

The Temporal Integration of Connected Study into a  
Structured Life: A Grounded Theory.

By

**Helen M P Scott**

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## DECLARATION

Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

Signed:

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Helen M.P. Scott

## **Abstract**

Today's technology, which enables audio, video and text based communication online, has enabled the adoption of social learning pedagogies in the innovative design of online collaborative learning opportunities. In thus enriching the experience of the online learner it has also unwittingly added to the pressure experienced. The Grounded Theory research method has been used to identify the main concern of adult online distance learners as being that of fitting online study into their lives; specifically, combining the time design of the connected learning opportunity into their individual personal commitment structures can be problematic. This thesis is based on a substantial collection of primary and secondary data. Primary data collection was conducted over four years and involved interviewing 32 adult online learners from 9 different countries. Further data collection involved obtaining detailed observations garnered over 45 weeks on postgraduate learning opportunities and the equivalent of 36 months of supervising online project students from 3 different countries. This study identifies the basic social psychological process of temporal integration as being the method by which this concern is continually processed. The three stages to this iterative process are juggling, engaging and evaluating. The output of the evaluation stage – the propensity to study - forms a feedback loop to the juggling stage and impacts upon the time and energy expended in future juggling and engaging. Learners are more or less successful in their integrating activities and four types of learners are identified; jugglers, strugglers, fade-aways and leavers. To the practical world of online learning this thesis offers a new way of looking at time and workload; suggests new ways of designing for and supporting persistence; and offers connected learners and tutors strategies for managing the temporal integration process. This thesis refreshes the professional discourse regarding student attrition and retention, persistence and departure by offering a conceptual theory of learner continuation with which to organise and extend current understandings.

Key words: temporal integration, Grounded Theory, online learning, e-Learning, connected learning, part-time distance learner, online learner, connected learner, jugglers, strugglers, fade-aways, leavers, attrition, retention, persistence, departure, learner continuation.

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With love and admiration.

Yelm x

## Table of Contents

Chapter One: Introduction.....	5
Scope of thesis.....	6
Overview of Thesis.....	7
Form of the Thesis.....	8
Overview of the Classic Grounded Theory Process.....	11
Summary.....	13
Chapter Two: Background to Connected Learning.....	14
Connecting People.....	14
Focus on Pedagogy.....	20
Summary.....	29
Chapter Three: Doing the Study.....	31
Choice of Research Method.....	31
The Researcher.....	37
Beginning the Grounded Theory research process:.....	42
Data Collection.....	43
Data Analysis.....	53
Structure of Theory.....	69
Summary.....	70
Chapter Four: The Temporal Integration of Connected Study Into a Structured Life: A Grounded Theory.....	73
Overview.....	73
A Typology of learners.....	82
Summary.....	93
Chapter Five: Literature Review.....	95
Nesting the theory.....	95
Tinto's model of institutional departure.....	98
Kember's Model of Student Progress.....	108
Examining the Literature for Emergent Fit With This Study.....	116
Organising the Literature.....	121
Summary.....	132
Chapter Six: Designing and Managing for Persistence.....	134
Designing for Persistence.....	135
Managing for Persistence.....	152
The crux of the matter.....	157
Summary.....	158
Chapter Seven: Contributions, Limitations, Opportunities and Conclusions.....	160
Contributions to Knowledge.....	160
Limitations.....	165
Opportunities.....	168
Conclusions.....	171
References.....	174

## Table of Figures

Figure 2.1 Connected Learners .....	15
Figure 2.2 The isolation of an early mainframe .....	15
Figure 2.3 Timeline .....	17
Figure 2.4 WiredRed Many to Many multimedia communication software.....	19
Figure 2.5 Englebart's mouse .....	20
Figure 2.6 Presentation of Work .....	26
Figure 2.7 Example of a Week's Work.....	26
Figure 2.8 Knowledge Forum.....	27
Figure 3.1 Salmon's Model of Teaching and Learning Online through CMC .....	47
Figure 3.2 Sample Chat Plan and Seating Plan for Group Chat Sessions.....	49
Figure 4.1: Example dimensions of an online learner's personal competencies	75
Figure 4.2 Propensity to Study: Relationships .....	80
Figure 4.3: Propensity to Study expressed as an Algorithm: .....	81
Figure 5.1 Manner and Mode of Attendance by researcher.....	98
Figure 5.2 Tinto's Longitudinal model of institutional departure .....	100
Figure 5.3. A conceptual Schema for Dropout from College.....	106
Figure 5.4 Kember's "Full model of student progress" .....	107

## Table of Tables

Table 2.2 Definition of Types of Course.....	21
Table 3.1 Methodological Approaches to Social Science (Mitroff & Kilman, 1978)	41
Table 5.1 Summary of Codes from Appendices E and F .....	118
Table 6.1 How much time do you need – Open University .....	144
Table 6.2 The Time-matching problem .....	148
Table 7.1 Contributions to Knowledge .....	162

## Table of Text Boxes

Text Box 3.1 Tutors' Concerns.....	50
Text box 3.2 Extract From Email to Group Members .....	51
Text box 3.3 Excerpt from Memo on Method .....	54
Text Box 3.4 Attempting to Identify the Core Category .....	55
Text Box 3.5 Memo on Time .....	57
Text Box 3.6 Memo on Method .....	59
Text Box 3.7 Memo on Categories.....	60
Text Box 3.8 Memo on Core Category.....	61
Text Box 3.9 Memo on Method .....	63
Text Box 3.10 Memo on Theoretical Coding.....	66
Text Box 4.1 Vignette: Time Imperialism and Time Matching .....	85
Text Box 5.1: Method Notes.....	102
Text Box 5.2 Method Notes .....	109
Text Box 5.3: Method Notes.....	116
Text Box 6.1: Increasing the value of the learning opportunity. ....	155

## Chapter One: Introduction

In 2004 the market in the United States for 'wholly online' degrees was estimated to be US\$5 billion. Also in 2004 the Higher Education Funding Council for Education (HEFCE) announced the effective demise of the £50 million UKeU online university project. Of the 5600 projected students, only 900 had enrolled (The\_Observatory, 2006). The UkeU project had also planned to provide 'wholly online' courses; to markets defined very much along the lines of the traditional structure of UK universities, viz; undergraduates, postgraduates, continuing professional development (CPD) and continuing education and training (CET) cross-referenced by the country in which the learning was accessed (CHEMS, 2000, p. 16). The House of Commons Education and Skills Committee blamed the failure of UkeU on a largely supply-driven approach, reporting:

“There was no systematic evaluation of the markets, no thorough and robust market research and no understanding of consumer demand. This was typical of UkeU’s supply-driven rather than demand-led approach.”  
(Education\_and\_Skills\_Committee, 2005, p. 17)

The Leitch review of skills (2006) recommends a demand-led approach to the development of the nation’s vocational skills insisting that provision “must be demand-led rather than centrally planned”. Leitch would like Higher Education Institutions (amongst others) to become more responsive to demand, stating that since: “No one can accurately predict future demand for particular skill types. The framework must adapt and respond to future market needs”. To this effect Leitch recommends that by 2010, changes in funding are made such that the Government “route all public funding for adult vocational skills in England, apart from community learning, through” newly developed systems which puts the learners and employers in the position of purchasers of vocational education and training. This, coupled with the fact that HEFCE now implements an e-learning strategy of supporting and encouraging Higher Education Institutions to embed e-learning into their individual strategies, means that HEIs will become individually responsible for their e-learning and vocational training delivery and design, and



individually or in consortia, will represent the UK in the global markets for online learning.

The underlying assumption of a demand-led approach to the provision of e-learning and vocational education and training is that in order to gain revenues, the institutions will have to attract and satisfy their customers. The UkeU found attracting customers a problem. Retaining customers is also a problem. Dropout rates from wholly online courses of 70% are bandied about and anecdotal evidence of 90% dropout is heard (Simpson, 2003, p. 1). High dropout rates of 28.4% on an online undergraduate course and 'low' dropout rates of 14.2% on a postgraduate course are reported by Pierrakeas, Xenos, Panagiotakopoulos and Vergidis (2004). The provision of online learning can thus be problematic and is marked by a shortage of data on and understanding about the markets for online learning. This research study emanated from a desire to improve the online learner's experience of online learning and is one of few that seeks to understand the learner's experience from the online learner's<sup>1</sup> point of view. In doing so it adds to current understandings of the market for connected learning on vocational courses.

### **Scope of thesis**

This research study focuses on the substantive population of adult online distance learners. Initially focusing on postgraduates on vocational distance learning courses, the study was extended by literature review to be of relevance to those part-time connected learners on vocational courses, be they campus based or distance learners, postgraduates or undergraduates.

The aim of the research is to understand the main concern of the substantive population and how that concern is processed, in order to inform practice. The research questions are thus:

- What are the issues that adult online learners face?

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<sup>1</sup> the notion of a connected learner is addressed in Chapter 2, and refers to an individual studying on an online course with a pedagogical design of collaboration. For the purposes of this introduction, e-learning, online learning and connected learning can be used interchangeably to mean adult learners studying part-time on vocational online courses.

- How are these issues resolved or processed?

The research method Grounded Theory (e.g. Glaser, 1998) was used to develop a theory of explanation and in the context of part-time, connected, vocational learning opportunities the following thesis is offered.

### **Overview of Thesis**

From the point at which a learner commits to undertaking a course of study, and conceivably some time before, that learner holds an intention to study. This research offers a theory which explains how that intention to study is strengthened or weakened as a course of study progresses. The theory suggests that it is much less a matter of learners deciding to persist with or depart from a course of study and much more a matter of continuing upon a course of action embarked upon - of maintaining an intention. The theory offers an explanation of the process enabling learners to engage in the learning experience and explains how for some students, the intention to learn is weakened to the extent that they leave the course, most often by default. The theory also explains that for some other learners their conditions change such that learning is rendered relatively valueless and these learners are proactive in the decision to leave. For those cases where a learner ceases to continue a course and for those cases where an active decision to persist or depart is made, the reasons are, and the reasoning is, highly personal. This has implications for the professional discourse on student retention and attrition. At the institutional level the concern is to do with understanding why students leave and what institutions can do to retain students. This study suggests that there is much that institutions can do to increase retention rates. In particular, institutions are advised to pay great attention as to what it is that their students value in terms of their learning experiences, seek to provide what is valued, seek to provide the optimum temporal conditions under which learners can succeed and support learners in the temporal integration process. This process, the temporal integration of connected study into a structured life, has three stages – juggling, engaging and evaluating and a feedback loop. The output of the evaluation stage, the individual's propensity to study, feeds back into the juggling stage, influencing the level of effort (time and energy), which is input into juggling commitments in

order to engage in study. The theory also suggests a typology of learners which can be used to predict which learners are likely to be of which type and thus how they are likely to experience the temporal integration process. The study thus also offers tutors guidance on how to support learners and it offers learners guidance both on managing the temporal integration process as well as offering new understandings by which to manage change of those conditions over which they have control

## **Form of the Thesis**

Phillips and Pugh (2000, p. 65) suggest that a

“thesis should contain a review of relevant literature, a description of what has been done, what came out of this, a discussion of these results and finally some conclusions that can be drawn and suggestions for future work. Stated baldly, these sections are: Introduction (including Aims), Literature Survey, Method, Results, Discussion, Conclusions.”

The form of this thesis will differ from that model and the sections will be: Introduction (including Aims), Background, Method, Grounded Theory, Literature Review, Implications, Limitations and Conclusions. This is because the research design is an exploratory design using a particular method having its own dictums and requiring a particular form. Thus:

Chapter One explains the scope of the research, provides an overview of the thesis and explains the form of the thesis. Then follows an overview of the research method to orientate readers unfamiliar with the method.

Chapter Two provides a background for the study and introduces the notion of ‘connected learning’ and traces the development of the enabling technologies and the application of pedagogy. It ends with the rationale for this research study

Chapter Three commences with a rationale for the choice of the method both in terms of its appropriateness to do the job in hand and in its compatibility with the researcher before detailing the implementation of the research method. The proof

of rigorous adherence to the Grounded Theory research method is in the developed theory. If the theory fits, works, is relevant and is modifiable (Glaser, 1992, p. 15), then the implementation has necessarily been rigorous. This research study is characterised by its rigorous adherence to the method – to the extent that the researcher has been challenged as unquestioning. Having made the decision that the method was an appropriate choice early in the chapter, issues of the design and management of online interviews are discussed; as is the two month pilot study run to test the online interviewing procedures and techniques; followed by a discussion of the main data collection process. This section concerning online data collection techniques comprises a contribution to the development of the Grounded Theory research method. Chapter Three also contributes to the literature on the implementation of the research method by paying close attention to the implementation of the data analysis stages and the careful development of a Grounded Theory.

In terms of Phillips and Pugh, Chapter Three provides a description of what was done. In the same terms, Chapter Four details what came out of what was done. The output is not, however, results or findings, the output is a theory of explanation. Chapter Four therefore explicates the Grounded Theory: “The Temporal Integration of Connected Study Into a Structured Life”. It is the main contribution to knowledge of this thesis.

The principle difference in the structure of this Grounded Theory thesis to theses using different research designs, is in presenting the literature review after the presentation of the Grounded Theory<sup>2</sup>. Firstly, because of the inductive nature of the early stages of the research process, the method does not require an early literature review from which to deduce an hypothesis. Secondly and more importantly, the researcher is enjoined not to read the literature before data analysis in order to encourage the researcher to be open to the concepts as he or she identifies them. This is an exploratory research method and the concern is that

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<sup>2</sup> Grounded Theorists do not term the output of their research method ‘findings’ but readers unused to this method might find it helpful to think of the developed Grounded Theory i.e. the output of the method as ‘findings’. The difference being that the grounded theory is presented as a conceptual theory about a substantive area/population and not as the results achieved during the testing of hypotheses for example.

reading the literature first, may encourage the identification of received concepts and wisdoms identified by others, and which may or may not be relevant to the current study (Glaser, 1998, p. 68). Consistent with the Grounded Theory method, the literature review for this study was therefore conducted after the development of the theory. Some Grounded Theorists thread the literature reviewed throughout the Grounded Theory chapter(s) (e.g. Gynnild, 2006). Others present the literature review after the presentation of the Grounded Theory (e.g. Higgins, 2006, p. 9; p. 225). The intimate relationship of this theory with the literature means that I prefer to present this grounded theory and then to nest it into the existing literature. This will enable the reader to more easily distinguish between what is new, what existed before and what the implications for the literature are. The literature review will therefore be placed after the Grounded Theory chapter and will thus comprise Chapter Five.

Chapter Six is similar to a discussion chapter. It is not however a discussion of results or findings; what matters to a Grounded Theorist is the implications of the theory. Chapter Six therefore discusses the implications of the theory for policymakers and providers and consumers of connected learning.

Chapter Seven summarises and proposes the contributions to knowledge, examines the limitations of the study, the opportunities for future research, and the trustworthiness of the study before offering the conclusions of the thesis.

Two further notes on form; text boxes are used throughout the thesis as textual illustrations of the issues concerning the implementation of the method or development of the theory.<sup>3</sup> And in Chapter Four, italics have been used the first time a grounded theory concept is introduced to help the reader to recognise it as such but normal font has been used thereafter to minimise disruption to the reader's flow.

This chapter will continue with a brief overview of the Classic Grounded Theory research process.

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<sup>3</sup> It is suggested that readers treat text boxes as they would a figure or table, perhaps leaving the text boxes until they have read the entire section and returning to them when convenient.

## Overview of the Classic Grounded Theory Process

### A Grounded Theory

“tries to understand the action in a substantive area from the point of view of the actors involved. This understanding revolves around the main concern of the participants whose behaviour continually resolves their main concern. Their continual resolving is the core variable.”(Glaser, 1998, p. 115).

The first goal of the Grounded Theory researcher is therefore to “discover the core variable as it resolves the main concern” (Glaser, 1998, p. 115) which also marks the end of the first stage of analysis. The research process is characterised by looping, that is, as a researcher develops the theory, she can revisit stages as necessary. Bearing this in mind, the process is:

- Data collection and open coding
- Memoing throughout the study
- Selective coding
- Theoretical sampling
- Theoretical coding
- Sorting
- Write up

Which terms are briefly explained below and examined more fully in Chapter Three.

