* and *E-moderating: The Key to Teaching and Learning Online* (Salmon, 2008) *Designing Effective Instruction* (Morrison *et al.*, 2011) and *Instructional Design* (Smith and Ragan, 2005). After reviewing literature generally, I further narrowed my search my adding TDT to the search terms listed above.

Student Experience: Interaction and communication

Definitions and Search Strategy

I defined interaction and dialogue from a descriptive approach as did Moore (1989) who described learner content interactions, learner-instructor interactions and learner-learner interactions. Interaction appears to be used synonymously with engagement (Salmon, 2008) and has been used to understand how students construct knowledge in distance education environments (Wallace, 2003). I agree with Moore (1997) that dialogue or interaction is the student engaging in anything: whether it is with other students, the content or the instructor. I searched the data bases outlined earlier and began with the following search terms:

- (Interaction or dialogue or communication or discussion or engagement) and
- Synonyms of distance learning.

I excluded articles relating to gaming theory and assessment. These are specific areas in which much has been written concerning interaction, however I was not interested in pursuing these as they did not relate to my area or my aim. In the previous review on structure, I excluded literature from a staff perspective; in this section I purposefully included it. To review, in this submission, DL to me was not just an alternative way of delivering information as a resource for learning, nor was it just an alternative teaching method. I agree with Slevin (2008) and believe one of the most promising and integral features DL provided was learning opportunities filled with interactional situations.

Student Experience: Autonomy

Definitions and Search Strategy

Knowles' (1984) concept of andragogy was at the core of his approach to adult education. His popularisation of self-directed learning (Anderson and Moore, 2007) occurred alongside a shift in distance education from a strongly teacher or institution-directed approach to one that gave more freedom and choice to learners. Moore (1973) provided a link between the emerging ideas of adult self-directed learning and distance education(Anderson and Moore, 2007). He was particularly interested in autonomy or self-direction. These 'constructs' were not easy to define. Anderson and Moore (2007) explain that in distance education self-directed learning (SDL), autonomous learning and independent learning were used with a considerable degree of equivalence. Tight (2002) supported this and explained SDL and independent learning are so closely linked they are essentially synonymous. Therefore, I used the term autonomy for congruence with Moore's TDT, but have drawn from authors who may have used synonyms. I struggled with the inclusion of a definition at this point. For academic rigour, I thought it was essential, but revisiting my pragmatic roots, I didn't think it would be possible, honest or functional. In the literature I have read, very

seldom are any of these terms clearly defined. Definitions were abstract, and did not clarify the 'autonomy' for me. I needed more depth and context. Therefore, I have decided to use Moore's (1973) explanation (who interestingly cited Dewey (1966)) with the following description of an autonomous learner:

- One who has learned how to learn
- One who knows how to proceed through instructional processes
- One who draws on a range of resources
- One who never gives up overall control of the learning process. Moore's (1973) point here was that autonomous learners may be instrumentally dependent on teachers at a distance, but will not be emotionally dependent on them).

From my reading, to a large degree, the authors were all referring to the amount of control a student has over his or her learning situation. I searched the data bases outlined earlier and began with the following search terms:

- (autonomy or responsibility or motivation or independent learning or personal freedom or 'personal responsibility' or independence or self directed*) and
- Synonyms of distance learning.

The major texts used in this section were *Adult Learning: Theory and Practice (Knowles, 1984)* and *A Handbook of Distance Education* (Moore and Anderson, 2007). Much of the early theoretical work of distance education was derived from the field of adult education and adult learning theories (Anderson and Moore, 2007). In this review and submission in general, one of the limitations I set was to address literature that dealt only with adults. There is an abundance of DL literature that focuses on K-12 education, but these were excluded. I have made the assumption that the learners on the UTCE module had adult characteristics.

Staff Experience: Organisational Culture

Definitions and Search Strategy

It was difficult to define organisational culture. As with DL and autonomy, I thought if I read just one more definition, it would be clear. After creating a list of possible definitions, I finally read *Sociology and Organisations*, in which Schein (2011) dedicated an entire chapter to *What is Culture?* The conclusion being that 'culture' can be approached from a conceptual or practical point of view, but so far, we have not agreed how to define, study or apply it. That did not solve my problem totally, but I became conscious I was personally interpreting culture in two ways: from a formal conceptual point of view and from a practical applied point of view. How I defined it needed to be conceptual **and** have a useful application. Therefore, instead of defining it traditionally, I chose to adapt a list of manifestations that make up culture (Table 3). These were interpreted, evaluated and enacted by everyone differently because cultural members have differing interests, experiences responsibilities and values. Therefore, they were webs of paradox, concordance and sometimes contradiction (Martin, 2002). Our culture consisted of the patterns of meanings and values that linked all of the shared thinking and behaving; sometimes this was harmonious and sometimes discordant. The shared values of higher education (and organisation studies in general) have been used commonly as the framework in discussion of organisational culture (Becher and Trowler, 2001).

I began this search from the library data bases using the search terms:

- Organisational culture or institutional culture or university culture or higher education culture and
- Synonyms of distance learning.

From my early reading, I identified core and seminal texts. I then visited the library, reviewed these books, did an additional manual search and finally drew heavily upon the following books: *Organisational culture: Mapping the terrain, Handbook of Distance Education, Academic tribes and territories, Organisations Evolving* and *Sociology of Organisations: Structures and Relationships.* The literature I used in this

section was far more text based and more general than the previous sections. I believe my earlier review on student perspectives (adults, clinicians, post graduates) had to be focused on a specific population as I believed that these individual differences were essential to ensure the literature reviewed was covered with both complexity and depth. However, I believed, in reviewing organisational culture, the population of students was far less important. I have made the assumption the experiences of all staff within a higher education organisation implementing DL would be more generalisable.

Staff Perspective: Organisational change

Search Strategy and definitions

I began this search from the library data bases using the search terms:

- Organisational change or university change or higher education change and
- Synonyms of distance learning.

I drew heavily upon texts as I did for the previous section, including: *Organisational culture: Mapping the terrain, Handbook of Distance Education*, *Academic tribes and territories, Organisations Evolving* and *Sociology of Organisations: Structures and Relationships.* I have defined change simply as "to make or become different". In this context, the idea behind the change is improvement to our programme by offering students more flexibility and options. I believe this change was not of the spontaneous variety.

Staff Perspective: Types of organisational change

Definitions and search strategy

Change within an organisation can be top-down (driven by management) or bottom-up (emergent or participatory) or a combination of the two (De Freitas and Oliver, 2005; Marshall, 2010). When writing this review, I grappled with the decision to focus on:

- analysing and understanding change or

- trying to manage change.

Eventually, I decided to focus on the former. Cognisant of my aim to improve practice, I wanted to understand what happened, not manage it. After deciding on my focus, I used the literature on organisational change outlined above and further targeted literature dealing specifically with DL. I was interested in analysing change inherent from DL in higher education. It was no easy task. There were several articles found on the transition from individual initiatives (like mine) to complex DL programmes. Many distance universities that fully embraced DL have published cases studies of individual academics experiences with technology. I was interested in local initiatives in a traditional university in which the decision to embrace this module was a top down initiative. That helped limit my search and focus my reading.

Staff Perspective: Barriers to distance learning

Definitions and Search Strategy

Literature concerning staff perceptions of DL was relatively abundant; I was able therefore, to be slightly more selective in my search. I used the data bases earlier and searched for:

- (staff or academic or faculty or teaching) and (barriers or obstacles or hurdles or perceptions or experiences) or (cost or time or expense or workload) and
- Synonyms of distance learning.