### Data Collection

Interviews and observations carried out in the field are popular sources of material. However, the Grounded Theory maxim ‘All is data’ (Glaser, 1998, p. 8) means that data can legitimately be gleaned from any source e.g. newspapers, secondary data, and chance conversations. Data collection and open coding occur simultaneously.

### Open Coding

The output of the first stage of open coding are ‘substantive codes’. Codes are an abstraction, a conceptualisation and are achieved by asking two neutral questions: “What category or property of a category does this incident indicate? What is the

participant's main concern? (Glaser, 1998, p. 140). The development of a substantive code entails coding data incident by incident – where an incident can for example, be a line, page or a document. The researcher thus open codes to generates concepts (e.g. Compliance) and properties of concepts (e.g. degree of compliance)<sup>4</sup>. Each incident which indicates a concept or property becomes one of the indices for that concept or property. Thus indices of a particular concept, are interchangeable for one another. In identifying the concepts and properties of concepts, each incident is compared with other incidents and with the emerging concepts and properties. This is known as the 'constant comparative method'. The constant comparative method is also used during later stages of coding. Open coding continues until the core category has been identified.

### **Selective Coding and Theoretical Sampling**

Once the core category has been identified, the researcher then selectively codes for the core category and related categories, ignoring data that are not relevant. Theoretical sampling means that further data collection is focussed on obtaining data relevant to the core category and related categories. At this stage, interview questions, which initially have to be neutral, can now be more directed since they are grounded in the concepts discovered in the data. Coding continues until the core category is, and related categories are, 'saturated'. Saturation is achieved when no further properties are identified from the data, where incidents coded merely provide more indicators of existing properties. Theoretical sampling and saturation delimit the study such that the data need not be overwhelming.

### **Memoing**

Memoing is carried out throughout the process and a memo holds the ideas the researcher has about a concept or property of a concept and how concepts relate to each other. "Memos capture and keep track of the emerging theory" (Glaser, 1998, p. 177). As the ideas develop there will be memos on memos.

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<sup>4</sup> A property may also be a dimension, where the dimension measures the degree of the concept. In respect of the concept 'compliance', there are degrees of compliance ranging from full compliance to non-compliance. The concept of 'compliance' is thus further defined by its property and dimension. 'Compliance' is an aspect of the 'Propensity to Study' and is an outcome of the 'evaluation' stage.

**Theoretical Coding, Sorting and Write-up**

Theoretical coding is the process of identifying the theoretical code(s) which conceptualise how given concepts relate to each other. Sorting literally involves sorting the memos into piles by concepts and these two stages can occur simultaneously. "Sorting a rich volume of memos into an integrated theory is the culmination of months of conceptual build up" (Glaser, 1998, p. 187). "The write up stage is just that writing up the piles of memos" into a coherent body of work, (Glaser, 2005b). Thus:

"A well constructed grounded theory will meet its four most central criteria: fit, work, relevance and modifiability. If a grounded theory is carefully induced from the substantive area its categories and their properties will fit the realities under study in the eyes of the subjects, practitioners and researchers in the area. If a grounded theory works it will explain the major variations in behaviour in the area with respect to the processing of the main concerns of the subjects. If it fits and works the grounded theory has achieved relevance. The theory itself should not be written in stone or as a 'pet', it should be readily modifiable when new data present variation in emergent properties and categories. The theory is neither verified nor thrown out, it is modified to accommodate by integration the new concepts. When these four criteria are met, then of course, the theory provides a conceptual approach to action and changes and accesses into the substantive area researched." (B. Glaser, 1992, p. 15)

**Summary**

This chapter has detailed an overview of the thesis, its scope and its form. It has provided overview of the research method process and the criteria for evaluating a Grounded Theory study. The following chapter will provide a background to the research, tracing the development of the enabling technologies and the application of pedagogy to online learning.



## Chapter Two: Background to Connected Learning

The distance learner by correspondence course uses a well defined and well understood infrastructure through which to receive learning materials and return completed work. The infrastructure for online learning is new and is less well understood. And, whilst offering increased levels of communication (over correspondence models), the infrastructure enables opportunities for innovative pedagogical design, changing the nature of distance learning, it also offers the potential for failure. Later in this thesis, technology will earn relevance as a structural condition under which connected learning takes place.<sup>5</sup> The purpose of this contextualisation is to tease out the strands of what that technology comprises to highlight the relationship between technology, pedagogy and design. For the learners of this study, technology comprises all those systems, processes and equipment that combined, connects him or her to the learning opportunity and to other learners. Technology is an issue for these learners but is not the same problem that it was to the early online distance learners. Nor is it the problem that is likely to present itself to future online learners in those countries who are developing their telecommunications infrastructure. The consequences however are similar – technology eats time! The following chapter will provide an overview of the key technical developments and the pedagogical opportunities enabled by those developments.

### Connecting People

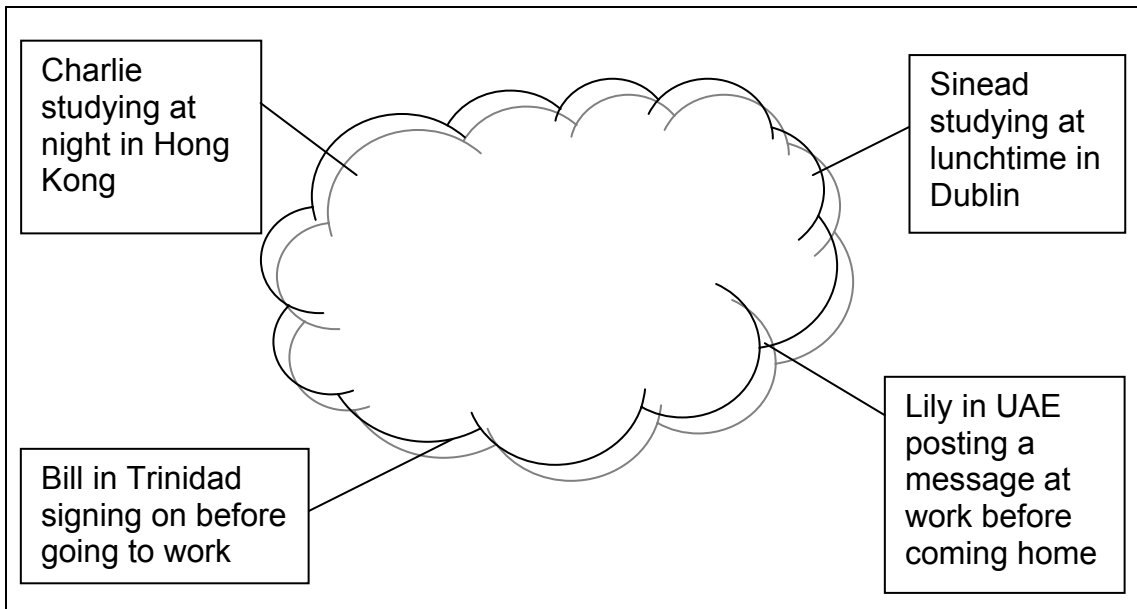
Essential equipment for today's online learner is a personal computer or laptop and a connection to the Internet. This simple statement belies the enormity of the parallel development of networks, computers and pedagogy which underpin the development of connected learning. Connected learning is a new phenomenon, being probably not more than ten years old, and today's connected learner can be situated anywhere in the world learning with others also situated anywhere in the world. These learners are connected by language and technology. They have computers; desktop, laptop or pocket and are connected to the Internet by wires or

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<sup>5</sup> Clearly, online learning cannot happen without technology, which could explain why so few participants for this study came for example, from Eastern Europe where the telecommunications infrastructure is relatively undeveloped. The Internet is still in its infancy; globally there are billions of people yet to reach. And therefore for whom online learning is not an opportunity.

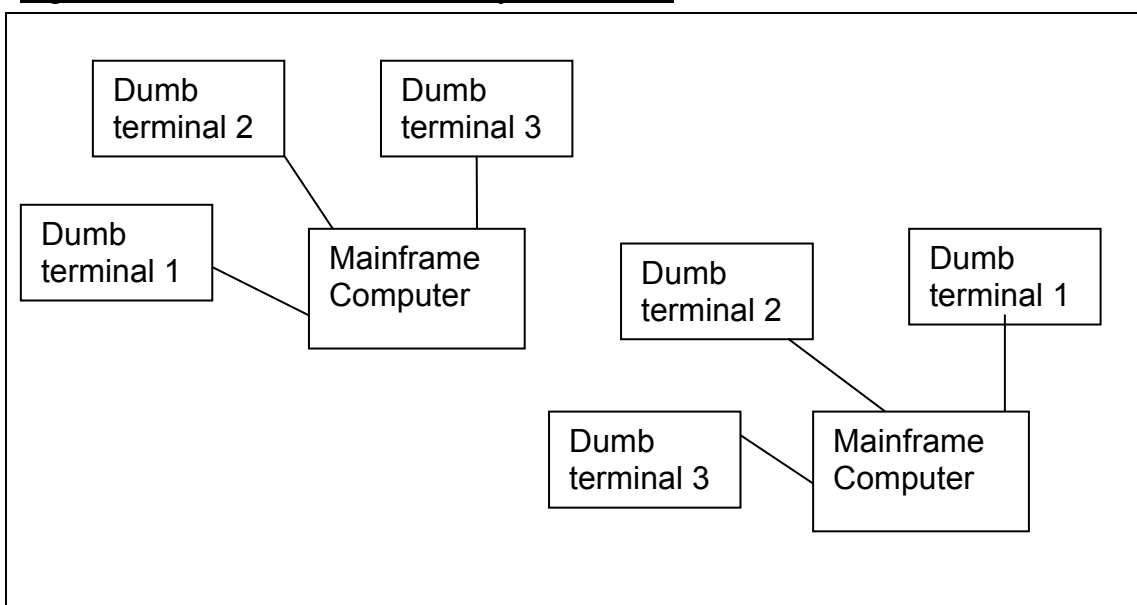
radio waves. Figure 2.1 shows a group of learners each connected to the Internet by indeterminate means working in their separate time zones.

Figure 2.1 Connected Learners



Compare this to the example in Figure 2.2 and to the first days of computing when a single (huge) computer was attached by cables to dumb terminals which were capable only of sending requests and receiving responses from the mainframe. A single, isolated entity.

Figure 2.2 The isolation of an early mainframe



The story of the development of the computer from isolated technological tool to social instrument is fascinating and complex and is told eloquently by Campell-Kelly & Aspray (2004) and Rutter (2005). Appendix A details how these authors traced the development of networks and personal computers from 1970 – 1995 and Figure 2.3 uses a timeline to illustrate key moments of that period. One of the earliest networks, and the network from which the Internet network evolved was the four-computer ARPENET network, established in the USA in 1970. In the UK the earliest networks came from the academic world and throughout the 1970s other small networks sprang up around the world. At the same time, computers became smaller. With the advent of the personal computer (PC), computers were de-coupled from terminals such that computers became stand-alone. During the 1980s networks grew and PCs became connected as first one then other huge, but separate, networks emerged for home and business users. From these separate networks, there evolved one predominant network, the Internet and overlaying the Internet grew the World Wide Web. Wireless technology rendered some networks free of cables and ubiquity (of access to the Internet), portability (of computers) and mobility (of users) became the norm in the developed world<sup>6</sup>. Key to all this is interoperability. Computers need to be able to communicate with each other and interoperability is facilitated by the adoption of internationally accepted standards which enable developers to build the computers, programs and networks which can communicate and connect. The timeline in Figure 2.3 emphasises just how recent is the development of the Internet and the underlying telecommunications infrastructure and how applications of the Internet are even more recent. UK accredited online learning for example was simply not possible for learners in the UK until at least 1995 because internet service providers were not widely established.<sup>7</sup>

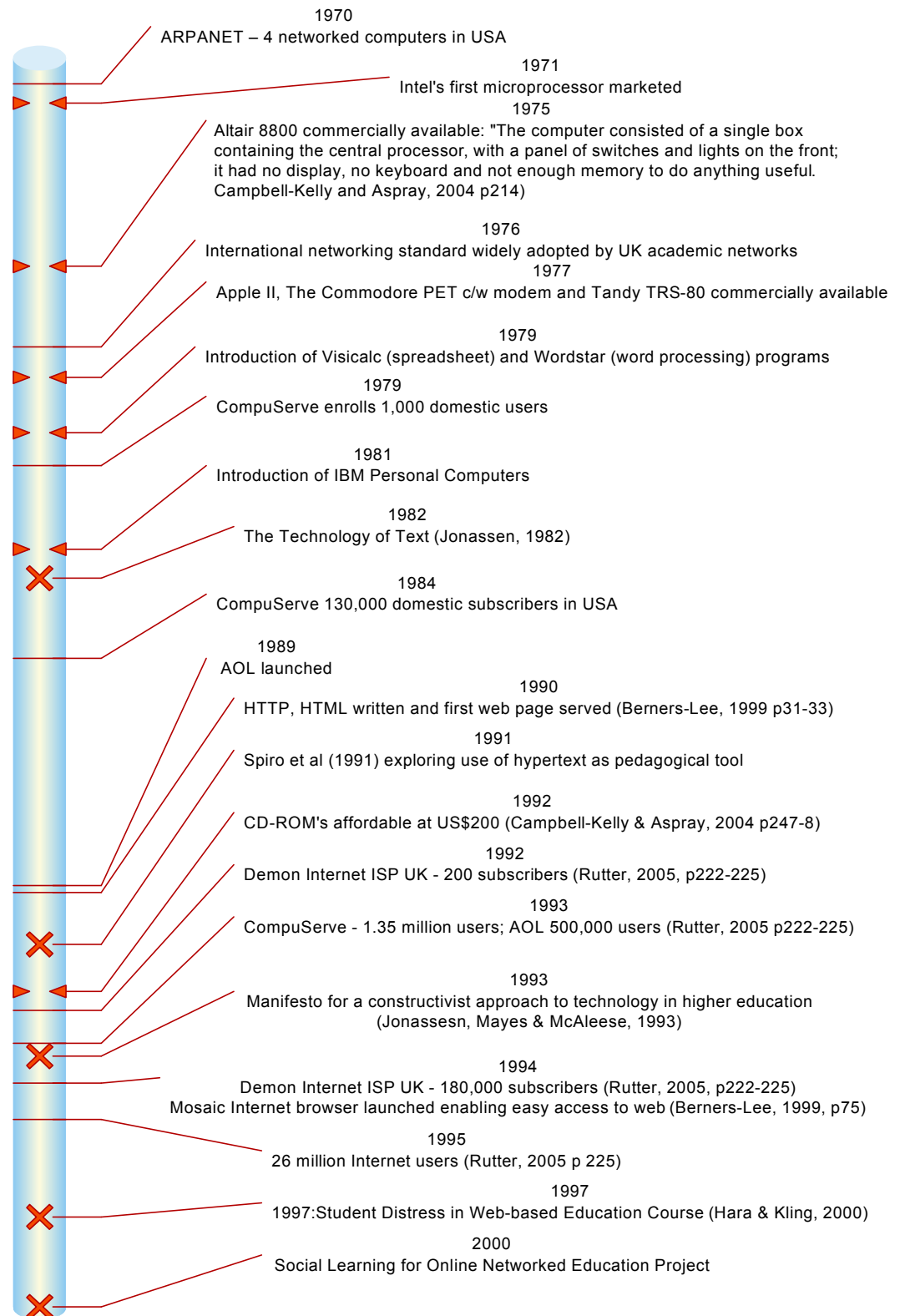
The story of the pedagogical adaption to computing technology is similarly one of isolation to connection. In isolation, distance learning is driven by a didactic approach of delivery of content to learner - where content is literally delivered by

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<sup>6</sup> And became the subject of much academic interest e.g. The 2004 Conference of Association of Internet Researchers: 'Ubiquity?' (<http://aoir.org/2004/>) ref

<sup>7</sup> Whilst the closed networks of CompuServe and AOL were available, gateways between each of these and with the Internet network and thus the UK academic networks were small

**Figure 2.3 Timeline**



the postman and constrained by the medium – paper and whilst the UK Open University used television to broadcast lectures from the 1960s to relieve the unrelenting inertness of paper based materials, the process was still principally one-way from institution to individual. The opportunities of computer-supported learning were initially most apparent in respect of distance education. Initially word processing packages may conceivably have improved a learner's productivity however the developing opportunity of computers in distance education became that of interaction with learning materials delivered for example on floppy disc or CD ROM. By 1992 CD-ROM drives were priced at around \$200 and became affordable to a much larger market than when they were first introduced in 1984 (Campbell-Kelly & Aspray, 2004 p247 -248). This meant it was now feasible to distribute interactional instructional programs such as those teaching touch-typing and bulk digital materials e.g. videos for one way presentation. This enabled the postman to deliver different media but the pedagogical approach was still necessarily didactic and the learner still isolated. The watershed moment for the developed world in general and distance learners in particular was the development of the World Wide Web when technology became able to connect people and distance learning could become a social activity. The opportunity of the World Wide Web is the vision of Berners-Lee:

“The Web is more a social creation than a technical one. I designed it for a social effect – to help people work together – and not as a technical toy.”  
(1999 p133)

An opportunity the Web provided for education is thus interaction with other people i.e. connected learning. From that point on pedagogical design of distance learning was able to evolve from one way didactic models to collaborative models. The separation of content (e.g. academic papers or videos) and interaction with content from social interaction is an important distinction. The development of PC hardware and software applications first enabled learners to interact with content and latterly with each other. Social interaction online, however, needed a supporting infrastructure. In the late 1990s acceptable network speeds for home users in the UK were about 28Kbits per second. In the early 2000s, 56Kbits per

second were normal. Slow speeds coupled with network unreliability caused users ongoing problems for example, connections to the internet were regularly dropped causing interruptions to the flow of use<sup>8</sup>. Connections of 28Kbits cope with text. 56Kbits cope with text and audio. Slow, unreliable and narrow connections therefore constrained early online learning designs to text based exchanges. Today broadband and download speeds of 512Kbits are widespread and improvements in software and PC hardware combine to mean that broadband connections can cope with video, audio and text, widening the options for communications. Computers have sound and graphic cards and processors to run them and the facilities offered by communication software now offers many-to-many synchronous audio, video and text based communications, document, program and desktop sharing e.g. Figure 2.4 (WiredRed, 2007).