Similar to previous sections, I read generally and then performed a more focused search on health care related and post graduate work. Since my aim concerned improving practice and my experience was a difficult one, I decided to focus on barriers or obstacles DL staff have had to overcome. An alternative approach might have been to investigate facilitators or incentives to DL, or to look at it from a balanced perspective; I focused only on problems staff members had. I wanted to test the validity of my ideas (McNiff and Whitehead, 2009) and experiences in relation to the literature. Often, in action research, other author's work can be both inspiring, and as

mentioned earlier provide a framework for my own. My experience with DL was a negative and difficult one. Part of my task in this literature review was to engage critically with my experience and ground my ideas in the literature, to incorporate others ideas and to see whether my ideas could hold their own (McNiff and Whitehead, 2009). Since my experiences and ideas were almost exclusively barriers, obstacles and difficulties, it seemed like a pragmatic decision to focus this part of my literature review in this direction.

I began this section looking at systematic reviews, some general literature then focused more specifically on health care education. Interestingly, I found the majority of the literature in this section from North America and quite heavily related to nursing. Nursing literature has consistently focused on lived experiences and has continued to demonstrate this in regards to DL. By no stretch was the section directed towards nursing. However medicine and nursing are both practice oriented, which may vary from purely academic subjects in distance education research (Mancuso, 2009). Therefore, I think the decision to further refine my search was justified.

Appendix C- My assumptions concerning learning, research and social processes relating to this inquiry.

Learning/knowledge	Research	Social /organisation
A social constructivist approach to learning is of value	Action research can solve problems and contribute to knowledge	Individuals might regard knowledge and experience as something to be guarded rather than shared
Learning is a local, concrete, contextual phenomenon, not at abstract process	My role as a researcher is to focus on the totality of the problem	That the development and delivery of an e-curricula is a social system
I will continually adjust to new information and new events as the research process progresses	Description and evaluation are integral to this research. However, this research is not a just description of this complex situation and context, but an attempt to affect a positive change in the situation. Evaluation will unequivocally be part of my research, but the focus will be evaluation in terms of action and improvement.	I need to seek external validation for my insights
My actions will be rooted in practice and I have a locus of control within the module	My role of a researcher is to learn about the planning and implementation of an e-module by trying to change (improve) it	I can learn from other stakeholders (staff/students) and they from me
There is possibility of improvement in this e-module	My role is that of practitioner as researcher	Research requires collaboration between all stakeholders.
I can improve a problematic situation as a teacher		I am transforming the social environment through critical inquiry

Appendix D- Preliminary Ethical Assessment Form

The University must ensure that all its projects undergo appropriate ethical review before commencement. This covers both internally and externally funded projects, including postgraduate and undergraduate projects. In addition to the institutional requirement, main research funders (e.g. Research Councils) now require assurances that projects have been through an appropriate ethical review and that the research will be conducted within a research governance framework embedded within the institution. The University has a two-stage approach, requiring ALL projects to undergo a preliminary ethical assessment process.

Please complete the following Preliminary Ethical Assessment Form.

SECTION 1: Applicant Details

Name of Researcher (Applicant):	Laura Delgaty
Faculty & School:	School medical Science Education Development
Email Address:	
Contact Address:	
Telephone Number:	**0191246-4563**

SECTION 2: Project Details

Project Title:	**Evaluation of the development and implementation of an e-learning module**	
My Projects Reference (BH number): *If you do not have this, please contact your Grants & Contracts Office*		
Has ethical approval to cover this proposal already been obtained?		**NO** ☐

If **YES**, please confirm:	**Approving Body:**
	Reference Number:
	Date of Approval:

If you already have approval then you do not need to complete the rest of the form. Please go directly to the Declaration in Section 7.

SECTION 3: Animals

Does the research involve the use of animals of other organisms covered by the Animals (Scientific Procedures) Act?		**NO** ☐

*If you answered **YES** to Section 3, you will need to submit an application for Full Ethical Review to the University Ethical Review Committee. Please continue with the rest of the form.*

SECTION 4: NRES

NHS Facilities, Staff and Patients

Does the research involve any of the following?	**YES**	**NO**
Patients and users of the NHS		**x**
Relatives or carers of patients and users of the NHS		**x**
Foetal material and IVF involving NHS patients		**x**
The recently dead in NHS premises		**x**
The use of, or potential access to, NHS premises or facilities		**x**
NHS staff recruited as research participants by virtue of their professional role		**x**
Participants aged 16 or over who are unable to give informed consent (e.g. people with learning disabilities; see Mental Capacity Act 2005)		**x**

*If you answered **YES** to any of Section 4, you need to submit an application for Full Ethical Review to the appropriate external health authority ethics committee through the National Research Ethics Service (NRES)*

SECTION 5: Human Participants in a Non-Clinical Setting

Does the research involve human participants (e.g. use of questionnaires, focus groups or observation)?	**YES** **x**	**NO**

*If you answered **NO** to Section 5, please go directly to the Declaration in Section 7.*
*If you answered **YES** to Section 5, please complete Section 6.*

SECTION 6: Human Participants in a Non-Clinical Setting – Further Information

	YES	NO
1. Does the study involve other vulnerable groups (e.g. children, those with cognitive impairment, or those in unequal relationships (e.g. your own students))?		x
2. Will the study require the co-operation of a gatekeeper for initial access to the groups or individuals to be recruited (e.g. students at school, members of a self-help group, and residents of a nursing home)?		x
3. Will it be necessary for participants to take part in the study without their knowledge and consent at times (e.g. covert observation of people in non-public places)?		x
4. Will this programme/project involve deliberately misleading participants in any way?		x
5. Will the study involve discussion of sensitive topics (e.g. sexual activity, drug use)?		x
6. Are any drugs, placebos or other substances (e.g. food substances, vitamins) to be administered to the study participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind?*		x
7. Will blood or tissue samples be obtained from subjects?		x
8. Is pain or more than mild discomfort likely to result from the study?		x
9. Could the study induce psychological stress or anxiety or cause harm or negative consequences beyond the risks encountered in normal life?		x
10. Will the study involve prolonged or repetitive testing?		x
11. Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?		x

* **Please Note**: Depending on the details of this project, this may require NHS approval. You will be given further clarification if the project is awarded.

*If you answered **NO** to all of the questions in Section 6: Your project does not require Full Ethical Approval. Please go to the Declaration in Section 7.*

*If you have answered **YES** to any of questions in Section 6: You will need to describe more fully how you plan to deal with the ethical issues raised by your research by completing the Full Ethical Approval application form (after your project has successfully been awarded).* **This does not mean that you cannot do the research - only that you will need to seek and satisfy an ethical opinion from a Faculty Research Ethics Committee.**

SECTION 7: Declaration

I certify that the information contained in this application is accurate.	
Name of Principal Investigator:	Laura Delgaty
Signed:	Laura Delgaty
Date:	Jan 5, 2010

You should send copies of this form to the appropriate Grants & Contracts team, along with the blue form. If you do not submit it with the blue form, you will be asked for it before the application can be considered any further.

If you have any queries about this or any other ethical issue, please contact your Faculty Ethics Coordinator or appropriate Grants and Contracts team**.**

Date received in G&C:	Requires full approval: YES/NO

Appendix E- Ethical application, correspondence and approval

APPLICATION FOR ETHICAL APPROVAL OF A RESEARCH PROJECT

FROM FACULTY ETHICS COMMITTEE

This application form is to be used by **STAFF** and **PGR STUDENTS** seeking ethical approval for an individual research project where preliminary ethical assessment indicated full ethical review was required. A completed version of this document should be emailed to the Secretary of your appropriate Faculty Ethics Committee in the University. *Applications must be completed on this form; attachments will not be accepted other than those requested on this form. This form has been designed to be completed electronically; no handwritten applications will be accepted.*

Research must NOT begin until approval has been received from the appropriate Faculty Ethics Committee.

SECTION 1: APPLICANT DETAILS

Name of Researcher (Applicant):	Laura Delgaty
Email Address:	
Faculty & School:	**School of Medical Science Education Development**
Contact Address:	
Telephone Number:	

SECTION 2: PROJECT DETAILS

Project Title:	**Evaluation of the development and implementation of an e-learning module**	
Name of Supervisor(s) (for PGR):		
Is this project: no funding	Internally Funded ☐	Externally Funded ☐

If externally funded, please provide the MyProjects BH reference number:		BH ☐☐☐☐☐☐
Category of Research:	Postgraduate Research **x**	Staff Research ☐

SECTION 3: TYPE OF PROJECT

Please indicate the predominant nature of this project (tick one box only):

Questionnaire/Survey e.g. surveys of members of particular groups / organisations; mail out questionnaires, street surveys	☐
Experiments e.g. participants completing tasks under controlled conditions, use of tasks/method other than or in addition to questionnaires/surveys	☐
Observational e.g. observing how people behave in a natural setting or in a laboratory	☐
Data-based e.g. the use of official statistics where individuals could be identified	☐
Other	x
If you answered 'Other' please describe.	This will be a reflective practitioner inquiry providing data for doctoral study alongside self-evaluation of a new module and delivery method. There will be a combination of data collection methods. The majority will be a personal evaluation of my own experiences, reflections and notes. Two staff members who have been involved in the development and implementation of an e-learning module will be asked if they are willing to be interviewed. Some statistical analysis will be done concerning when students contributed to the discussion

	forums and shared learning spaces. This data is already routinely collected and is anonymous. No individuals will be identifiable. There will be evaluations done by the students (which are collected regardless of this study) and this data will be analyzed. Again, this will be completely anonymous. I will ask all students if they are willing to participate in a voluntary interview. I will analyze this data and ensure nothing identifiable is included*.*

SECTION 4: PROGRAMME STUDY DETAILS

Proposed date on which project or study will begin:	**May 2011**
Proposed date on which project or study will end:	**December 2012**

Project Outline & Aims:

Briefly describe the aims of this research as well as the main tasks (or tests) that participants will be required to complete or what use will be made of sensitive economic, social or personal data. This description must be in everyday language, free from jargon, technical terms or discipline-specific phrases.

(No more than 300 words)

The aim of this study is to evaluate and improve an e-learning module in a post graduate diploma in clinical education by examining the complex process of e-curriculum development and implementation. For the last year I have been involved in developing an e-module and this inquiry will be an ideal platform to evaluate and improve a work in progress. I have labelled this study a practitioner inquiry. This simply means I will be formally evaluating the process of what I did, analysing what went on, and improving the process and ultimately, the module for the next delivery. It is scheduled to begin again in January 2012.

I plan on looking at 3 sources for my data collection and analysis.

<u>Source One-my own practice and reflection</u>

This will be the majority of the data collected and analysis and is primarily concerned with my own experiences. I have kept a personal log from the first day the module 'went live' to students. I have notes and action lists of what had to be done prior to the implementation in January 2011.The majority of this data has been collected and this will be analysed retrospectively.

Source Two-staff

I hope to formally request two interviews with staff members (one administrative and one IT) with whom I have worked closely. They have kept collaborative work logs with amount of time spent and activities, but no personal thoughts or reflections.

Source Three-students

We have an analytic picture of when students contributed to the module, when they accessed certain sites, when they exited etc. This data is already collected as part of our routine processes. The students are asked to fill out evaluations during and at the end of the module. This data is partially collected, and would be collected regardless of my proposed study. Again, this is totally anonymous and voluntary. At the end of the module, I will ask students (by email) if they are willing to participate in a voluntary interview. This request will be made following the submission of their final assignment. The only additional burden to students will be a request to participate in this to discuss their experiences. Again, the majority of this data has been collected and this will be analysed retrospectively.

PROPOSED RESEARCH METHODS

Please provide an outline, in layman's terms, of the proposal research methods, including where and how data will be collected and stored, and all tasks that participants will be asked to complete. Specify if the research will take place outside of the UK or in collaboration with internationally-based partners, and/or if research will take place using the Internet. Present an outline of the method in a step-by-step chronological order, and avoid using jargon and technical terms as much as possible.

(No more than 700 words)

This module will take place solely in the UK and will involve no partners or collaborators. The internet will only be used as a delivery medium for the module (already established) and as a means of communication (e-mails) and to access data that is already collected as part of our programme analytics.

Data collection

Source one-my experiences and records

Data includes: a personal log, emails, and notes. This data has been collected as part of my routine job. These are stored on the University server and are all password protected. I will analyse the documentation to identify problems that occurred, identify how they were solved, identify problems that were not solved and document why. I will analyse the emails only in a quantifiable manner. No specific text analysis will be done, but the numbers of emails and the times/dates will be analysed to create a picture of workload. I plan on categorizing the emails into 3 broad categories of work. For example, academic/content, administrative and computer/technical issues.

Source two-staff experience and records

There were three natural divisions of labour in this process: academic, administrative and technical. I contributed to the academic side. A team member from both the technical and administrative side will be invited to interview via email to share their experiences concerning this e- module. I will ask questions related to problems they encountered, what they did about them and how we as a team, and they individually could do it better next time. In several of our meetings we have worked this way-creating lists of problems we encountered, what we did and lessons learned, therefore, this should be a familiar pattern.

These interviews will be analysed broadly looking for common themes of what went well (what would you do again), what didn't go well (what would you do differently). These interviews will be audiotaped to ensure accurate transcription. I will remove anything they feel is sensitive. I will ask permission to analyse the workload notes they

have taken. These are not personal commentaries, but simply a quantifiable list of hours spent and tasks accomplished. . I will offer the opportunity for staff to receive a copy of the summary and results of the study.

Source three-students

Data has already been collected from the students in two major forms. The first was formal evaluation of each 'strand'. The e-module itself was divided into three strands which were open for two weeks. These evaluations were sent via survey monkey and students completed them anonymously. The module will also be evaluated at the end of the semester as a whole. These evaluations were (and are) part of the normal process of curriculum development and evaluation for this programme. Students would have been asked to complete them regardless of this research.

The second data source is analytics collected. We can see how many 'hits' each page has had, which pages were 'entered' the most and which pages were 'exited' the most. We can see exactly when a student or staff contributed to the discussion forums and wikis. This data is routinely collected through our learning support environment (LSE). Nothing that identifies a student will be used. The information is already routinely collected and is completely anonymous. The only staff member that contributed to the discussion forums and wikis is me.

The only additional burden that will be placed on students is the request for an interview. Each student will be contacted electronically and asked if they would be willing to participate in an interview to share their experiences of this e-module. They will be contacted after the final submission has been submitted and marked. I will explain the interview is totally voluntary and will serve the dual purpose of data collection for my EdD and curricular development within this programme.

The interviews will be quite open ended, but I anticipate topics emerging including what the student thought overall, what they would do differently, suggestions on what we could do differently, how we could help students prepare, what they found

valuable, and hopefully some useful suggestions for future students and ourselves.

These interviews will be audiotaped to ensure accurate transcription. I will offer the opportunity for students to receive a copy of the summary and results of the study.