Figure 2.4 WiredRed Many to Many multimedia communication software

The screenshot shows a web browser window titled "e/pop Web Conferencing - COMPANY MEETING". The address bar shows "http://192.168.1.46/?join=projectmeeting". The main content area displays a grid of video feeds on the left and a presentation slide on the right. The slide is titled "Superior, State-of-the-Art Technology" and lists several features:

- Real-time routing architecture
- Full Client/Server Model
- Firewall Friendly TCP/IP Throughout
- ALL Traffic goes thru Server
- No Peer to Peer
- No UDP Protocol

The slide also includes a diagram showing "Internal Clients" and "External Clients" connected to an "e/pop Web Conferencing Server". The WiredRed logo is visible at the bottom of the slide.

Peripherals such as tablet pens (for drawing on whiteboards), microphones and video cameras are cheap to buy. Devices such as the MP4 player can offer sound from the pocket or video from the hand and the portability afforded by the laptop

<sup>8</sup> The frequency of dropped connections was such that download managers were developed to handle the problem of the difficulty in downloading complete files because of frequently dropped connections.

and mini devices such as smartphones and pocket PCs coupled with the availability of wireless in public spaces means that communication can be effected on the move. Technically, this has freed distance learners from the isolation of their lonely turrets and the stereotype of the online learner is now one of the busy young executive dashing from airport to airport, smartphone in hand. It has also freed pedagogical design.

### **Focus on Pedagogy**

One of the earliest innovative examples of using computers in education was carried out by Spiro, Feltovich, Jacobson and Coulson (1991) who were exploring the use of hypertext as a pedagogical tool. The system was initially developed for campus based learning, however the method had the potential to be useful to online learning contexts. Most online learning opportunities use the Internet and the World Wide Web. Web pages rely on HTML code to write and present the content of the web page and hypertext to link pages. Berners-Lee, developer of the Web, acknowledges Ted Nelson as naming the concept of 'hypertext' and Doug Engelbart for providing the hardware - the mouse - for making it usable (1999 p4). See Figure 2.5 below (SRI\_International, 2006). The flexibility of point and click - pointing to a hypertext link and clicking the link to gain access to other content - being powerfully demonstrated in a filmed session in 1968.

Figure 2.5 Englebart's mouse



In 1991 Spiro postulated that most knowledge domains are complex and ill-structured. A knowledge domain is said to be ill-structured when there is domain and case complexity (I have to think of many things and there are many things to think about) and across case complexity (the order of what there is to think about – and thus what I think about varies from case to case). According to Spiro *et al's* 'Cognitive Flexibility Theory', learners should therefore aim to achieve “flexible processing skills and contentive knowledge structures” since advanced and expert

knowledge requires “situation-specific assembly of prior knowledge drawn from diverse organisational *loci* in pre-existing mental representations.”. The theory suggests that material should be explored in non-linear ways and Spiro *et al* considered that hypertext “which facilitate(s) flexible restructuring of instructional presentation sequences, multiple data codings and multiple linkages among content elements” would provide the means to achieve this. It was therefore their aim to develop a ‘hypertext instructional system’ attempting to ground ‘hypertext design in a suitable theory of learning and instruction’.(Spiro, Feltovich, Jacobson, & Coulson, 1991)

This is a fine example of a pedagogically led computer-supported learning design. Computer supported learning is independent of the mode of learning i.e. it can for instance be included as a tool for campus-based learning or off-campus learning. Traditionally (i.e. before the Web), campus-based education offered full-time and part-time enrolment whilst correspondence-based distance learning was synonymous with a part-time status. Problems of definition arise as boundaries blur. Allen & Seaman (2005, p. 4) in a study of educational institutions of the USA propose the following content focused definitions in Table 2.2 below

**Table 2.2 Definition of Types of Course**

<b>Proportion of Content Delivered Online</b>	<b>Type of Course</b>	<b>Typical Description</b>
0%	Traditional	Course with no online technology used - content is delivered in writing or orally.
1 to 29%	Web Facilitated	Course which uses web-based technology to facilitate what is essentially a face-to-face course. Uses a course management system (CMS) or web pages to post the syllabus and assignments, for example.
30 to 79%	Blended/Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has some face-to-face meetings
80+%	Online	A course where most or all of the content is delivered online. Typically have no face-to-face meetings.

Pedagogically, development of online courses has been mixed. Some distance learning providers still focus on a closed system of learning using didactic instruction and presentation methods e.g. Pearson Education



(Pearson\_Education, 2007). Learners are connected to the Internet but not to each other in any meaningful way. In the early days of connected learning design it is tempting to say that some designers were little short of irresponsible. Certainly early experiments with online learning caused students considerable distress and were technology-led rather than pedagogically sound. Hara and Kling for example, conducted a case study of a course run online in 1997. The campus-based version of the course had been web facilitated and the same website was used for the online course with instructions regarding changes to activities for online purposes emailed to students weekly. The problems were manifold and the distress suffered real causing Hara and Kling (2000) to write:

“It is time to examine seriously actual experiences for students in distance education courses and to discuss critically the wide array of practices and experiences that undermine the outcome of distance education. It is easy to place the burden of student frustrations wholly upon the instructor’s limitations. One might argue that this course was a unique case of an insufficiently experienced instructor poorly teaching an online course, which tells us nothing about online courses in general. We disagree. In this era when the number of online courses is growing rapidly, many instructors teaching them are likely to be leading their first online course. Yet, we have not found any widely publicized articles that encourage faculty who are starting to teach an online course to prepare in special ways.”

Whilst Hara and Kling may not have found them, pedagogically based resources were available. For example Jonassen had been publishing on computer enabled learning since 1982 (e.g. D.H. Jonassen, 1982) and along with Mayes & McAleese published “A manifesto for a constructivist approach to technology in higher education” in 1993.

Excitement about social learning was building and at about the same time as Berners-Lee was serving up his first web pages, Lave and Wenger published their seminal book “Situated Learning: Legitimate Peripheral Participation (Learning in Doing: Social, Cognitive and Computational Perspectives) (1991) which examined

the way novices were brought from the margins to full membership in a community of practitioners through learning. Its influence was wide, for example, according to the Internet search engine 'Google Scholar' the work has been cited by 5874 sources as at 24 November 2006 (Google, 2006). Such was the interest in social learning, that in 1998 Salomon and Perkins conducted an analysis of the literature and considered whether social learning could be seen as a distinct and identifiable way of learning and separate from 'solo learning'. They concluded that "individual and social learning mark the ends of a continuum of degrees of social mediation" and comprises the:

- 'Active social mediation of individual learning': For example an individual engaging in largely solo learning to develop a software application, might gain helpful feedback and constructive criticism from his/her peers
- 'Social mediation by cultural scaffolding': For example an individual learning how to use a software package using online tutorials and textbooks.
- 'Social mediation as participatory knowledge construction' e.g. a group of learners developing a group solution to a problem
- 'The social entity as a learning system': For example a multi-disciplinary team where the team learns and works as an entity to solve a problem.

The concept of a 'social entity as a learning system' is explored by Wenger in his seminal work "Communities of Practice: Learning, Meaning, and Identity" (Wenger, 1998). Wenger's influence quickly permeated the world of online learning (Johnson, 2001) such that there is now a typology of Virtual Communities of Practice (VCoPs) (Dubé, Bourhis, & Jacob, 2006). Thus at the end of the millennia, these two strands of technological and pedagogical development converge such that social learning becomes the opportunity of online learning and collaborative learning design the panacea.

However, despite an excellent study by Jarvenpaa, Knoll & Leidner (1998) on virtual teaming and books such as Duarte and Snyder's 'Mastering virtual teams: Strategies, tools and techniques that succeed' (1999) there were still studies such as that of Landrum and Paris in 2000. The paper describes that "the assignment given to the teams was to complete a 4-6 page paper on a management topic" whilst regarding design: "The three instructors had never met and correspondence

and planning between the three was done via email and one phone call” (Landrum & Paris, 2000). For one third of the students, the exercise was optional, for two thirds it was compulsory and the following series of quotes eloquently describe the problems

“The teams struggled with trying to determine rules and leadership. Team members quickly became frustrated and enthusiasm diminished.”

“The teams began trying to determine meeting times for the chat rooms. The team members made numerous suggestions on a paper topic but little action was taken during this time. The Instructors finally set a deadline for the topic decision and this forced the teams to advance and become more productive.”

“What is going on with everyone? What happened to our group meeting in the chat room on that Tuesday night? Chad and I were on it waiting for over half an hour before we left because nobody showed up. If we want to get started, we have to do it soon.”

“Once the papers were completed and turned in, the teams were at the Adjourning stage. Frustrations were high and there was little enthusiasm. The night before the paper was due, one student wrote, "OK I don't mean to be rude but the rest of you need to get your asses to work this is due in less than 24 hours and we are not close to a consensus. I am sick of groups so forgive my bitchiness but the rest of you work with what we have and get something on here within the next few hours. In case the others of you had problems (since no one felt to write me and say whether or not they got what I wrote or if they did write back aside from Heather) here it is in here for those who may not have gotten it. Please don't leave all the work to Heather and I" (Trisha O.). The consensus among the students was that they were glad this project was over”.

## **Social Learning for Networked Education**

Highly indignant at what I saw as the cavalier treatment of online distance learners, I was pleased to have the opportunity through my work as a research assistant on the Social Learning for Networked Education (SLONE) project<sup>9</sup> to work towards a model for designing online learning opportunities. Thus it was that I also fell under the spell of Wenger's learning communities of practice and heavily influenced by Jonassen's Manifesto for Constructivist Approach to Technology in Higher Education' (D H Jonassen, Mayes, & McAleese, 1993), developed an "Integrated Pedagogical and Community Model" (IPCM) (King & Scott, 2001) which combined the ideas of Wenger as mentioned, Carl Bereiter & Marlene Scardamalia's 'Knowledge Building' (e.g. Scardamalia & Bereiter, 1994) and Katzenbach & Smith's work with 'High Performance Teams' (1993). The model was used to design a pilot unit which was run in 2002. The pilot unit required learners to engage in solo learning - learning how to use a software authoring tool; the social mediation by cultural scaffolding' – by using tutorials to develop expertise with the authoring tool; the 'active social mediation of individual learning' – by demonstrating to other learners, a software application developed using the authoring tool and receiving their feedback; and the 'social mediation as participatory knowledge construction' – by jointly producing a check list for evaluating interactional learning applications. It was the aim of the Integrated Pedagogical and Community Model that learners also became a 'social entity as a learning system' developing interdependence as a team whilst pursuing a knowledge problem. Thus the learners were engaged in the full spectrum of pedagogical designs of social learning as defined by Solomon and Felder (2002)

Private space in which to develop ideas matters to online learners. It also matters to the designers of connected learning opportunities who invest finite resources into their development. We therefore chose to run the unit within a virtual learning environment (VLE) which affords privacy. None of the VLEs we reviewed offered us the collaboration facilities we needed so we selected WebCT as being 'good enough' and organised the work of the course on a week-by-week basis.

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<sup>9</sup> Social Learning for Networked Education (SLONE) Project of the Department of Information Systems of the Faculty of Technology of the University of Portsmouth. Project Director Terry King.

Figure 2.6 is screenshot of the presentation of work. Clicking on, for example hypertext link ‘1.1 Summary Week1 for (colour) printing’ opened the page detailing the work for that week as per the screenshot Figure 2.7 below:

Figure 2.6 Presentation of Work

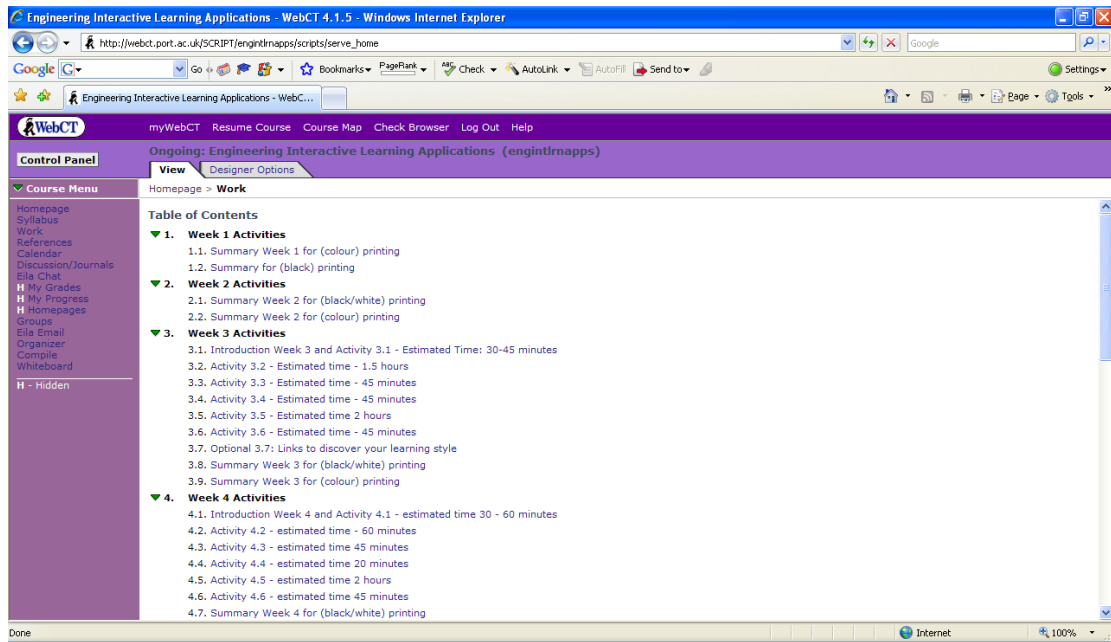
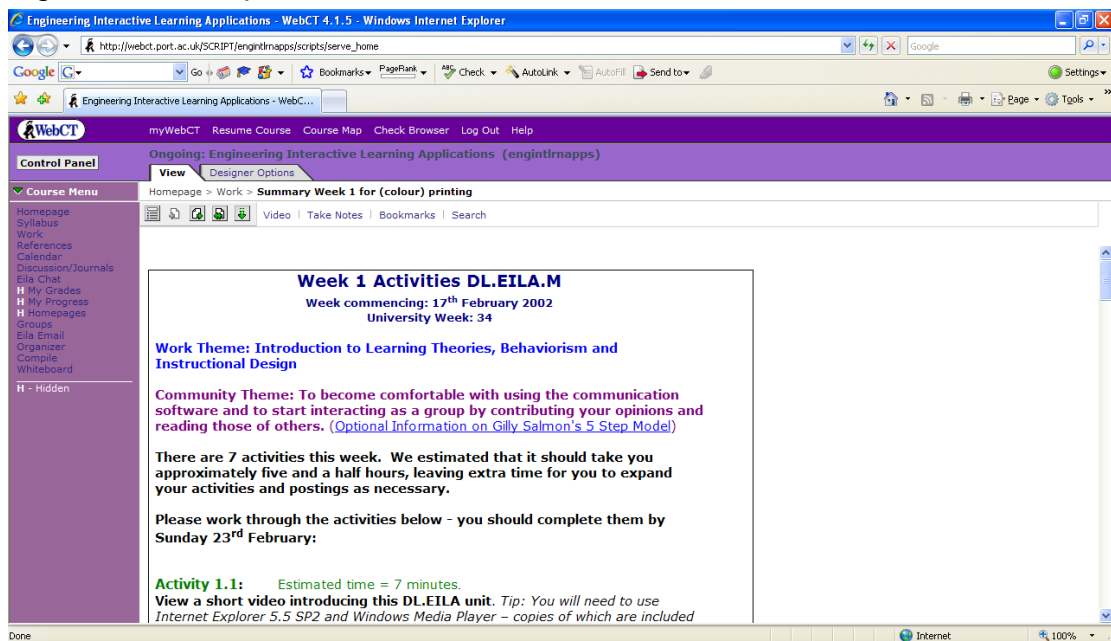


Figure 2.7 Example of a Week's Work



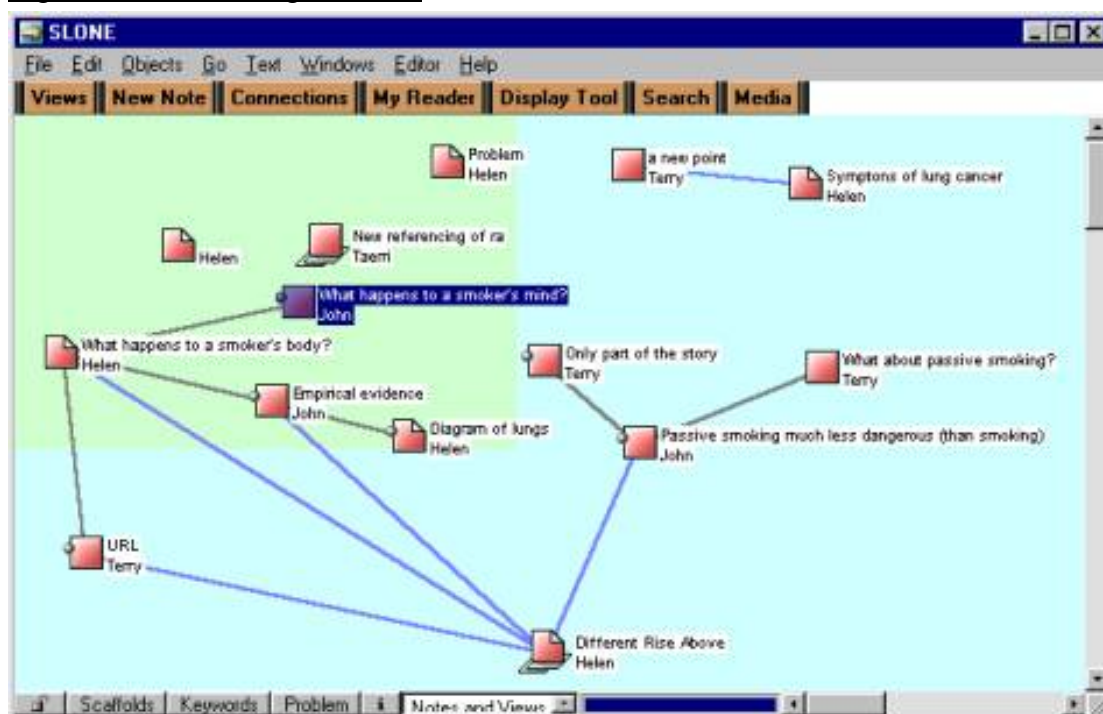
For the collaborative work of the unit we used specialist software Knowledge Forum (Knowledge\_Forum, n.d.). Knowledge Forum started life as Computer-

Supported Intentional Learning Environment (CSILE) which was developed initially in the early 1980s. Intended as a tool to support the face-to-face learning of groups, it was not seen by one of its developers, Carl Bereiter, as a tool for distributed and connected learners (C. Bereiter, personal communication, April, 2003). Its sound pedagogical base and innovative methods for supporting the construction of knowledge however, made it the software of choice. Our use of the Knowledge Forum software was hugely successful in most respects. The discussions were challenging and students engaged and tussled with the issues. The ability to link, reference and annotate notes facilitated this process. However the design of our course was problematic. Charles found that:

“Time estimates for each activity were a gross underestimate. It took four times longer to complete an activity, than the time estimated. It was not just a matter of the overall content; the process and the method also had to be learned. I had to use new learning skills. I was researching on my own – there was no dialogue – there was no f2f. Life was not in balance at that point.”

Another student found it impossible to come to terms with visual representation of discussion afforded by the software ‘Knowledge Forum’. (e.g. Figure 2.8 below)

Figure 2.8 Knowledge Forum



Whilst another student, when asked: ‘What did it feel like – learning online?’ said:

“I felt free to say anything. I was excited by the newness. It was interesting, totally different. All the software we were using made it more interesting to write and study.”

In another discussion, Barry said:

“The week by week workload didn’t break down conveniently, Some weeks one was way behind and other weeks way ahead. The time allowance for each activity was initially demoralizing. If one took less than the allotted time, then one must have missed something. If one too longer than the allotted time, why was one so slow?”

Barry also commented that the Easter break disrupted the momentum that was building up and thought the course too short. He went on “All sounds a bit negative but you know I loved it; but hell, you asked”.

As well as positively challenging learners, I was being told that I too had caused distress to online learners by virtue of design. I was challenged. It was the view of the SLONE team that as well as designing for collaborative learning, design should also take account of two further points. First that teams need time and coaching in order to develop and second that novice online learners need to learn how to learn online. Specifically learners would need sufficient time and support such that they would be able to learn how to:

- install the communication software;
- use the software;
- communicate and develop relationships online;
- take control of learning – in terms of the material used and time management; and how to
- be assessed. Learners would also need to learn;
- concepts of the knowledge domain;
- a specific method of learning – Knowledge Building; and learn

- team management processes for the organisation of work.

As tutors and designers we had therefore aimed to provide clear, concise and accurate instructions on how to install and use learning software, provide an overview of, and a knowledge problem pertaining to, the knowledge domain and identified or developed references of potentially useful concepts. It had also been our aim to guide and support learners as they struggled with the confusion of new software, the uncertainty of online computer mediated communication (CMC) and the vagaries of firewalls, software incompatibilities and network connections. We also aimed to support participants as they learned how to learn collaboratively online using protocols to provide clarity and direction to their efforts and to minimise the time lapses inherent in asynchronous working (Scott, 2004, p. 79). Given that every effort was made to ensure that the unit was pedagogically sound; that every care had been taken to nurture students through the early stages of becoming an online learner including a Startup Day of frantic fun; and that hours had been spent online by the two tutors offering support and feedback, I was perplexed. What more could we possibly have done? At this point I wondered if the panacea for online learning was not connected learning as designed and implemented by the SLONE team, then

- What are the e-learning experiences, perceptions and needs of adult online learners?
- How can these understandings inform design of online learning opportunities?

As it happens – our time design had been wrong but whilst the students were telling us vocally and other unit lecturers were complaining that too much time was being spent on our unit, we did not fully appreciate the significance of what we were being told..... until now!

## **Summary**

In the early days the immaturity of the networks and personal computing hardware and software constrained the opportunities for online learning design both in terms of who could access the learning opportunity and the degree of collaboration achievable using one dimensional text based communications. A symbiotic



relationship between the World Wide Web and the Internet network upon which it relied encouraged the ongoing development of interoperability of networks, hardware and software. Faster connection speeds, faster computers and better software allowed computer to be used more transparently, allowed people to work through computers and to supplement text based communications with audio and video and thus enabled the development of pedagogical designs of online learning opportunities from didactic, solo learning designs to the full spectrum of social learning. However, in reviewing the literature for the SLONE project, it became my view that online learning opportunities were not well designed, that students were not being well served. Our best efforts to remedy this did not meet with undiluted approval. There appeared however, to be no underlying or organising principle by which to understand where to focus effort.

This chapter has thus overviewed the development of the enabling technologies of the Internet and the personal computer in parallel with the application of pedagogy in the development of connected learning opportunities. It has demonstrated that connected learning necessitates responsible design and that designers need to understand the consequences of design on learners. The chapter ends with the rationale for the research and a statement of the research questions. The following chapter will discuss the pragmatic reasons for choosing Classic Grounded Theory as the research method for this study. It will also explain how I came to hold entirely preconceived ideas regarding professional concerns at the beginning of the study and detail how the method triumphed in implementation, guiding me to a successful conclusion, despite my unconscious efforts to subvert it.

## Chapter Three: Doing the Study

This chapter will consider the implementation of the research method Grounded Theory in detail. It will begin with the rationale for the choice of the method in terms of it being an appropriate tool with which to conduct the research and in being compatible with the researcher. From beginning to end the chapter will show my rigorous adherence to the method. It will evidence that the data obtained were substantial and appropriate. It will explain, how using my expert knowledge as an online course designer and tutor, methods of online data collection were developed and then tested during a two-month pilot study. It will address how the online method shaped the data collected and will chronicle my tussles with the Grounded Theory method of analysis in the development of a carefully Grounded Theory. It was not an easy process. It was in turns frustrating, infuriating, exciting and exhilarating. It was always rigorous. It should be emphasised that, consistent with the work of Higgins (2006) and Gynnild (2006) the chapter will not provide an audit trail of the development of concepts; its intention is to evidence honest endeavour, rigorous adherence to method, and to illustrate the development of my understanding of the Grounded Theory research method achieved during the research process.

### Choice of Research Method

The choice of research method was entirely pragmatic. Chapter Two explains in some detail that this research study was prompted by professional concerns emanating from my work as a research assistant in developing the Integrated Pedagogical and Community Model (King & Scott, 2001) which is a model for developing online learning opportunities for adults. A unit piloting the model had been designed and implemented. I had initially envisaged a research design using an Action Research approach since this would have allowed me to develop the model since the four principle and iterative stages of “identifying a problem, planning an intervention, implementing the intervention, evaluating the outcome” (Cohen, Manion, & Morrison, 2000, p. 241), fit well with a research design of planning a pilot unit, running it, gathering data, analysing the data and applying what was learnt in the next cycle. At the beginning my interest had been in online

distance learners exclusively, however the pilot unit had been run for on-campus learners as part of an on-campus course. This meant that in order to pilot the unit for distance learners we would have to design and validate a new postgraduate course. Three separate bids for European Union funding for collaborative projects failed and whilst a new online postgraduate course within the department had been validated, the unit which could potentially be designed according to the Integrated Pedagogical and Community Model, was planned to run during the latter stages of the course. Use of this approach would introduce a dependence on others in a working environment which was not large enough nor designed to facilitate collaborative research. This together with my judgment that there were insufficient cycles available before the planned end of this study meant that an Action Research approach was rejected for reasons of practicality, I was not confident that such a research design was feasible. I needed a research design where the success of the project was independent of my working environment.

An alternative research design might have been one based on a more traditional research design of defining a hypothesis and proving or disproving the hypothesis statistically. Two potential hypotheses could have been:

The Integrated Pedagogical and Community Model is an effective method by which to design online learning opportunities for adult learners. Or

Learning opportunities designed according to the Integrated Pedagogical and Community Model will provide satisfactory learning opportunities for adults.<sup>10</sup>

A survey using data collection instruments of structured interview and/or questionnaire would provide data capable of being analysed statistically to prove or disprove either hypothesis. However, surveys using questionnaires or structured interviews focus the interview and are limited to the understanding of the survey instrument designer. The discussion on page 122 addresses the

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<sup>10</sup> Both of the above are too broad for this type of research design and are used for illustration only. The issues would have to be smaller and more tightly defined - a point which is taken up on the following page.

inadequacy of research in the substantive area of online distance learning for adults based on this type of research design, noting in particular how it fails to capture the complexity of the substantive area. The paucity of quantitative studies encouraged my belief that these research methods were not sufficient to capture the human experience. As explained on page 39, questions for survey instruments designed by me – and based on my literature review for the SLONE project – would have focused on issues relating to pedagogical content and temperament as it affects learning styles and online communication.<sup>11</sup> However, I wanted to know what the learners perceived to be the issues for them, not on what I perceived that they might be. I needed a research method that would explore the issues and understand from the learner's perspective.

A case study would have facilitated an exploratory approach and may have enabled learners' issues to arise, however, I did not have direct and reliable involvement with any online learning opportunities on which to base a case study. This approach was therefore rejected and I identified that a research method that was independent of any one learning opportunity was required.

Miles and Huberman (1994, p. 12) think of qualitative data analysis as being composed of three stages; data reduction, data display and conclusion drawing/verifying. They offer, to the novice researcher, an alarming mix of techniques for each of those stages from which to pick and mix a recipe. I determined that I needed a coherent method.

But most importantly, I needed a systematic method that would give me a way in which to take the lessons of the learners' experiences and use them to inform design of online learning opportunities.

Grounded Theory fitted my requirements on all counts since:

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<sup>11</sup> Whilst we did not design for different learning styles, we encouraged learners to explore the issues for themselves directing them to Honey and Mumford Learning Styles Questionnaire (psi-press, 2002); Learning Styles Online Inventory (Anonymous, 2002); Index of Learning Styles Questionnaire (Soloman & Felder, 2002); and the VARK questionnaire (Fleming, 2001)

“The grounded theory approach is a general methodology of analysis linked with data collection that uses a systematically applied set of methods to generate an inductive theory about a substantive area”. (Glaser, 1992, p. 16) where:

“Grounded theory has the purpose of generating concepts and their relationships that explain, account for and interpret the variation in behaviour in [the] substantive area under study, which behaviour is most often hinged around processing a problem for the subjects.” (Glaser, 1992, p. 19) which means that:

“The theory provides a conceptual approach to action and changes and accesses into the substantive area” (Glaser, 1992, p. 15)

In terms of my requirements; the (initially) inductive nature of the method with its emphasis on being informed by data, facilitates an exploratory approach; that the substantive population (Glaser, 1992) can be defined as ‘adult online distance learners’ means that the study is independent of any one learning opportunity; that “GT is a perspective based methodology” (Glaser, 2003a, p. 168) means that the focus will be on the substantive population, the learner; additionally, the systematic method offers a framework by which to collect and analyse data and lastly the output of the method is designed to be a theory grounded in data with which to inform practice. Thus it is the perfect tool for this research study which intends to understand the needs of online distance learners in order to inform design of online learning opportunities, with the significant attraction for this novice researcher of providing a systematic method with which to organise data collection and to guide data analysis.