SECTION 5: PARTICIPANT DETAILS

Does this research specifically target (select all that apply):

Students or staff of this University	yes
Adults (over the age of 18 years and competent to give consent)	yes
Children/legal minors (anyone under the age of 18 years)	*no*
The elderly	*no*
People from non-English speaking backgrounds	*no*
Welfare recipients	*no*
Anyone who has a physical disability	*no*
Clients of professionals	no
Anyone who is a prisoner or parolee	no
Any groups where a leader or council of elders may need to give consent on behalf of the participant	*no*

Number of participants required:	**2 staff members will be contacted** **8 students will be contacted**
Age from:	**About 22**
Age to:	**About 45**
Source and means by which participants are to be	**Student register**

recruited:	**Email**

Does this project require approval from an external authority (e.g. LEA, school, governing body)?	☐	**NO** x
Has approval already been granted?	n/a	**NO** ☐

SECTION 6: PARTICIPANT INFORMATION **YES** **NO**

Will you inform participants that their participation is voluntary?	**x**	☐
Will you inform participants that they may withdraw from the research at any time and for any reason?	**x**	☐
Will you inform participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	**x**	☐
Will you provide an information sheet that will include the contact details of the researcher/team?	**x**	☐
Will you obtain written consent for participation?	**x**	☐
Will you debrief participants at the end of their participation (i.e., give them an explanation of the study and its aims and hypotheses)?	**x**	☐
Will you provide participants with written debriefing (i.e., a sheet that they can keep that shows your contact details and explanations of the study)?	**x**	☐
If using a questionnaire, will you give participants the option of omitting questions that they do not want to answer?	**n/a**	☐
If an experiment, will you describe the main experimental procedures to participants in advance, so that they are informed about what to expect?	**n/a**	☐
If the research is observational, will you ask participants for their consent to being observed?	**n/a**	☐

SECTION 7: PARTICIPANT CONSENT

Please describe the arrangements you are making to inform participants, before providing consent, of what is involved in participating in your study:

Students

After the final assignment has been submitted and marked, all students will be emailed and asked whether they are willing to be contacted for a voluntary interview (appendix 5) to discuss their experiences. It will be a simple yes/no choice. If they respond yes, they will be contacted formally (appendix 6) again. If they respond no, they will not be contacted.

Staff

An email will be sent (appendix1) to both staff members involved in this module (administrative and technical). They will be asked if they are willing to participate in a voluntary interview to discuss their experiences in the development in this module. If they respond yes, a formal letter (appendix 2) will be sent. If they respond no, no contact regarding this interview will be made.

Please describe the arrangements you are making for participants to provide their full consent before data collection begins:

Please see attached letters. (appendix 2- consent staff) and (appendix 6 –consent student).

Participants should be able to provide written consent. If you think gaining consent in this way is inappropriate for your project, then please explain how consent will be obtained and recorded.

SECTION 8: PARTICIPANT DEBRIEFING

Please describe the debriefing that participants will receive following the study and the exact point at which they will receive the debriefing:

I hope to perform the interviews and analysis with the 2 staff members and students in June and July 2011. They will be given a debriefing letter immediately following each interview (please see attached: appendix 4- debriefing staff and appendix 8 debriefing

student).Each participant will be offered the opportunity to have a copy of my data analysis and summary when I have completed my EdD. I anticipate this to be prior to the end of 2013.

It is a researcher's obligation to ensure that all participants are fully informed of the aims and methodology of the project, and to ensure that participants do not experience any levels of stress, discomfort, or unease following a research session. Also describe any particular provisions or debriefing procedures that will be in place to ensure participants feel respected and appreciated after they leave the study. Please attach the written debriefing sheet that you will give to participants. If you do not plan to provide a written debriefing sheet, please explain why.

SECTION 9: INSURANCE & RISK CONSIDERATIONS

The appropriate arrangements concerning insurance and/or indemnity to meet the potential legal liability of the University or other external funders for harm to participants arising from the management, design and conduct of this research will be confirmed by the University's Insurance section.

Potential risk to participants and risk management procedures

Identify, as far as possible, all potential risks (small and large) to participants (e.g. physical, psychological, etc.) that are associated with the proposed research. Please explain any risk management procedures that will be put in place and attach any risk assessments or other supporting documents.

Source 3- Students

There is a power relationship between staff and students. Students may feel pressured into volunteering for an interview or for discussing only the positive aspects of their experience. Since the interview is totally voluntary, I hope some of the power relationship is minimized. I will only contact students for interviews after the final marking has been done on their submissions. The students will already have received their final mark, therefore they may be willing to take more risks and be more open concerning their experiences. As with staff, I will send copies of the rough analysis to each student and provide them the opportunity to review and edit my interpretation.

Students also have a personal tutor in the programme. (None of the students involved are my tutees.) I will encourage students to contact the Director of the Clinical Education programme if they are feeling at risk due to this research. She has agreed to

function in this capacity

Source 2-Staff

The discussion with staff members may flag up some sensitive issues. I managed this project, so if either staff member was particularly unhappy with this process or my management style, they may feel uncomfortable or stressed discussing this with me. By choosing open interviews, I hope staff members feel relaxed and confident that I am open to critical suggestions. By contacting staff formally be email, they may feel more able to deny my interview if they feel they are at risk. The interviews themselves will mimic meetings we have had. We often came to meetings with lists of what was going well and what we needed to do differently next time. This will not be a new approach to our relationship, so ideally they will feel at ease. Finally, by offering staff the opportunity to review and edit the analysis, I feel this will create a safe and risk free environment to discuss this module.

Source 1-Me

A final risk may be me. I am attempting to do two things. I am trying to evaluate and improve an e-module. However, I am also using this experience as part of an academic submission. I must be totally transparent to myself, and others exactly what I am doing and why. The borders between formal practitioner inquiry and normal self-evaluation and critique about curriculum development can easily become blurred. With all communication and requests, I have to ensure that my goals are clear and I must constantly reassess how and why I am interpreting data.

I share an office with my work supervisor. She has years of research experience and is the Degree Programme Director of the program in which I am involved. Thus, she is very familiar with the programme and educational research ethics. We have had a discussion concerning the fine line between collecting and analysing data as part of a normal development process and that of a formal inquiry. She has agreed to be critical of my process and has agreed to offer her services as general consultant to any ethical issues or concerns.

Potential risk to researchers and risk management procedures

What are the potential risks to researchers themselves? For example, personal safety issues such as lone or out of normal hours working or visiting participants in their homes; travel arrangements, including overseas travel; and working in unfamiliar environments. Please explain any risk management procedures that will be put in place and attach any risk assessments or other supporting documents.

The long hours that I will have to dedicate to this inquiry is unequivocal. However, I have planned for this personally and have authorization from my head of school for a minimum of 20% of my work time dedicated to this research. If a student or staff is particularly unhappy, or abusive towards me in the interviews, I realize there are personal and counselling services for staff I could pursue. There will be very little travel or lone working in unfamiliar environments for me.

SECTION 10: SUPPORTING DOCUMENTATION

Please supply copies of any applicable documents in support of your answers. Ensure that attached files have appropriate file names.

Document	**Attached**
Participant Consent Form	*x*
Participant Information Sheet	*x*
Participant Debriefing Document	*x*
Questionnaire(s)	☐
Outline Protocol	☐
Risk Assessment	☐
Others (please list):	

SECTION 11: DECLARATION

I certify that the information contained in this application is accurate. I have attempted to identify the risks that may arise in conducting this research and acknowledge my obligations and the rights of the participants.	
Name of Principal Investigator:	Laura Delgaty
Signed:	
Date:	

If you have any queries on this form, please contact your Faculty Ethics Coordinator or visit the website

Please email or send this form to the appropriate Faculty Ethics Coordinator

For office use only:

The appropriate Ethics Committee has considered the ethical aspects of this proposal. The committee recommends that the programme/project be:

☐ Approved ☐ deferred (for reasons attached) ☐ not approved

Name of Committee Member:	
Ethics Committee Concerned:	
Signed:	
Date:	

Email correspondence (anonymous) concerning ethics

Email response to my preliminary ethics assessment received 08 March 2011

Dear Laura,

Our Postgraduate Dean has looked at your project proposal and forwarded a copy of the ethics section to me, as you have answered "yes" to the questions around vulnerable participants and access to individuals via a gatekeeper. You will need to complete a full ethics application form and should>refer to the Faculty process at. Once completed, please forward your ethics application to Sue Pattison, your School Ethics Coordinator.