### **Which Grounded Theory?**

The Grounded Theory method was first written about in 1967 by its originators Barney Glaser and Anselm Strauss. Strauss went on to develop, what is now considered to be, a separate method (Hernandez, 2006) with Julie Corbin, publishing in 1988. Strauss and Corbin however, continued to refer to their method as ‘Grounded Theory’ despite written requests from Glaser (1992 p1-2) to

either re-write their book or re-name the new method. To distinguish the two, Glaserian Grounded Theorists tend to refer to the method originally described by Glaser and Strauss and developed over 40 years by Glaser as 'Classic Grounded Theory' (Hernandez, 2006). The reasons for not using Strauss and Corbin's version of Grounded Theory for this study, were also pragmatic. The two methods are very different in their execution. Since Grounded Theory is an experiential method where understanding of the explicated method is best acquired through implementation (Glaser, 1998, pp. 1-3), I decided that to study two related but different methods would undermine my efforts to properly understand and use one. I chose Classic Grounded Theory principally because it purported to deliver the product I needed and because it was accessible via a number of method books, face-to-face seminars and a vibrant research community in a way which Strauss and Corbin's method was not. In retrospect, since the output, the developed theory satisfies the criteria by which to judge a Grounded Theory (see Chapter Seven), I consider the choice of method an appropriate one. Further, I do not consider that Strauss and Corbin's method with its dependence on a single theoretical coding structure, would have been able to handle the complexity of so many structural conditions having such diverse dimensions, that Classic Grounded Theory handled so elegantly (see page 69).

### **Classic Grounded Theory**

Having distinguished between Classic Grounded Theory and Strauss and Corbin's method (1992), Glaser has continued to defend the Classic Grounded Theory method from remodelling or reworking (Glaser, 2003b). The problem being that whilst many claim to write Grounded Theories not all succeed (e.g. Kember, 1999), their theories appearing superficial thus bringing the method into disrepute (Bryant, 2002). As a trainee researcher, I therefore decided, that having chosen my method carefully, I would follow the method as closely as I was capable of doing. Whilst others have adapted and redesigned Grounded Theory according to the tenets of their disciplines (e.g. Charmaz, 2006), I determined to adopt a classic approach such that any comparisons I made in the future were informed by experience.

Much of the discussion regarding the remodelling of Grounded Theory relates to what Phillips and Pugh refer to as data theory, which they describe as the “justification for the relevance and validity of the material that [the researcher is] going to use”.

Phillips and Pugh are also pragmatic in their advice

“Just what the content of your data theory is will vary enormously from discipline to discipline, but the form will always be concerned with the appropriateness and reliability of your data sources. In the sciences it will entail the demonstration that your apparatus is sensitive enough to detect the effect and is reliably calculated. In historical studies you will need to show that your documents are adequate and properly interpreted. In the social sciences you might need to engage in an epistemological discussion about which interpretative framework (e.g. positivist, postmodernist) it is appropriate for you to use to maintain your position. (2000, p. 61)

The data theory relevant to a Grounded Theory study is discussed in Chapter Three in relation to my efforts to collect ‘good’ Grounded Theory data. One vital tenet, however, is that ‘all is data’. Glaser writes:

“The briefest of comments to the lengthiest interview, written words in magazines, books and newspapers, documents, observations, biases of self and others, spurious variables, or whatever else may come the researcher’s way in his substantive area of research is data for Grounded Theory.”(1998, p. 8)

In acknowledging that different disciplines have different criteria for determining the appropriateness and reliability of data we can begin to see the potential for some disciplines to have a problem with Grounded Theory’s definition of data. The position of Classic Grounded Theory, however, is that it is a general research method – a tool – “that can be used with any type of quantitative data or qualitative data or combination thereof” (Glaser, 2003a, p. 83). Disciplines will be more or less able to accept this position. This thesis however, in satisfying the criteria for a

Grounded Theory, provides an endorsement for the view that Grounded Theory works effectively when the method is allowed to develop according to its tenets. This being the case, Karen Locke would prefer Grounded Theorists to change the relative emphasis of their writings on method from vindication of the choice and use of Grounded Theory to an approach that enables readers to have “a better understanding of how a particular study progressed” where: “Such writing would be helpful for others wishing to understand how analysis unfolded through the researchers’ major analytic decisions and moves” (Locke, 2001 p129). To this end, the remainder of this chapter will continue with Locke’s suggestions for presenting the analysis by ‘identifying the researchers’ informing school of thought’. This is relevant in so far as it identifies those professional concerns – those preconceptions, of which I was unaware and which would inhibit progress. The remainder of the chapter will discuss the implementation of the method in some detail including ‘delineating how the research questions shaped analysis’ (2001, p. 129); the design of online data collection procedures and data collection and analysis.

## **The Researcher**

### **Identifying the Researcher’s Informing School of Thought**

This section will explain my perspective regarding my compatibility with the method, which some views lead to my preconceptions and which slow down – subvert the research process.

#### **Psychological type**

In terms of the Myers Briggs temperament indicator, I am type ‘INFP’. Latterly Isobel Briggs-Myers and initially Katherine Briggs developed the work of Carl Jung who was interested in the way in which we take in sensory data and how we reason. Jung defined three parameters of personality. The first extravert (E) – introvert (I) is termed an ‘attitude’. An extravert is oriented towards the outer world and adapts to the outer world. The introvert is oriented toward their inner world and adapts the world to them. The second parameter, sensing (S) – intuition (N) is to do with how one takes in sensory data. Sensing types like facts and determine the whole by working up from detail whilst intuitives prefer to scope the whole



picture first and then drill down to the detail. The third parameter, thinking (T) – feeling (F) is to do with how one reasons. Thinking types reason predominantly by reference to external frameworks (e.g. the law), whilst feeling types reason by value (e.g. whether something is inherently good or bad, right or wrong). Each of these parameters is mutually exclusive, for example one is either predominately extravert or introvert; or reasons predominantly using either a thinking or a feeling approach (Jung, 1971). Briggs and Briggs-Myers found a fourth parameter implied in Jung's work which they called Judging – Perception. The significance of Briggs' and Briggs-Myers' work is that it led to a way of identifying an individual's dominant and secondary function, that is, one's preferred way of relating to the world, of making sense of the world and one's preferred way of knowing (Fordham, 1970; Thomson, 1998). According to Mitroff and Kilman (1978), our psychological type will also predispose us to a particular view of science. Concerned by a perceived antagonism between natural and social scientists, Mitroff and Kilman conducted a review of scientific literature classifying papers according to Jungian type. Table 3.1 summarises Mitroff and Kilman's findings and they write:

“What attributes of mind have let science become what it is? If there are defects in our ways of knowing and doing, are they traceable back to the qualities of mind underlying it? Is science largely the creation and dominance of a particular psychological type of style, the projection of a particular type of psyche, onto the world? And if so, are alternative forms of science based on alternate psychological styles possible? We believe the answer to the preceding question is “yes”.” (Mitroff & Kilman, 1978)

If psychological type determines how we view reality (our ontological assumptions) and what we think is the purpose of knowledge (our epistemological assumptions) (Thomson, 1998) then it follows that:

“Ontological assumptions give rise to epistemological assumptions; these in turn, give rise to issues of instrumentation and data collection. *This view moves us beyond regarding research methods as simply a technical exercise*; it recognises that research is concerned with understanding the

world and that this is informed by how we view our world(s), what we see as the purpose of understanding” (Cohen, Manion, & Morrison, 2000, p. 3 emphasis added)

Psychological type theory gives us a way of de-personalising our different conceptions of the world, allows us to conceive of the idea that there are many ways of knowing the world and allows us some insight into the differences between us. It invites tolerance of different world views. According to Mitroff and Kilman my type (NF) does not see science as privileged and my ‘preferred mode of inquiry’ will be ‘conceptual inquiry’ where researcher and subject ‘cooperate to know themselves better’. My ultimate selection of a general research method owned by no one paradigm and useful to many, which values creativity and working conceptually and prefers the notion of dialogues between equals rather than a hierarchical relationship between interviewer and interviewee (Glaser, 2005b) is consistent with my type and with Mitroff and Kilman’s findings (see Table 3.1).

### **Professional Concern**

My interest in psychological type also caused me to wonder if observed behaviours of online learners were attributable to type. I also realised that the pilot unit designed according to the Integrated Pedagogical and Community Model was designed by psychological types which represented less than 10% of the population (Keirse, 1998) and that we had designed a pilot unit which we would enjoy and be challenged by. I was keen to discover whether people’s experiences of the pilot unit were a function of their personality type. Was it the Extraverts that needed synchronous communication? How do you design a course for all types? Is that necessary; do courses attract types as professions attract types? Some people do not wish to learn in a group at all – they prefer to work as solo workers, which types are they? These questions raised fundamental issues; they caused me to want to discover:

- What are the e-learning experiences, perceptions and needs of adult online learners?

- How can these understandings inform design of online learning opportunities?

Thus we can see that I arrived at the start of my study wholly focussed on my professional concerns and in Grounded Theory terms utterly preconceived. This is not a desirable state for a Grounded Theorist since the researcher should not impose her own preconceptions of patterns onto the data but should be open to the data and the latent patterns contained therein.

Table 3.1 Methodological Approaches to Social Science (Mitroff &amp; Kilman, 1978)

Category	Analytic Scientist: ST	Conceptual Theorist: NT	Conceptual Humanist: NF	Particular Humanist: SF
Status of science as a special field of knowledge in relation to other fields	Occupies a privileged and preferred position: Value free, apolitical, cumulative, progressive, disinterested, clearly separable from other fields, clear lines of demarcation, autonomous, independent, strict hierarchical ordering of scientific fields from precise to less precise fields.	Occupies a privileged and preferred position but is not clearly separable from other fields; no clear lines of demarcation; not autonomous or independent, no strict hierarchical ordering of fields all depend on one another; science is value-free, apolitical.	Does not occupy a privileged and preferred position, is not clearly separable from other fields; no clear lines of demarcation; not autonomous and independent; all fields of knowledge depend upon one another. Science is not value-free; it is political.	Does not occupy a privileged and special position; may be subordinate to poetry, literature, art, music, and mysticism as older, superior ways of knowing.
Nature of Scientific knowledge	Impersonal, value-free, disinterested, precise, reliable, accurate, valid, reductionistic, causal, apolitical, cumulative, progressive, clear standards for judgement, realistic, antimystical, unambiguous, exact.	Impersonal, value-free, disinterested, holistic, valid, apolitical, imaginative, multiple-causation, purposeful ambiguity, uncertainty, problematic.	Personal; value-constituted, interested activity; holistic, political, imaginative; multiple-causation; uncertain; problematic; concerned with humanity.	Personal, value-constituted, interested; partisan activity; poetic, political, action-oriented; a-causal, non-rational.
Guarantors of scientific knowledge	Consensus, agreement, reliability, external validity, rigor, controlled nature of inquiry, maintenance of distance between scientist and objects studied.	Conflict between anti-thetical imaginative theories, comprehensive holistic theories, ever expanding research programs.	Human conflict between knowing agent (E) and subject known (S); inquiry fosters human growth and development.	Intense personal knowledge and experience.
Ultimate aims of science	Precise, unambiguous, theoretical and empirical knowledge for their own disinterested sake.	To construct the broadest possible conceptual schemes; multiple production of conflicting schemas.	To promote human development on the widest possible scale.	To help this person know himself or herself uniquely and to achieve his own self-determinations.
Preferred logic	Aristotelian, strict classical logic, nondialectical and indeterminate.	Dialectical logics, indeterminate logics.	Dialectical behavioural logics.	The logic of the unique and singular.
Preferred Mode of inquiry	Controlled inquiry as embodied in the classic concept of the experiment.	Conceptual enquiry; treatment of innovative concepts from multiple perspectives; intention of new schemas.	Conceptual Inquiry; treatment of innovative concepts; maximal co-operation between E & S so that both may better know themselves and one another	The case study; the in-depth, detailed study of a particular individual.

## **Beginning the Grounded Theory research process:**

### **Restating the Research Questions**

One of the attractions for me about Grounded Theory is that it provides the researcher with a rigorous and robust method within which one is empowered and coaxed to autonomy. The stringent and emphatic rules that govern the development of a Grounded Theory are designed to protect the data from being forced into a particular form and to enable the student researcher to tease out the shape of a theory from flat data. In this way, as one lifts out the theory from the morass, codes and relationships that are not central to the theory are allowed to drop away and one is left with a theory of parsimony. The next sections explain how this happened for me during this study, including the confusions and false starts, the generation of a plethora of codes and their subsequent reduction, through the state of conceptual description (where one is loathe to give up any hard won code or connection), to the shapes that do not quite work, to the glorious moments when a combination of theoretical codes brought order and elegance to daunting complexity.

At this point I am aware that I have some knowledge and opinions about the substantive area and I am keen to conduct the study according to Classic Grounded Theory tenets. Whilst I find it easy to embrace the viewpoint of the adult online distance learner, I have not yet realised how I also take these views and consider them from the problem-solving perspective of the course designer. I am therefore conscious that I have to pay special attention to my preconceptions but have not yet identified those that are yet to derail me. For now, the first step is to restate my research question in Grounded Theory terms and so it becomes:

**What are the issues that online learners face?**

**How are these issues resolved?**

### **Delineating how the research questions shaped analysis**

The research questions above were directly shaped by my professional concerns and directly shaped the questions asked of learners. The learners however,

responded not about engaging with the pedagogical design and content of learning opportunities as I had expected but about how they found time to engage in study – or not. And why. My preconceptions may have made me slower to recognise the core category than if I had held no expectations. Encouragingly however, the questions asked did allow the learners' issues to surface – rather than mine. This issue is explored in the discussions below.

## **Data Collection**

### **Collecting Good Grounded Theory Data**

My main concern when engaging in data collection was to collect 'good Grounded Theory data'. But what is good Grounded Theory data and how do you get it? Online? Ethically? As discussed in the previous chapter, Phillips and Pugh address this concern when they write of 'data theory' which they describe as being "concerned with the appropriateness and reliability of your data sources". Glaser asserts that 'all is data' and therefore that "whatever [type of data] may come the researcher's way in his substantive area of research is data for Grounded Theory." (1998, p. 8). Since the data I have collected were collected directly from the substantive population or substantive area or related to the substantive population or substantive area, it is considered to be appropriate data.

Is it reliable data? If by this Phillips and Pugh wish to ascertain that participants are telling the truth, then a Grounded Theorist would argue that this interpretation of reliable is inappropriate to a Grounded Theory. For Grounded Theorists data types include

- baseline data; "the best description a participant can offer";
- properline data; "which is what the participant thinks it is proper to tell the researcher";
- interpreted data; which is what is told by a trained professional whose job it is to make sure that others see the data his professional way" and;
- vaguing out; where "there is no stake in the participant in telling the researcher anything, so he just vagues out". (Glaser, 1998, p. 9)

Grounded Theorists do however, rely on data to pattern out, for categories to be saturated. Therefore data needs to be sufficient. Glaser continues:

“In sum, no matter what type of data is obtained, the data is the data even if the researcher does not particularly care for it. It is his or her job to let the data emerge in its own right and induce its meaning” (1998, p. 9)

Did I induce its meaning? The answer to this will be found in the evaluation of whether the analysis of the data has produced a theory which by its own criteria, is relevant, fits, works and is modifiable. Since I argue that these criteria are satisfied in Chapter Seven, then I claim to have induced the data’s meaning.

Arguably then, good Grounded Theory data will allow you to develop a theory which fits, works, is relevant, is modifiable and explains how protagonists resolve or process their main concern. It therefore follows that good Grounded Theory data addresses the protagonist’s main concern. Since the main concern is only identified some way into the study, when one has identified the core category which itself is most often an aspect of the problem, the practical problem remains: how does one begin?

I decided that the most logical place to start would be to interview adult online learners. I planned that most of my data collection activities would be conducted online since I considered it likely that those online learners who were likely to agree to communicate with me would be geographically remote. The literature on online interviewing from a Grounded Theory perspective is non-existent and thus my approach was developed from first principles. In conducting interviews consistent with the Grounded Theory method, one is required to start with a very open question, and thereafter to follow where your interlocutor<sup>12</sup> leads (Glaser, 2003b). In a face-to-face interview, where your interlocutor pauses it is suggested that the researcher merely repeat the last word he or she spoke or give unspoken encouragement. The researcher is advised to speak as little as possible and when necessary, further questions are asked and are limited to what has already been said e.g. “Tell me more about ..... The aim is to ‘instil the spill’ to give the

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<sup>12</sup> Interlocutor is used to imply a neutral relationship between researcher and research subject, where subject and interviewee imply power inequalities. Grounded Theorists are encouraged to have an attitude of mind that respects one’s participants as equal participants in a conversation. (Glaser, 2005b)

participant the opportunity to tell you of his/her issues. Humility and openness are said to be useful researcher characteristics where the researcher and researched are equal participants in a discussion (Glaser, 2003b).

My first objective was to create the conditions under which participants would be comfortable in sharing their experiences online. My preconceptions led me to suspect that the main issues of adult online learners would revolve around personality type and the difficulties of virtual group working. My concerns as to whether different types of people preferred different ways of communicating online prompted me to offer different ways and means of conducting the interviews viz:

- Individual interview using email
- Individual interview using chat software
- Group discussion using email
- Group discussion using chat software

I decided not to offer audio interviews because of difficulties experienced with communication software crashing users' computers. I did not offer synchronous net meetings because of difficulties experienced with firewalls prohibiting connection. The participants in this research instance would be offering their time freely and may not have been technically literate. It therefore seemed wrong to offer these participants methods of communicating with which I was not confident.

Given the one-dimensional nature of text based communications, I decided that a direct approach was most likely to elicit good Grounded Theory data and my questions were framed as follows:

- What do you feel about your experiences of online learning?
- What are the issues for you when working/learning online?
- How did you/do you resolve those issues?
- What else should I know, that I haven't asked?



## **Issues of Online Data Collection**

### **Individual Interviews**

As a competent user of chat software and email I was confident in my ability to conduct discussions and to facilitate the process. I offered to use any freely available chat software that my interlocutors wished to use. Similarly as a competent user of email, I foresaw no problems in discussing via email.

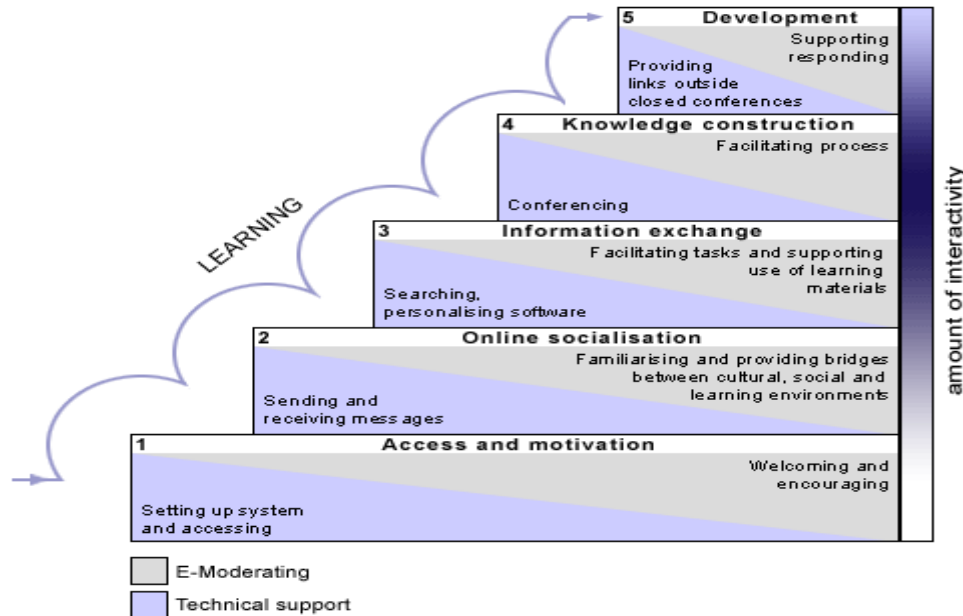
### **Group Discussion by Email**

Instilling the spill in a group discussion is a function of the interview design and the medium (software). Interview design will include issues such as the role of facilitator and the amount and type of facilitator intervention. Mary Gray (2003) of the Association of Internet Researchers asks “.. how do we train ourselves to use this [online] medium as effectively as we can train ourselves to interview using offline spaces?” In this case it seemed appropriate to use the knowledge and skills gained whilst developing and facilitating an online collaborative course and apply them in designing an online group discussion process, where the aim is to create a conducive atmosphere in which interviewees can share thoughts and feelings. This means, that as well as coaxing/challenging participant to share relevant information relating to their main concerns and how they resolve their main concerns, I may also need to coach them in the process of online communicating. An explicit recognition of the expansion of the role of interviewer to that of a dual role of online facilitator and interviewer.

Initially at least, the issues for collaborative learners online and online group interviewees are likely to be similar and the aim for all is to develop online conferencing skills. Communicating and learning online can be a distressing experience when implemented badly (Hara & Kling, 2000). It is therefore essential to design for success. Salmon (2000) describes the stages learners go through in becoming independent online learners and offers strategies for design and moderator behaviour which are aimed at encouraging learners to participate and to develop their competence and comfort with the process. See Figure 3.1 (Salmon, 2000, p. 26) By definition, the interviewees in this study will have experienced communicating online. I decided, however, that it was not sufficient

to assume that my interviewees would all be competent online communicators, comfortable with the environment since some may have had bad experiences. For this reason I decided to make use of the first three stages of Salmon's model in designing the group interview process and in informing facilitator behaviour.

Figure 3.1 Salmon's Model of Teaching and Learning Online through CMC



I chose to use the facility 'Yahoo!® Groups' which offers both a web based bulletin board – enabling access to the discussion from any computer connected to the internet - and enables group discussions conducted by email through a group address. The main advantage of 'Yahoo!® Groups' over other online group facilities, however, is that individuals can be 'added' to the group with minimal inconvenience to that individual. The process thus involved

- Sending an invitation to an individual to participate including a statement of ethical matters<sup>13</sup>
- Receiving acceptance from the individual together with an informed consent statement
- 'Adding' the individual to the 'Yahoo!® Group'
- Sending a welcome message to the individual

<sup>13</sup> Ethical review was not available within my Faculty at that time and Appendix B details the development of my ethical approach from first principles.

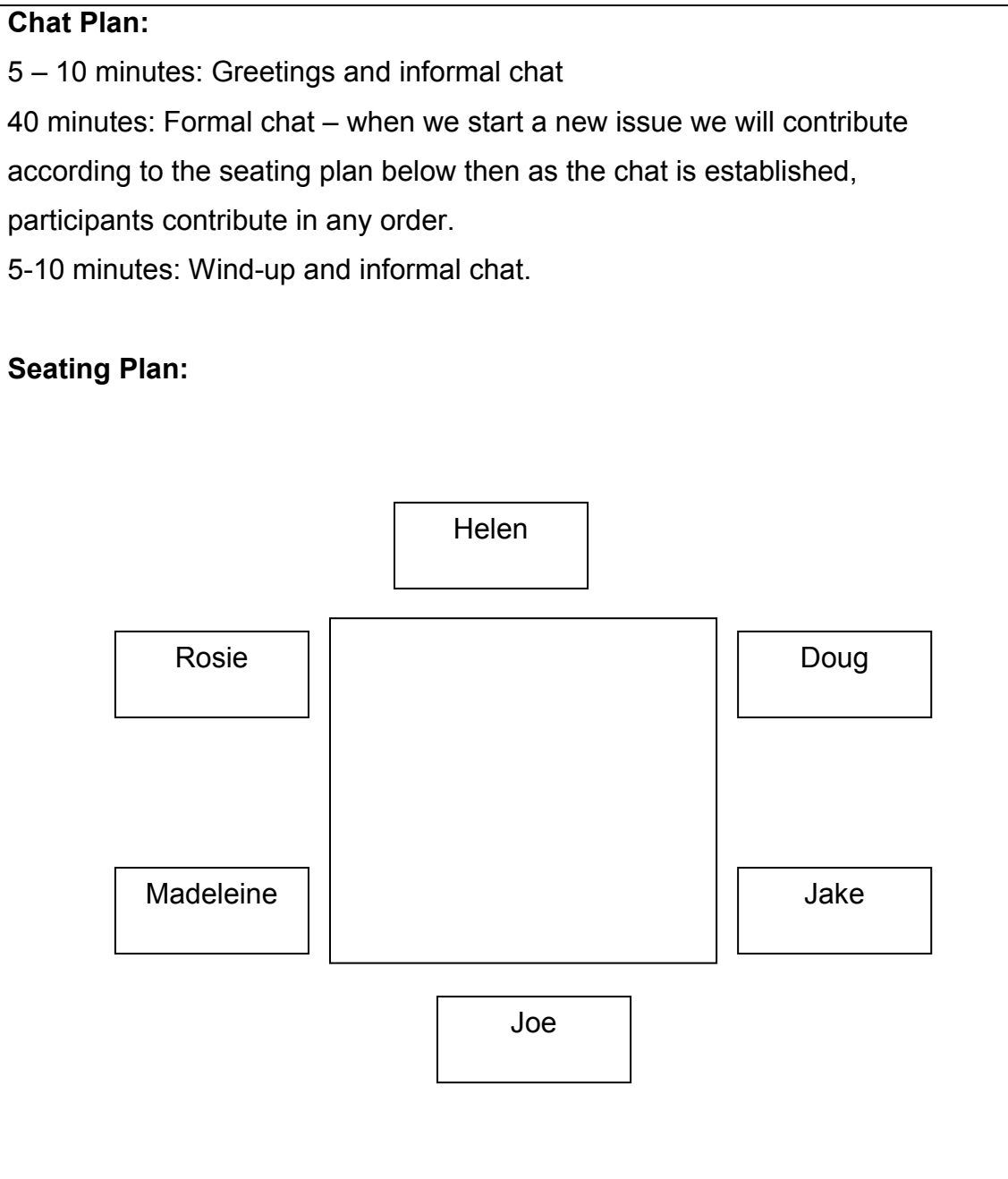
- Sending invitations to all group members to invite them to introduce themselves
- Sending first questions to all group members

where my role is to model behaviour to begin with, to ease off as discussions develop and to prompt should discussion lag.

### **Group Interviews using chat**

Group sessions using chat software can be anarchic with comments from one participant running over two or more lines being interspersed by the comments of others. To the unpractised or the slow typist, this can prove overwhelming and exclusive. I therefore proposed to use the chat guidelines of Melanie Heard-White (Heard-White, Saunders, & Pincas, 2004) and use a chat plan and seating plan as shown in Figure 3.2

Figure 3.2 Sample Chat Plan and Seating Plan for Group Chat Sessions



### Pilot Study

A pilot study was run from November 2003 to January 2004 to test the interview process. The participants were tutors of online courses who were known to me and the questions asked were as close as possible to those that would be asked of the research participants of the main study:

- **What do you feel about your experiences of online tutoring?**

- **What are the issues for you when working/tutoring online?**
- **How did you/do you resolve those issues?**
- **What else should I know, that I haven't asked?**

#### *Group Discussion Using Email*

A Yahoo group was set up for the four online tutors who agreed to take part. Initial invitations were sent out on 9<sup>th</sup> December, 2003 and three had joined within 6 days. Technology had conspired to bar the fourth participant<sup>14</sup> who did not arrive until January 9<sup>th</sup> 2004. 18 emails were exchanged but a momentum was never achieved. At the end of the third month of the pilot (28<sup>th</sup> January, 2004), I provided a summary of the discussion to date with three follow up questions and a fourth with which I hoped to prompt participants into further discussions. There were no further discussions but it is re-assuring to find that even in this small pilot, the tutors' concerns as reflected by three of the five concerns shown in Text box 3.1, are also to do with time and relate to the students' concerns as found in the main study.

#### Text Box 3.1 Tutors' Concerns

- **How do you support students to meet the learning objectives of the course within an acceptable time frame? How flexible and understanding should a tutor should be?**
- **What are the issues the students have with managing their time and their learning?**
- **The issues around spending more time with one student**
- **Understanding and identifying what the issues are for tutors when the pace of synchronous discussions is fast.**
- **Assessing what it feels like being an online tutor; is the work satisfying?**

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<sup>14</sup> Members can be added to a Yahoo group by an 'add' process or a 'join' process. I had opted to 'add' participants to the group since this normally requires less effort for the participant than going through the 'joining' process. Unless, as this participant had been forced to do - because of unsolicited invitations to join 'inappropriate' groups - the option to be 'added' to groups had been withdrawn.

In an effort to observe participants in the nature of a face-to-face field study, I also asked the following questions:

- Where are you?
- What is going on around you now?

Which questions were completely ignored notwithstanding my leading by example as shown in Text Box 3.2

Text box 3.2 Extract From Email to Group Members

As I write this email I can hear the central heating bubbling behind me and the sun is streaming through the window. A tractor drives past and the dustman walks up the alley alongside my study to collect the bins. He goes. It is very quiet (apart from the heating). I am home alone

The experience gained was valuable and emphasised the need for excellent organisation to enable participants to take part in the group in as trouble-free manner as possible. The main issue for me was managing the tension between the function of an online facilitator to facilitate discussion and the concern of the Grounded Theorist that interventions on the part of the researcher may inhibit or direct discussion.

*Individual Interview Using Chat Software*

I held one chat session with an online tutor, Keith, who was an expert at online synchronous communications and who taught me not to interrupt by ignoring my questions and typing until he had finished his point. A web camera reduced the uncertainty of online communications by showing me that my interlocutor was engaged in chatting notwithstanding that the slow connection speed meant that text and image became out of synch. There was no need to ask the third question since Keith volunteered the explanations as to how the issues were resolved. Since the conversation was not linear, this resulted in constant checking back and forth on my part, to check if I needed to ask follow up questions. Discipline was an issue. There were many things I wished to discuss with Keith because of my interest in what he had to say but this had to be quashed in order not to redirect

the conversation away from what he wished to say – identifying a tension between the professional concern of the individual and the methodological concern of the Grounded Theorist.

#### *Individual Interview Using Email*

My assumption was that the use of email had become commonplace for computer users and the purpose of the pilot was more to test the organisation of the process than participants' comfort with the medium. My main concern was whether people would tell me in enough depth, what they thought. Encouragingly, the online tutor who took part in this part of the pilot expended a great deal of effort giving a full reply. Quoting the participant and requesting that he 'tell me more about' the issue raised, proved an effective way of seeking clarification.

#### *Group Interview Using Chat Software*

I was unable to persuade recruits to participate in a pilot group interview using chat software.<sup>15</sup>

### **Data Collection for the main study**

Having assured myself that the processes and techniques for online interviewing would enable me to collect 'good' Grounded Theory data; that is data that would be substantial and sufficient to produce a Grounded Theory, I was able to start the main stage of data collection. I was keen to find those who had studied where the pedagogic designs of the learning opportunities were based on collaboration and where learners were working at distance. The bulk of my data comes from online interviews with 32 adult online learners from 9 different countries, 23 of whom had studied on the same 20 week course and 9 of whom had studied on courses planned to run over 2 or more years. 3 interviews were held with individuals using chat software, the remainder were conducted using email. I also conducted face-to-face interviews with 3 students who had studied on the 10 week MSc pilot unit. All courses were run from British Universities, 29 of the participants took part in learning opportunities based on a pedagogic design of collaboration. All

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<sup>15</sup> Of the 34 participants in the main study only two people agreed to participate in a chat session. However, differences in time zones and participant's schedules made the organisation of a synchronous chat session impractical and therefore no synchronous group sessions were held either during the pilot study or the main study.

participants had either first degrees or professional qualifications. Further data were collected from observations made whilst tutoring on postgraduate courses over a period of 45 weeks on three x 3 week online courses and three x 12 week online courses plus supervising four online project students from 3 different countries; 2 for 3 months each and 2 for 15 months each.

## Data Analysis

Pages 11 and 13 offer an overview of the data analysis stages, which comprise open coding, selective coding, theoretical sampling, sorting and write up where memoing is conducted throughout. The implementation of the data analysis process is described below beginning with open coding.

### Open Coding

Typically, the first response from each person was the most detailed response with perhaps one or two emails received in reply to follow up questions.