Best wishes, Faculty of Humanities and Social Sciences

Email response to my full ethical application received 21 April 2011

Hi Laura,

Thank you for your application for ethical approval. I am pleased to confirm that we are happy to approve it on behalf of the HaSS Ethics Committee subject to the following:

- inclusion in the information/consent forms of a statement that participants will not be identified or identifiable in any publication or report arising from the research

- the information sheet and consent form should be on University letterhead and should have full contact details for Laura and for her primary supervisor.

- we'll need to see the insurance office sign-off

I look forward to hearing from you when you have had time to look into this. I will probably hear directly from the Insurance Office, however if they do send you approval in the meantime, it would be very helpful if you could forward their e mail to me for my records.

Best wishes, Faculty of Humanities and Social Sciences

Email response to my revised full ethical application received 13 May 2011

Dear Laura,

I am pleased to confirm that, on behalf of the HaSS Ethics Committee, we are happy to approve your application in connection with your project entitled "Evaluation of the development and implementation of an e-learning module". The letterhead has printed out in a very small font - this amendment doesn't affect your ethical approval, we just thought it might be helpful if we brought this to your attention.

I hope your project is successful.

Best wishes, Faculty of Humanities and Social Sciences

Appendix F-Main phases of thematic content analysis

(Braun and Clarke, 2006)

	Phase	Description of the process
1	Familiarizing yourself with your data:	Transcribing data (if necessary), reading and rereading the data, noting down initial ideas
2	Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collation data relevant to each code.
3	Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme
4	Reviewing themes:	Checking it the themes work in relation to the coded extracts (level 1) and the entire data set (level2), generating a thematic 'map' of the analysis
5	Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6	Producing the report:	The final opportunity for analysis. Selections of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Appendix G- Questions and prompts guiding staff and student interviews

Questions Guiding Interview of staff (prompts in red)
Development
What did you think overall about the development/planning/ writing of this module? Why?
What problems do you think we encountered in planning? (resources/staff)
What do you think we did to get over the problems? Did it work?
Are there any problems we had that we did not solve? Why/why not?
If we had to do this entire process again, how would you go about it? What should we do or definitely not do?
What kind of problems did you have (in your capacity) that were specific to you or your role?
What did you do to get over these problems?
Are there any specific issues that were not solved? Why/why not?
If you had to perform your role in this entire process again, how would you go about it? What would you do or definitely not do?
Delivery
If we had to run this module next year (i.e. Not plan a new module from scratch what should we do differently than we did this year? Why?
What kind of problems did you encounter during delivery? Why did you use that example?
What kind of problems did you expect? Why?
What did you do about the problems? Did it work?
If someone at the Uni asked your advice on planning and implementing an e-module, what would you tell them? Why?
What was your role? What was the role of each person on the team?
What have you learned from this experience?

Questions Guiding Interview of students (prompts in red)
Delivery only
What did you think overall about how this module went? Why?
What problems do you think you encountered in this module? resources/staff/yourself
What do you think you did to get over the problems? Did it work?
Are there any problems you had that were not solved? Why/why not?
If you had to do this entire process again, how would you go about it? What should we/you/others do or definitely not do?
What kind of problems did you have specifically (in your capacity) that were specific to you as an individual?
What did you do to get over these problems? Did it work?
Are there any specific issues that were not solved? Why/why not?
If a friend or colleague your advice on taking this module what would you tell them? Why?
What was your role? What was the role of each person on the team? Did you ever contact anyone outside of the module to discuss anything?
What have you learned from this experience? Why did you choose those examples?

Appendix H- Letters to participants

Dear Participant,

As you are aware, I am a lecturer in Clinical Education within the programme and was module leader on the Utilising Technology in Clinical Education (UTCE) module we have recently developed together and delivered. I am undertaking a research project exploring e-curriculum development. As a core member of the development team, I am contacting you to ask if you would be willing to share your experiences by interview. I aim to carry out interviews with participants discussing their views about the module in general, the strengths of both planning and implementation and suggestions for future development. In order to optimise the range of views explored I would be grateful if you could be willing to participate in these interviews.

If you are willing, please indicate in a return e-mail to me, simply stating yes or no. Your responses will be entirely confidential and used only for the purpose of this study.

I have attached a copy of the information sheet outlining the aims of the project for those of you who might be willing to consider further participation.

With many thanks to you all of you for your consideration

Best wishes

Laura Delgaty

Consent Form Staff experiences of developing e-module

Name of Researcher: Laura Delgaty

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions
   YES/NO

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.
   YES/NO

3. I agree to take part in the above study and I understand my interview and its transcription are to be used only for the purposes of this study, including any publication arising out of the study. You will not be identified or identifiable in any publication arising from this study.
   YES/NO

4. I agree to the interview being audio recorded and understand that the audio recordings will be securely stored in the research base, and destroyed within 12 months of the completion of the final study report**.** **YES/NO**

5. I would like to receive a summary of the results of the study **YES/NO**
   If yes please add the postal or e-mail address by which you would prefer to receive the results

Name of Participant Signature Date

Name of researcher: Laura Delgaty

Signature Date

Laura Delgaty

Explanation of study and Invitation Letter

Dear Staff Member,

I am a lecturer in Clinical Education within the programme and was module leader on the Utilising Technology in Clinical Education (UTCE) module we recently completed. I am undertaking a research project exploring e-curriculum development. I am also enrolled in a doctoral programme at this University and this inquiry is being done as part of my submission requirements.

You answered 'yes' to a recent email I sent regarding this e-module and suggested you would be willing to share your experiences by interview. I aim to carry out interviews with participants discussing their views about the e-module in general, the strengths and suggestion for future development.

Study Title

A critical and systematic inquiry concerning the development of an e-module at the post-grad level.

Aim of the Study

- The aim of this study is to evaluate and improve the complex process of e-curriculum development and implementation by examining an e-learning module in a post graduate diploma in clinical education.
-

If you are willing to take part you will be invited to an interview with me which will last approximately one hour. Interviews will be arranged at a time and place of your convenience and will be recorded on an audiotape. The interviews will be confidential with recordings remaining anonymous, being securely stored and destroyed one year after completion of the research. Please be assured that your decision to participate in this study is totally voluntary.

Many thanks for taking the time to read this

Laura Delgaty

Staff Information Sheet – Post-interview debriefing

Study Title: A critical and systematic inquiry concerning the development of an e-module at the post-grad level.

What Happens Now?

Thank you for agreeing to help me with my study. Thank you for being interviewed. The audio-tapes will now be transcribed by me and I will analyse the transcripts. Confidentiality of participants is guaranteed:-

1. The tape will be stored securely in a locked drawer in my office. There will be no identifying details with the tapes or transcripts.
2. The transcription will only be seen and accessed by me.
3. All tapes and transcripts will be stored securely.
4. All tapes and transcripts will be destroyed within 12 months of successful completion of my degree.

If you wish to withdraw no reason needs to be given. The wish to withdraw will be respected immediately at any stage, without question, and all data will be immediately destroyed.