I printed and read the email or chat transcript for an overview. If I felt that I could understand what the participant was telling me, I started coding, otherwise I waited until subsequent emails or chat sessions improved my understanding. When open coding I had a piece of paper in front of me which asked:

- What category does this incident indicate?
- What property of what category does this incident indicate?
- What is the participant's main concern? (Glaser, 1998, p. 140)

I asked these questions of every incident that I perceived and I wrote the codes in the margin, bubble mapped the concepts and links and identified the next questions. I emailed the respondent with the next questions or with a request to set up another chat session. When asking follow up questions by email, I was careful not to put people under pressure (see Text Box 3.3 below) and the interval between receipt of their email and my reply was considered. My concern was not to make the gap so long that I appeared uninterested but not so short that I immediately return the onus of reply to the participant. For example, one individual took 13 days to reply to me and based on my own experience, I believed a response from me within minutes might have been intimidating. My need to reply swiftly was strong but had to be tempered by consideration for the feelings of my



respondents. On occasions it was me that felt if not intimidated then uncertain. In one Method Memo, I wrote: "I put off and put off writing to Karl as I didn't know what I wanted to know from what he said. I found his data overwhelming". It was only when I received insight from another discussion that I was able to work out what I needed to know from him.

Text box 3.3 Excerpt from Memo on Method

Thinking more about the online interview methodology. My main concern is to get people talking to instil the spill to get good GT data. I am careful to be courteous and considerate. I try not to put people under pressure because there is already a lot of pressure in the lives of these people. And I want to know what they know. I want to have a warm relationship with them. I don't want to cause them any distress.

Concerning the mechanics of coding, I wrote the indicators on the appropriate coding card(s) and referenced the indicator both on the printed, coded document and on the coding card. The code is the initial of the person plus the incident number e.g. J-10. Coding to cards was cumbersome and time consuming but it helped me to get a feel for the process and to feel in control of my data. Actually I had too much control of my data and the number of codes spiralled out of control; since I could record each and every code, the rhythms built into the method could not operate allowing the undesirable state of 'full coverage' over parsimony. Had I coded in the margins, the relevant might have emerged more quickly, by the process of forgetting that which did not pattern out. Not yet understanding this, I would write the code at the top of the card and in the body of the card write the reference and the indicator. This was reassuring as the cards became more full, I could compare incident to incident easily. I could see how codes grew and became saturated. I could compare codes with codes and indicators between codes. I could see codes metamorphose into other codes and see the dimensions of codes emerge either across cards or within a card. For example, the coding card '*Compliance*' listed indicators of '*high compliance*' and '*minimal compliance*'. Indicators of '*reducing compliance*' emerged and then '*non compliance*' and that

there were degrees of '*non compliance*'. Thus I realised that '*non compliance*' was an aspect of '*withdrawal*' which itself was '*partial withdrawal*', '*temporary withdrawal*' and '*permanent withdrawal*'. Thus learners began a downward spiral of '*reducing compliance*' and '*partially withdrew*' from the course choosing to omit some work requested of them. Eventually some opted for '*non compliance*' and chose not to do any of the work, withdrawing from the course temporarily e.g. planning to finish the course at later date, or permanently withdrew from the course.

The practice of using coding cards helped me to mislead myself into thinking that one allowed the relationships between codes to remain unwritten and subject to preconscious processing and that one sorted codes, whereas the stricture is to memo ideas about the relationships between codes and to sort memos (Glaser, 1978, p. 83). When I finally realised this, the relief was enormous and led to a flood of memos.

When coding, I was very much aware of having some experience in the field of online learning as a student, designer and facilitator and I wrote of my conscious effort to "follow the data absolutely. I am not coming outside of it and investigating how much of this is obvious or banal". I was therefore not judging the data, merely working with it. Thus in coding, I believe that I was successful in suspending my professional concerns, however, I recognise that the way that I understand the world determines how I interpret any given incident, where I fracture the data, and thus the codes that I choose.

### **The Main Concern.**

After nine months of online discussions and open coding, I had a list of over 130 codes. In preparation for a Grounded Theory Seminar in October 2004, my elaboration to the question 'Have you identified your core category?' is shown in Text Box 3.4

#### Text Box 3.4 Attempting to Identify the Core Category

*Have you identified your core category? If so please elaborate.*

I think I have several potential cores as follows: (categories shown in capitals).

Online Learning offers the opportunity of further study to part-time adult distance learners. The property of Online Learning 24/7 AVAILABILITY, where the learning environment is open for business 24/7, means that I (as an online student) can develop the solution: I ADAPT. Both of these things together, means that for those with EXISTING COMMITMENTS to work and family, further study becomes a viable option. There is a process where the NEED for study is identified and (consciously or unconsciously) EXPECTATIONS as to outcomes of studying are formed. Where the outcome of the decision process leads to a decision to undertake further study there is a COMMITMENT2LEARNING (to various degrees). Committing to further study gives rise to the problem of when do I DO THE WORK? And the solution I ADAPT and find time in which to work: This can mean TIMETABLING TIME i.e. planning time; OPPORTUNISTIC USE OF TIME i.e. taking advantage of the spare moment; JUGGLING COMMITMENTS to free up time to do work; EXTENDING-THE-DAY i.e. working late/getting up early.

Equal to the opportunity offered by 24/7 AVAILABILITY is the problem of ACCESS: How do I overcome the barriers and gain ACCESS to the opportunities to learn? TECHNOLOGY is a barrier to entering the learning environment including issues of: the right to use the equipment (privately owned or publicly available), which is of an appropriate specification, having the right software and having access to an Internet connection which is fixed link/wireless. SCATTERED ACCESS where access is spread across machines, where learners use multiple machines, gives rise to problems in managing software and work files.

There is a relationship between ACCESS: TECHNOLOGY and the scope for ADAPTING.

Also: there are language barriers to access the opportunities to learn because of the reliance on dense text; Dyslexia is a barrier to access the opportunities to learn for the same reason. There are financial barriers to the right to enter the environment i.e. the cost of course

'Doing' THE WORK leads to an iterative ongoing process of EVALUATION of the RELEVANCE OF WORK, i.e. its usefulness, potential use or its inherent

interest i.e. its VALUE OF WORK to me. A positive VALUE OF WORK to me leads to CONTINUED COMPLIANCE where work is undertaken. Low VALUE OF WORK is of REDUCING VALUE and therefore results in REDUCED COMPLIANCE or NON COMPLIANCE AND WITHDRAWAL.

At this point I was searching for the point from which to 'hang' my theory. The sense of knowing but not knowing was infuriatingly tantalising until at last I realised 'Time is the problem for all my people.' (Text Box 3.5)

#### Text Box 3.5 Memo on Time

Time is the problem for all my people. Time to develop competencies: knowledge domain competence (time to explore issues), technical competence (time to explore software, master technology), language competence either as foreign language speaker or as dyslexic (time to translate/understand, formulate and express ideas). Finding time/making time/stealing time to study (juggling existing commitments). Constantly evaluating whether the time spent studying is well spent - is the work relevant, valuable, useful? If yes continue, if no withdraw.

Access as an issue which eats time. 24/7 Availability of online learning enabling people to ADAPT and find time, making study possible. A tutor is someone who saves me time. Poor design (of work or of environment) wastes time.

Conceptualising the problem during the seminar led to the suggestion of the 'Tyranny of flex-time as integrated into a structured life'<sup>16</sup>. This proved an extremely useful example of how to conceptualise a problem and showed me how to move forward though I was aware that it was not quite right. Eventually, I realised that the 'tyranny' was experienced by and captured the main concern of

<sup>16</sup> I am indebted to Judith Holton for this suggestion

some of the participants of the study but not of all of them. Some did not experience the tyranny experienced by others. The conceptualisation thus evolved over the next few months into the problem of 'integrating study into a structured life', where the problem and its resolution eventually became as one.

### **Selective Coding and Theoretical Sampling**

At this point I had almost all I needed to create a theory except the skill. My next steps were to selectively code incidents that relate to 'time', to saturate those codes and to theoretically sample within the substantive population of adult online distance learners for adult comparison groups. Glaser writes:

"The general procedure of theoretical sampling, as we now shall describe it, is to elicit codes from raw data from the start of data collection through constant comparative analysis as the data pour in. Then to use the codes to direct further data collection, from which the codes are further theoretically developed with respect to their various properties and their connections with other codes until saturated. (Glaser, 1978, p. 37)

I decided to begin selective coding by revisiting the data from the initial interviews being certain that I have not noticed all that there was to notice about the participants' comments concerning time. I conducted further discussions with students from two other postgraduate courses run online. Glaser writes:

"It [theoretical sampling] focuses questions more and more on the direct emergence of the theory (thus showing again, how interview schedules constrain theoretical sampling). Questions constantly change with the requirements of the emergent theory and theoretical sampling." (1998, p. 157)

Here, I found a tension between the constraints of the online data collection method and the Grounded Theory method. The questions deduced from the induced codes, at this point were:

- Was time a big issue for you?
- How did you fit in work and personal life and study?
- How did you decide what to work on and what not to work on?
- Why did you take this course?

I did ask these questions of one participant with whom I had corresponded earlier but who had not replied to my original questions but who had contacted me again. The response gained was extremely useful but lacked the context of earlier replies. Text box 3.6 quotes part of a memo in which I reasoned that since the original questions elicited useful responses and that since the earlier participants seemed to respond well to the approach of having their earlier comments quoted back to them and being asked for more details, that I would continue with this approach but code and follow up only on issues relating to the main concern and its resolution.

Text Box 3.6 Memo on Method

The general questions I use are so good at bringing out issues of time as they affect that particular person, I think that I will continue to use them. For instance – if I had restricted the questions only to time in regard of Joe, I believe that I would be unlikely to get the paragraph on solo working and not valuing the exercises. I suppose if I had asked explicitly how do you decide what to work on or not I would have received the answers. But this way the control is in the learner's hands. It cannot be forced if the issues come from them. And it is a nice way to walk towards the issues I want to talk about. It comes naturally. I think particularly since it is email.

I made further attempts at writing useful memos and I found that I used memos to tease out thoughts about categories and that the memos showed my thought process but not yet the relationships between concepts.

In September 2004, I had a horrible amount of a little over 130 codes and time is mentioned only three times:

- Allocation of resources – time
- Designed work – similar time/discontinuity
- Making time

Time was seen as a flow, as a resource and whilst I had identified 'similar time' working, I did not yet recognise time as structure. By December 2004, I had achieved a step change in the way I thought about the design of a course and put aside Wenger's concepts of Designed Work and Designed Environment (1998) for the moment and started to think about the '*Time Design*' of a course. My observations of course design and course designs had identified assumptions about the pace of work achieved and the timing of when work would be accomplished based on assumptions about learners' competencies, in particular language competence and also about learners' work/rest and wake/sleep patterns. My data collection process had shown me that learners have a range of competencies and different work/rest, wake/sleep patterns which are further complicated by different time zones. Thus that the pacing and the timing of work is often different from that assumed by the course designer. By March 2005, I believe the categories of Personal Commitment Structure and Time Design to be as shown in Text Box 3.7

Text Box 3.7 Memo on Categories

<p><b>Personal Commitment Structure</b></p> <ul style="list-style-type: none"> <li>• Commitment type           <ul style="list-style-type: none"> <li>○ Work</li> <li>○ Family</li> <li>○ Social</li> <li>○ Learning</li> <li>○ Other</li> </ul> </li> <li>• Committed time           <ul style="list-style-type: none"> <li>○ Structure points               <ul style="list-style-type: none"> <li>▪ By this time</li> <li>▪ At this time</li> <li>▪ Organisers (lunch break)</li> <li>▪ Fixed (children pickup)</li> </ul> </li> </ul> </li> </ul>	<p><b>Time Design</b></p> <ul style="list-style-type: none"> <li>• Assumed/IMPLIED typical learner profile:           <ul style="list-style-type: none"> <li>○ Assumed/IMPLIED Personal Commitment Structure</li> <li>○ Assumed/IMPLIED Personal Competencies</li> </ul> </li> <li>• Attendance requirement</li> <li>• Course period e.g. 10 weeks</li> <li>• Study hours e.g. 80 hours</li> <li>• Core Period e.g. one week</li> <li>• Assessment period e.g. 3 weeks</li> <li>• Base Time (of course relative to UTC)</li> <li>• Focal Time (of local group or tutor)</li> </ul>
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<ul style="list-style-type: none"> <li>○ To commitment types           <ul style="list-style-type: none"> <li>▪ Work</li> <li>▪ Family</li> <li>▪ Timetabled study time</li> <li>▪ Spare</li> <li>▪ Sleep</li> </ul> </li> <li>• Location time relative to base time</li> <li>• Patterns           <ul style="list-style-type: none"> <li>○ Wake/sleep pattern</li> <li>○ Work/rest pattern</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Structure Points           <ul style="list-style-type: none"> <li>○ Start/end points</li> <li>○ Assessment points</li> <li>○ Organising points</li> <li>○ Emergent connection points</li> </ul> </li> <li>• Connection Design           <ul style="list-style-type: none"> <li>○ Same time connections</li> <li>○ Similar time connections               <ul style="list-style-type: none"> <li>▪ Any time connections</li> </ul> </li> </ul> </li> </ul>
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### Conceptual Description

In preparation for a Grounded Theory seminar in March 2005, I wrote per Text Box 3.8

#### Text Box 3.8 Memo on Core Category.

*Have you identified your core category? If so please elaborate:*

**GT Summary:**

The issue for part-time adult online learners – or CONNECTED LEARNERS – is DEVELOPING COMPETENCE in the context of CONNECTED LEARNING ONLINE. The main concern that protagonists are constantly working to resolve is the INTEGRATION of the TIME DESIGN of the learning opportunity into their PERSONAL COMMITMENT STRUCTURES. INTEGRATION causes TIME TENSION and for some learners TIME TYRANNY.

The warning was in the phrase ‘GT Summary’. Instead of being able to state my core category as ‘Integrating study into a structured life’ my current understanding forced me to write a paragraph. The concepts are there but I am going for ‘full coverage’. I cannot let any of my concepts go, I am wedded to them all. The working paper prepared for this summary is included as Appendix C and is a



perfectly crafted example of 'conceptual description'. 'Theoretical coding' is needed to rescue the theory, to enable the theory to be brought into relief from the flatness of descriptive codes where

“...theoretical codes implicitly conceptualise how the substantive codes will relate to each other as a modelled, interrelated, multivariate, set of hypotheses in accounting for resolving the main concern” (Glaser, 2005a, p. 11).

My memos show how I was desperately seeking the structure of my theory as I draw bubble maps and decision trees to help me see the patterns but they were one dimensional and I focused on either what was in the middle of the bubble map or at the top of the tree. The best that they could do is to capture my confusion and illustrate my struggle to identify the structure as I sought to understand how to model the theory.

### **Upping the Level of Conceptualisation**

Two strands of thoughts collided. Firstly, 'How many Time Designs are there?' Since there are an infinite number of variations of timings of assessments, course duration etc., the idea becomes useless. How can one possibly account for all the Time Designs where the distinctions between each are all but indistinguishable? It is this question that leads me to leave behind the descriptive properties of course period, study hours, assessment period and to abstract the implicit, that is to recognise that there are start points and end points of courses and assessment points. Thus I move from the descriptive to the conceptual. The second strand was to do with participants' comments about structure, that structure is helpful and that the lack of structure is problematic, that structure is linked to how learners organise their lives and integrate study, that the beginning of the week is an organising point, where new work is required to be done. Together these strands led to the realisation that the descriptive properties of 'Time Design' (Text Box 3.7) were based on insight drawn from my experience as a course designer but that what really mattered to the learners were the structure points and the degree to which the points were fixed or moveable. Correspondingly, it was less relevant whether a commitment was to family, work, social life etc. and more relevant as to

whether the structure point was fixed or moveable and thus that the whole issue for learners was integrating their structure points into one life.

It is at this late stage that I can label '*Time Design*' as a category, having a property '*Structure Point*' where the dimensions of that property relate to the degree to which a structure point is fixed (or moveable). I can also label '*Personal Commitment Structure*' as a category having a property '*Structure Point*' having dimensions along a range of fixed to moveable.

### **Sorting and Theoretical Coding**

For me sorting and theoretical coding happened hand-in-hand, where I understand theoretical coding to mean the identification of relevant theoretical codes as opposed to (as I had first envisaged) the active labelling of substantive codes as pertaining to a theoretical code, in the manner of open and selective coding.

I first sorted my memos in preparation for the working paper prepared for the seminar of March 2005. I sorted by code and wrote about each. This was an exercise in finding out what I knew and for me was a necessary part of the process – part of finding out what not to do, of finding out that this approach results in conceptual description and how a conceptual description reads.