Further Contact

I may need to contact you further if:-

- On transcribing the audiotape, clarification is needed on meanings of statements.
- On analysing the data and allocating any of your comments to particular codings to ensure that allocation is correct and the comment maintains its meaning.
- On using any of your comments to illustrate my interpretations during the writing up, to ensure that my interpretation of meaning is correct
- You can contact me at any time for further information or to raise any concerns you may have related to the study. Should you prefer not to contact me or feel the study has, for you, raised issues you would like to discuss further then the, Degree programme Director, has agreed to act as an additional contact. Alternatively, my supervisor can be contacted.

Laura Delgaty

Consent Forms. Student participants

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Dear Participant,

As you are aware, I am a lecturer in Clinical Education within the programme and was module leader on the Utilising Technology in Clinical Education (UTCE) module you recently completed. I am undertaking a research project exploring e-curriculum development. As a student on the module, I am contacting you to ask if you would be willing to share your experiences by interview. I aim to carry out interviews with participants discussing their views about the module in general, the strengths of both planning and implementation and suggestions for future development. In order to optimise the range of views explored I would be grateful if you could be willing to participate in these interviews.

If you are willing, please indicate in a return e-mail to me, simply stating yes or no.

Your responses will be entirely confidential and used only for the purpose of this study.

I have attached a copy of the information sheet outlining the aims of the project for those of you who might be willing to consider further participation.

With many thanks to you all of you for your consideration

Best wishes

Laura Delgaty

Explanation of study and Invitation Letter Student

Dear Student,

I am a lecturer in Clinical Education within the programme and was module leader on the Utilising Technology in Clinical Education (UTCE) module you recently completed. I am also enrolled in a doctoral programme at this University and this inquiry is being done as part of my submission requirements.

I am undertaking a research project exploring e-curriculum development. You answered 'yes' to a recent email I sent regarding this e-module and suggested you would be willing to share your experiences by interview. I aim to carry out interviews with participants discussing their views about the e-module in general, the strengths and suggestion for future development.

Study Title

A critical and systematic inquiry concerning the development of an e-module at the post-graduate level.

Aim of the Study

- The aim of this study is to evaluate and improve the complex process of e-curriculum development and implementation by examining an e-learning module in a post graduate diploma in clinical education.

If you are willing to take part you will be invited to an interview with me which will last approximately one hour. Interviews will be arranged at a time and place of your convenience and will be recorded on an audiotape. The interviews will be confidential with recordings remaining anonymous, being securely stored and destroyed one year after completion of the research. Please be assured that your decision to participate in this study is totally voluntary.

Laura Delgaty

Student Information Sheet – Post-interview debriefing

Study Title

A critical and systematic inquiry concerning the development of an e-module at the post-grad level.

What Happens Now?

Thank you for agreeing to help me with my study. Thank you for being interviewed. The audio-tapes will now be transcribed by me and I will analyse the transcripts. Confidentiality of participants is guaranteed:-

- The tape will be stored securely in a locked drawer in my office. There will be no identifying details with the tapes or transcripts.
- The transcription will only be seen and accessed by me.
- All tapes and transcripts will be stored securely.
- All tapes and transcripts will be destroyed within 12 months of successful completion of my degree.

If you wish to withdraw no reason needs to be given. The wish to withdraw will be respected immediately at any stage, without question, and all data will be immediately destroyed.

Further Contact

I may need to contact you further if:-

- On transcribing the audiotape, clarification is needed on meanings of statements.
- On analysing the data and allocating any of your comments to particular codings to ensure that allocation is correct and the comment maintains its meaning.

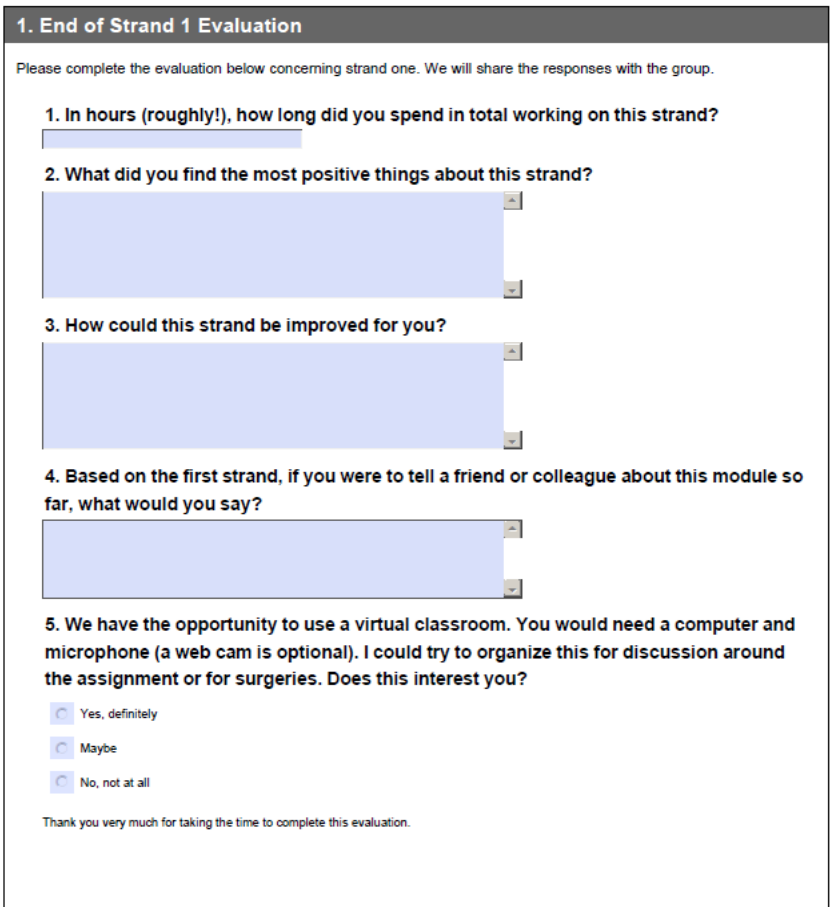
- On using any of your comments to illustrate my interpretations during the writing up, to ensure that my interpretation of meaning is correct.

You can contact me at any time for further information or to raise any concerns you may have related to the study.

Should you prefer not to contact me or feel the study has, for you, raised issues you would like to discuss further then the Degree programme Director, has agreed to act as an additional contact.. Alternatively, my supervisor can be contacted. Once again I am extremely grateful to you for helping me with my research

Laura Delgaty

Appendix I- Evaluation questionnaires of strands



1. End of Strand 1 Evaluation

Please complete the evaluation below concerning strand one. We will share the responses with the group.

1. In hours (roughly!), how long did you spend in total working on this strand?

2. What did you find the most positive things about this strand?

3. How could this strand be improved for you?

4. Based on the first strand, if you were to tell a friend or colleague about this module so far, what would you say?

5. We have the opportunity to use a virtual classroom. You would need a computer and microphone (a web cam is optional). I could try to organize this for discussion around the assignment or for surgeries. Does this interest you?

- Yes, definitely
- Maybe
- No, not at all

Thank you very much for taking the time to complete this evaluation.

1. End of Strand 2 Evaluation

There are only three questions this time! Please complete the evaluation below concerning strand two. I will share the responses with the group.

1. In hours (roughly!), how long did you spend in total working on this strand?

2. What were the most positive things about this strand?
(This could be things we have done, things you have done or things other students have done!)

3. How could this strand be improved for you?
(This could be things we could do, things you could do or things other students could do!)

Thank you very much for taking the time to complete this evaluation. Only one strand to go!

1. End of Strand 3 Evaluation

It's over! This was the last strand! Please complete the evaluation below concerning strand three. Once again, I will share the responses with the group.

1. In hours (roughly!), how long did you spend in total working on this strand?

2. What were the most positive things about strand 3?
(This could be things we have done, things you have done or things other students have done!)

3. How could strand 3 have been improved for you?
(This could be things we could do, things you could do or things other students could do!)

4. Which strand was your favourite and why?

Thank you very much for taking the time to complete this evaluation. I totally appreciate it and am looking really forward to reading the submissions. Good Luck!
Laura

Appendix J- Request of funding and response

Sent: Wednesday, March 02, 2011 3:50 PM

Good Afternoon,

I have recently written and am delivering our first fully online module. The module is called Understanding Technology in Clinical Education. So, it is a module about e-learning using e-learning as the delivery medium.

This was a huge amount of work as I knew very little about e-learning. I found writing the content and designing the delivery difficult. However, the first two strands (there are three in total) are finished and the module appears to be a success (as far as the learners are concerned!). I am evaluating each strand and I am attaching a copy of the comments. Although it is a small sample, the entire cohort filled in the evaluation! Very interesting, and they put a lot of time into the responses!

I was doing the majority of work in the evenings and weekends. This should not have surprised me! Our students are full time clinicians, so in delivering an e-module, of course this is when they can contribute. However, I did not plan for this. We are presenting a different method of learning for students, so really should relook at our models of teaching. Interestingly, none of the students have taken formal study leave and have consistently commented on how much work there is on the module. Either they were not expecting it, or not managing/pacing. This made me curious about the data we have already collected and the analytic picture we can access. This brings me to my request!

I am requesting funding for £1500. I would like to use this funding to pay an undergrad student (maths?) to perform some simple descriptive analysis on the data we have already collected. In the table below is a summary of the questions we can answer, time involved, explain what data is already collected and the reason justification. The justifications are in the final column. However, there are several other benefits that I foresee, including:

1. Inform next year UTCE (this module) - both staff and students.
2. Publish paper
3. Disseminate to Uni.
4. Share with E-learning steering group.
5. Share with UNITE
6. Contribute to my EdD
7. Create opportunity for math student
8. Contribute to school strategy and workload planning
9. Potential use of online learning with proposed Malaysian programme. This would provide valuable planning and budget information.

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Laura Delgaty

Summary of answerable questions, time involved, data collection and justification

Question answered-planning	Data already collected	Reason/justification
How many e-mails were sent pre implementation between staff and what was the focus?	Emails already saved in separate folder. Will code as tech, admin or academic and count emails and timing in relationship to start date. (15hrs)	Workload planning- preparation time and issues
How many of emails were sent pre implementation between staff and students and what was the focus?	Emails already saved in separate folder. Will code as tech, admin or academic and count emails and timing in relationship to start date. (15 hrs)	Workload planning- preparation time and issues
Questions answered-implementation	**Data already collected**	**Reason/justification**
How long did students take to complete each strand?	Self reported in strand evaluation	Help plan length of activities. Feedback to students to decrease attrition.
How long does the average contribution take?	Use time slider in learning space. Can see when each student started contributing and length of time contributing (30hrs)	Help plan length of activities. Feedback to students to decrease attrition and outline expectations and commitment.
When do students contribute?	We can map times and days that students contribute by using learning space and disc forum. (25hrs)	Help plan length of activities. Feedback to students to decrease attrition.
When do staff contribute?	We can map times and days that staff contribute by using learning space and disc forum. (20hrs)	Workload planning and preparation
Where people visit the most?	Can see which pages have the most visits (10hrs)	What pages are most popular/difficult
Where do people exit the most?	Can see which pages have the most exits (10hrs)	Where students are exiting
How many emails were sent post implementation between staff and students?	Emails already saved in separate folder. Will code as tech, admin or academic and count emails. (10 hrs)	Workload planning- implementation time and issues. What are the issues students have? How much admin are academics doing?
How many emails were sent post implementation between staff?	Emails already saved in separate folder. Will code as tech, admin or academic and count emails. (15 hrs)	Workload planning- implementation time and issues
How many hours of academic/tech and admin staff time has been used/	Each member on team (tech, admin and academic) has kept work log since implementation	Workload planning- implementation time and issues. Cost comparison.

Letter of response to funding request

Sent: 22 March 2011 09:08
To: Laura Delgaty

Subject: FW: potential funding opportunity!

Dear Laura

This request has been forwarded to me as administrator of the learning and teaching budget.

She is happy to fund the analysis that you suggest, stipulating that you provide a report of your findings to the e-learning steering group.

With regard to finding a student to undertake the analysis, I would suggest that you approach the Careers Service. They offer a range of employment and internship opportunities to students and will be able to advise you on the most suitable route to pursue. I can really recommend this approach, having recruited two high quality interns via the Careers Service in the last year or two.

As a next step, please provide a budget code to my Office Manager, so that we can arrange the transfer of funds.

Kind regards

Head of Quality in Learning and Teaching

Appendix K- Requirements and Timeline for UTCE 2011

January			
3-9	**10-16**	**17-23**	**24-30**
-open for review and to log onto site -no activities listed -welcome orientation message only -picture upload	-pre-test web form -blog -bulletin board -wiki -online tutorials (in flash?) -MCQ web form with data collection -access library reading -ranking exercise web form to collect data -MCQ/drop down questions with no need to collect data -show examples of other sites	-pre-test web form -blog -bulletin board -wiki -online tutorials (in flash?) -MCQ web form with data collection -access library reading -ranking exercise web form to collect data -MCQ/drop down questions with no need to collect data -show examples of other sites	-discussion forum/bulletin board -wiki -access library reading -blog

February			
31—6	**7-13**	**14-20**	**21-27**
discussion forum/bulletin board -wiki -access library reading -blog	discussion forum/bulletin board -wiki -access library reading -blog	-blog -bulletin board -wiki -online tutorials (in flash?) -access library reading --MCQ/drop down questions with no need to collect data	-blog -bulletin board -wiki -online tutorials (in flash?) -access library reading -MCQ/drop down questions with no need to collect data

March				
28-6	**7-13**	**14-20**	**21-27**	**28-april3**
discussion forum/bulletin board -wiki -access library reading -blog	discussion forum/bulletin board -wiki -access library reading -blog	-pre-test web form -blog -bulletin board -wiki -online tutorials (in flash?) -access library reading -MCQ/drop down questions with no need to collect data -deliver feedback on MCQ	-pre-test web form -blog -bulletin board -wiki -online tutorials (in flash?) -access library reading -MCQ/drop down questions with no need to collect data -deliver feedback on MCQ	discussion forum/bulletin board -wiki -access library reading -blog

April			
4-10	**11-17**	**18-24**	**25-01**
discussion forum/bulletin board -wiki -access library reading -blog	discussion forum/bulletin board -wiki -access library reading -blog	discussion forum/bulletin board -wiki -access library reading -blog	discussion forum/bulletin board -wiki -access library reading -blog

May			
2-8	**9-15**	**16-22**	**23-28**
discussion forum/bulletin board -wiki -access library reading -blog	discussion forum/bulletin board -wiki -access library reading -blog	discussion forum/bulletin board -wiki -access library reading -blog	discussion forum/bulletin board -wiki -access library reading -blog

*At some point I may use Elluminate or something similar if appropriate/ necessary. This should not have any effect on the requirements.

Appendix L-Letter to DPD requesting resources for next cohort

As of Sept 16, 2011 this is the work envisioned to assist in the development and scaling up of the UTCE module

M (minimum)

- Need to redo activity 4 in strand 1
- Upload all reading once it has been ok'd by authors/editors
- Review all links, videos, etc.
- Automate assessment submission process
- Include all timings for activities
- Re-link all discussion forums and wikis (or whatever we are using)
- Study guide/reading list /assessments etc. need to be taken down and revised ones uploaded and linked (do this or show admin team how to)
- Allow students access to last year's assessments
- Created mailing list for everyone – general and esp. if they are split into groups
- Strand one technology in the news quiz must be rewritten and uploaded

S (if scaled up)-now 16 people registered. This current system will not support this.

- Learning spaces- these won't scale up easily, and I think we were discussing new software. Depending on numbers, we might have to split people into two groups.
- Break down discussion forum into two groups if numbers get above 10
- Redo wikis in strand 1, 2 and 3 as the activities only allowed 8 participants.

Q (progress quality)

- I believe new software is now available for delivering e-learning. I would need a demonstration and SUPPORT with this
- Ability to upload avatars themselves and have these corresponding pictures when they contribute to discussion forums
- As above but with academic staff
- Meet the group information automated instead of manual compilation for me
- MCQ questions automated instead of manual
- Set up synchronous chat- link to activities
- Upload Andy K's video as taster on main site
- Corresponding pictures on learning spaces
- Collect data (back end) from MCQ and feedback in strand 3 to demonstrate computer generated feedback in use

Appendix M- Head of School letter (response to workload planning request)

Nov 10, 2011

Dear Head of School,

I have attempted to complete the workload planner, but have some concerns re: online teaching. There does not appear to be anything specifically within this plan to address the time involved and address alternative models of teaching. From my experience last year, and certainly from the literature, teaching at a distance is far more time consuming than face to face. Please find below literature in support of this:

- Jewett (2000) - tutors spend twice as much time tutoring students in an online environment than face to face.
- Laurillard (2000) suggests that converting 40% of a course's material to an online format will increase staff time by 50% during the course and 120% on production time.
- Carlock *et al*. (2001) suggest there is a fourfold (16hr per student for online teaching vs. 4 for in-class) increase in academic time involved in e-teaching.
- Brown (1998) found distance education courses created 40-50-% more work than traditional teaching.
- Ryan *et al*. (2005) suggest that more than 300 hours were required to convert a traditional course to an online format

While it is possible that the number of teaching hours might be captured, the module leader and personal tutor responsibilities are definitely not represented. My own personal experience of this is backed up in the literature; one of the main barriers and obstacles to institutional development of DL is managers underestimating the full cost to lecturers (Jewett, 2000; Carlock *et al.*, 2001; Brogden and Couros, 2002; Howell *et al.*, 2003; Laurillard, 2007). The unrecorded hours that go into distance teaching have serious implications on my workload planning model and I would assume others at my level. Therefore, I think it is important that institutionally, this information is fed back to managers. The opportunity to be involved in e-learning has been extremely rewarding to me, and it is definitely an area I hope to pursue. Happy to discuss.

Laura Delgaty

Appendix N- Letter to new cohort outlining time expectations

10th January 2011

Happy New Year!

I am really excited that you have enrolled in UTCE this year. As you know, there is no face to face contact on this module, it is all online. Last year was the first year it was run, and it went really well.

However, in an effort to improve, I want to give you a bit of background. All students completed, and all students passed, although one student had to resubmit as he/she gained unsatisfactory on the first submission.

Feedback was really positive and, to be honest, was one of the most rewarding things I have been involved with at the University.

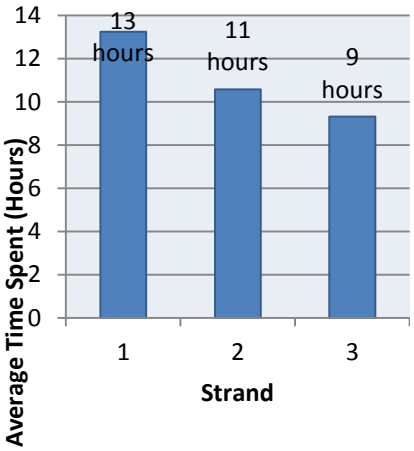
However, one of the major problems students had was one of time. Using web analytics, we were able to track (anonymously!) when students were working. I have included it below so you can have some idea what happened last year.

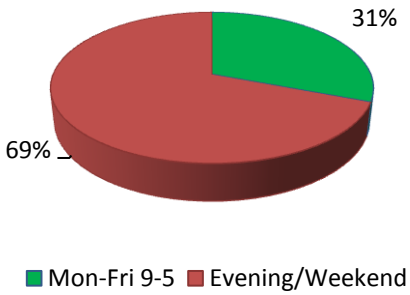
Students consistently explained they were unprepared for the workload and wished they had booked study leave or made changes to personal commitments.

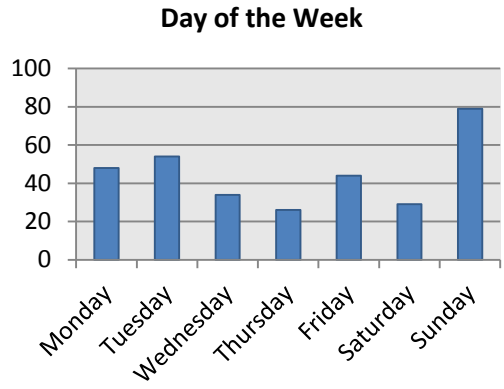
So, have a look at the timings. By no means is this when you have to work! I just wanted to give you some context to plan this semester. Also, I encourage you to plan time with family and work to accommodate this. If you need anything from us (to give to your employer etc.) let us know what we can do to help. Employers may be less eager to offer study leave to staff for an online module, but the amount of work expected is no different than if you were coming to study days. Remember, there are three 'strands' (**Jan 31-Feb 14, Mar 5-Mar19 and April 13-27**). This is when you will be required to work and actively contribute. Please put the dates in your diaries!

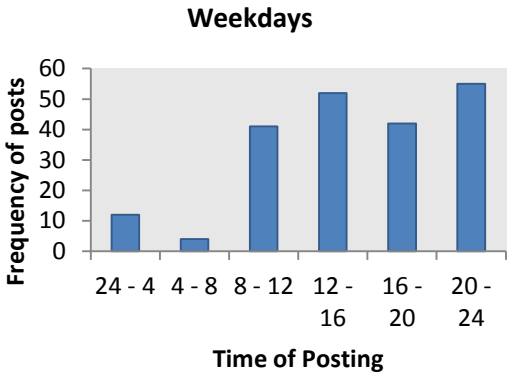
Good luck. If there is anything we can do to help, let us know.

Below, please see self-explanatory results to help you plan your time!









So, most people completed the strands in around 10 hours. Most of the posted work occurred outside of 'work' hours, very late at night and on Sundays. If this has not convinced you, please find below two (of many) final comments from students!

> *'Time management- time management was the thing I found hardest. For the other modules, I booked study leave, I booked time off work, whereas with this, I thought I could fit it in- and actually- it was quite time consuming- really and I had not really factored that in. My preconception was that I could fit it around the other activities I do and it was quite difficult to do that.'*

> *'Tough to find the time. I had not realised what the time commitment would be and I had not formally built time into my schedule. I had thought I would fit it in one way or another'*

Good Luck. Please read the above and plan carefully and let us know if you need anything from us.

Appendix O -Student Feedback in response to time letter

Responses from module's second evaluation (2011-2012).

This question was asked in response to information concerning time involved in module.

1. Before the module started you were sent information concerning dates the strands were open and rough time expectations. What did you think about that information?

'Really useful to have information sent to as it helped focus and plan the time needed, also as the cause was done through distant learning it was nice introduction. Think it was helpful to get the info though, because I knew to prepare properly and put time aside'

'The information was useful and allowed me to try and plan/request leave to complete the modules'

'I found this very useful and it was good to present actual evidence from last year to back this up. I was fortunate that I had booked some time off work already and I found that the estimated times were in the correct ballpark.'

'That information was useful to plan time and work. I cannot recall exactly when I received this (sorry), but as early as possible is important, alongside the information about how much time is involved!'

(Feedback from student cohort 2011-2012)

References

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