In April 2005 "The Grounded Theory Perspective III: Theoretical Coding" (Glaser, 2005) was published and offered invaluable guidance and discussion of 'new' theoretical codes. A memo of April 2005 is shown in Text Box 3.9 where I notice that several theoretical codes may be relevant.

#### Text Box 3.9 Memo on Method

"I have too much; am blurring two stages. I don't have the proper 'story' about how people absorb learning into one life. I do have: juggling-integrating-evaluating." I should have this sorted before I start to identify theoretical codes. However, I think I need the theoretical code to help me make sense of

the substantive!

I can see – as I read TC 05 – that many different theoretical codes might be relevant. Balancing, cycling, Basic Social Process (becoming a student).

I am having tremendous difficulty in seeing the theoretical patterns. I think I have 3 levels: strategic, operational, implementation with 3 level looping and spiralling and may have two different spirals one for the successful and one for the unsuccessful.

But given that a TC is about the relationships between codes, I'm not really at that stage of identifying, merely sensitising self to same and playing with ideas.”

All the theoretical codes in Text Box 3.9 are found to be relevant together with a few others and it will be helpful to define these. A 'Basic Social Process' (BSP) “processes a social or social psychological problem from the point of view of continuing social organisation. Irrespective of whether it solves the problem, to some degree it processes it.” (Glaser & Holton, 2005, p. 6)

“There are two types of BSPs – basic social psychological process (BSPP) and basic social structural process (BSSP). A BSPP refers to social psychological processes such as becoming, highlighting, personalising, health optimising awe inspiring and so forth. A BSSP refers to social structure in process.....(where a) BSSP abets, facilitates or serves as the social structure within which the BSPP processes.” (Glaser & Holton, 2005, p. 11).

Cycling “refers to going over the same path over and over. It also refers to going over and over the different paths in succession whatever the unit action. It easily refers to people's temporal order of work, eating, sleeping etc.” (Glaser, 2005a, p. 24). Balancing “is handling many variables at once in order to start an action, keep

an action going or achieve a resolution. One gets an equilibrium between all the variables. One can achieve stasis for a time.” (2005a, p. 29)

Having sensitised oneself to different theoretical codes, it becomes a matter of ‘trying on’ various codes to see which ones fit. In June 2005, I noticed that there are many potential Basic Social Structural Processes appertaining to any one learner (e.g. parenting, studying, working). I confused the theoretical code ‘Balancing’ with the substantive code ‘Juggling’ – a stage in ‘integrating study into a structured life’. This is understandable since

“Balancing is an abstract model that also can be seen substantively or used as a substantive category e.g. the professional-client balance in a doctor-patient relationship. Balancing as such can also be used as a BSP, when it is worked or occurs in stages such as balancing out the factors in a divorce settlement or in resistance to change in organisation. Thus balancing provides its own mix of TC and substantive categories.” (Glaser, 2005a)

I also wonder if those who juggle and those who struggle are defined by the integrating strategies they employ or the outcomes of their efforts to integrate. I make my first attempt at expressing the ‘homeostasis of motivation’ modelled on the ‘homeostasis of hope’ (Thulesius, 2003). This becomes the feedback loop of the BSPP ‘Integrating study into a structured life’.

At this point in the analysis, it feels as if all the categories are suspended above me, waiting to be told where to land. I am not threatened by them but there are a lot of them and they are beginning to weigh heavy. I remember and am comforted by the comment: “Confusion? Rest in the confusion. Confusion is a really good indicator of something emerging” (Glaser, 2005b)

I disentangle ‘balancing’ and ‘juggling’ realising that in this study, ‘balancing’ is not part of the substantive code ‘integrating study into a structured life’ but is a theoretical code, where the substantive code ‘integrating study into a structured life’ is modelled by the theoretical code, ‘balancing’. On July 8<sup>th</sup>, I sort my memos

again and attempt to sort more intuitively. I have papers spread over two tables, a desk, the kitchen work surface and dangerously, the cooker. I end up with an enormous pile of memos under the heading of 'normal integration' and two smaller piles marked 'integration: step change – new study' and 'integration step change – not study'.

By the end of July 2005 and in response to the question 'What is failed integration?' (see Text Box 3.10) I realise that I recognise the theoretical code of type and that I have a typology of learners where "types indicate a variation in the whole, based on a combination of categories" (Glaser, 1978, p. 75)

#### Text Box 3.10 Memo on Theoretical Coding

##### Failed to Integrate

What does this mean? To what degree has someone failed to integrate? Not consumed enough work. Enough work as planned by self or time design? Failed to integrate today, this week, at all, ever.

Integration is about the long term integrating of structure points. On a day to day basis stuff gets squeezed out or squeezed in. It's at an Operational/Implementational level.

Cumulative squeezing out .... And the relationship with propensity to study?

"I have yet to work out a routine that doesn't have me stressed out come exam time". The rest of his life is constantly tugging at his sleeve. His wife has the family to support – no time for him. Two people studying in one family. He is having time taken from him!!! Study is squeezed out because relatively other stuff is more important reducing his propensity to study – so he allows – reluctantly and stressily, study to be squeezed out. But the costs of failure are high, He has no life and suffers time tension/tyranny. Come exam time, as a structure point approaches, becomes an operational/strategic issue – P2S (Propensity to study) increases and for a while he studies.

This makes him a struggler. How do you cope? It's a struggle. Strugglers experience pain. They may complete or they may fade-away.

Passive Squeezing Out where study of low value and thus P2S is low.

- Operating in avoidance mode and displacement activities allowed to intervene

Active intentional squeezing out is part of juggling and is reorganising or reordering. (Jugglers and strugglers will do this).

Leavers decide to stop. Strategic decision.

Fade-aways not so decisive, they keep failing to integrate until the plug is pulled. (Which is why there are few reliable dropout rates, merely completion numbers – as people only become fade-aways when a structure point – an end point – defines them as having faded away. Stages of fading away: passive squeezing out, temporary withdrawal, end point defines. Fade-aways have not necessarily failed – may have developed competence to required level and have no need of the validation.

This makes it easy now to re-sort the huge pile of memos regarding integration into piles pertaining to 'jugglers', 'strugglers', 'fade-aways' and 'leavers'. Some of the memos have to be cut up, for example where I have talked about each type on one memo of integrating a step change to the personal commitment structure. I also notice that the variables relating to type are the same variables that go into the evaluation calculation. The variables are predictors of type - of whether or not the learners will process their problem of integrating study into their structured lives and the time tension and time tyranny that they will be prepared to tolerate.

As one by one the theoretical codes bring order to a section of chaos, the codes are also confirmed and less pertinent properties dropped. This makes it easier to see where other smaller codes fit in e.g. 'catch up' is a strategy that both 'jugglers' and 'strugglers' employ but probably not 'fade-aways' and definitely not 'leavers'.

By October 2005, I have seven theoretical codes: a Typology, two Basic Social Processes (BSP); i.e. a Basic Social Structural Process (BSSP) and a Basic Social Psychological Process (BSPP) also Balancing, Cycling, Amplifying Causal Loop and Cutting Point. Amplifying causal looping is “.. an ordered, calculated growth of increased size based on a set temporal path (Glaser, 2005a, p. 24). For example 'strugglers' and 'fade-aways' fall further and further behind as they cycle through the basic social processes: integrating and studying. The Cutting Point family

“is a variation of the degree family. Degree focuses on the full range, while here we focus on significant breaks or cutting points on the range. Cutting points are very important in theory generation, since they indicate where the difference occurs which has differential effects”. (Glaser, 1978, p. 76)

In this study the Cutting Point is a step change of the Personal Commitment Structure experienced by 'Leavers' e.g. the birth of a child, the death of a close family member.

This part of the study was about seeking, noticing, exploring, defining, testing and trying on, refining or rejecting, and re-hanging codes and relationships. During this process I changed the way I think about descriptive codes (e.g. evaluating the value of study) and descriptive relationships (e.g. leads to). Where my focus previously was principally on codes, my focus is now on the dynamic relationships between codes. In this study, this is where the complexity lies and which is so elegantly expressed in an algorithm and a set of propositions. (See page 78)

Having developed the theory the literature review is conducted, a process which is fascinating and during which I come to appreciate much more the role of sorting in organising the theory and defining the relationships between categories. It is the

sorting and the use of theoretical codes to organise the theory that separates my work from all the other studies. I can also see why Grounded Theorists are enjoined not to read the literature first. Firstly because of the unexpected field in which my study came to be located; expecting personality to be an issue, I had certainly not envisioned a study to do with student attrition and retention, or student persistence or withdrawal. Secondly if I had located that field, my study would have been abandoned. My horror at finding Kember's (1999) article "Integrating Part-time Study with Family, Work and Social Obligations" was profound. As I sat down to read the article I struggled to see how I could add to the understanding of the field particularly since very few of the categories I identified seemed to be new ideas. As it was I could quickly see how I could add value and as I continued to read the literature after developing the bulk of my theory, I came to see the researchers' struggles to understand - and how the tools, the methods, with which they analyse their data cannot cope with the complexity of the field. I also came to appreciate that using the literature to develop one's own Grounded Theory is invaluable, both in finding new categories and particularly by being able to theoretically sample and saturate existing categories of the growing theory. Not least as I tussled with the principle authors, I finally came to recognise that my study was about '*temporal integration*'.

### **Structure of Theory**

This is a complex Grounded Theory and it may be helpful at this point to give an overview of the structure of the theory, i.e. how the categories are inter-related. In descriptive terms, the main concern of learners is fitting study into their lives on an ongoing basis. In conceptual terms, the basic social psychological process which processes this concern is *temporal integration*. This is the process by which the *structure points* of the *time design* of a *connected learning opportunity* are combined into the *personal commitment structure* of the *connected learner*. Thus two related categories are of import to this theory; the connected learning opportunity and the connected learner. The category connected learning opportunity has properties of *the knowledge domain of the course, the language of the course, the technology of the course* and a sub-category of time design. The



time design has properties comprising structure points of *start points*, *end points*, *organising points*, *assessment points* and *connection points*.

The category connected learner has properties of five *personal competencies* of *the knowledge domain of the course*, *the language of the course*, *technical skills*, *integration skills* and *online learning skills*. Each of these properties has dimensions ranging from high to low, i.e. from high levels of personal competence to low levels of personal competence. In addition the related category connected learner has properties of *need for learning* and *satisfaction* (with learning opportunity) and *cost of failure*, all of which have dimensions from high to low. This category also has a sub-category of personal commitment structure which has structure points having dimensions of being more or less fixed.

The process of temporal integration has three stages; *juggling* which has properties of *scoping*, *prioritising* and *scheduling*; *engaging* having dimensions ranging from *full engagement*, reducing by degrees to *partial withdrawal*, *temporary withdrawal* down to *full withdrawal* (or disengagement); and *evaluation*. The evaluation stage involves the assessment of the benefits of engaging in study, ('*what's in it for me?*') and the costs ('*is it worth it?*'). The outcome of the evaluation is expressed as the *propensity to study* which forms a feedback loop to the juggling stage. The balancing algorithm, captures the relationships between the dimensions of an online learner and the structural conditions under which temporal integration takes place and how they co-vary during the temporal integration process to impact upon the assessment of the benefits and costs of engaging and the propensity to study. Lastly a learners' type is defined in the first instance by the two categories, personal commitment structure and personal competencies; by the value of study in the second instance; and by the cost of failure in the third.

## Summary

In this chapter I have explored the issues of collecting data online and was surprised to find that participants preferred asynchronous email. In retrospect this is now understood in terms of this theory. The broad questions asked of learners

prompted detailed replies and quoting recipients replies and asking them to explain their comments, proved an effective method of eliciting further data. Researchers planning to use group discussion and chat software might like to consider using a table plan and should be prepared to model behaviour and facilitate discussion, intervening as little as possible as soon as possible. They should also be aware that the practical problem of time-matching is likely to make organising a synchronous event problematic. Researchers should be aware of the tension between their dual role as online facilitator and interviewer, and thus of the potential conflict between the need to facilitate each participant's comfort with the online medium and with each other and the Grounded Theorist's need to intervene as little as possible.

In this Chapter I have also illustrated the experiential nature of the process, detailing how my understanding of the method developed as I engaged with the method. This has contributed to the literature discussing the implementation of the Grounded Theory research method and has substantiated my claim to have carefully produced a sound Grounded Theory according to the rigours and tenets of the method.

Also in this Chapter I have illustrated the power of the method and in particular theoretical coding, by showing how the potentially overwhelming complexity of data is made manageable by organising theory using 'theoretical codes'. The three theoretical codes of major import in this study are a '*typology*' of learners all of whom engage in the '*basic social psychological process*' (BSPP) '*the temporal integration*' of '*connected study*' into a '*structured life*', and within which process nests a '*balancing*' algorithm (Thulesius, 2003) explaining a learner's '*propensity to study*'.

In the following chapter I shall explicate the Grounded Theory: "The Temporal Integration of Connected Study into a Structured Life". I shall use the typology to detail the process of the *temporal integration of study* and for each type, I shall examine the relevant dimensions of the type of learner, the structural conditions within which the learner operates, the strategies and tactics used by learners and

the consequences of engaging in studying. I shall precede this with an overview of how the theory fits together; briefly explaining the main concern of adult connected learners, the core category '*the temporal integration*' of *connected learning* into a *structured life*', and how the inter-related categories of connected learning and connected learner and their respective sub categories of time design,' and 'personal commitment structure', and the dimensions of a connected learner, impact amongst and between themselves and with the core category as expressed by a balancing algorithm.

## Chapter Four: The Temporal Integration of Connected Study Into a Structured Life: A Grounded Theory

### Overview

This chapter represents the main contribution to knowledge of this thesis. It is based on a considerable collection of primary data amassed over four years, the collection and analysis of which were rigorously conducted according to the tenets of the robust and systematic research method, Grounded Theory. The chapter will commence with an explanation of the main concern of *connected learners*, and before presenting the core category of *temporal integration*, will introduce the related categories of *connected learning* and connected learner and their respective sub-categories of *time design* and *personal commitment structures*. It will also detail the properties (and their dimensions) of the category, connected learner which includes *personal competencies*, *value of study* and *satisfaction with study*. A brief overview of the temporal integration process, its three stages of juggling, engaging and evaluating and its feedback loop ‘the propensity to study’ will be presented next. Different connected learners experience the temporal integration process in different ways and are distinguished by their personal commitment structures, personal competencies, value of study and *cost of failure*. Using these distinctions, four main types of connected learner can be discerned; juggler, struggler, fade-away and leaver. Since the temporal integration process is experienced differently by each, the temporal integration process is presented in detail first as experienced by jugglers, followed by the differing experiences of strugglers, fade-aways and leavers.

### The Main Concern

The main concern of the adult connected distance learner is to fit study into his or her life on an ongoing basis. Distance learning is taken on in addition to existing commitments and inevitably life intervenes and study gets in the way. The problem is that the learning materials do not go away. The 24/7 availability of the learning environment accessible from increasingly diverse locations and the *persistence* of learning materials means that lectures are always there to be attended and past discussions are waiting to be ‘overheard’. The difference between the traditional distance learner and the online learner is the mode of delivery i.e. the Post Office

or the Internet. The difference between the online learner and the connected learner<sup>17</sup> is pedagogy. Where collaboration is built into the learning design then learners must communicate. This brings with it, its own special strains on a learner's diary; the more intense the pattern of communication, the greater the strain. The problem of fitting study into a learner's life is achieved, more or less successfully, through the '*temporal integration*' process.

### **Connected Learning**

The studying process occurs under certain conditions which are; the '*technology*' used, the '*language of the course*', the '*knowledge domain*' of the course, the particular mix of personal commitment structures of the learners of the course and the '*time design*' of the course. The time design comprises *structure points* such as *start points* (e.g. start of course or assessment period), *end points* (e.g. end of course or assessment period), *assessment points* (hand in dates, exam dates), *organising points* (start of week, end of week) and *emergent connection points* (of learners achieved through for example, asynchronous postings, synchronous meetings).

### **Connected Learner**

#### **Personal Commitment Structure**

Prior to entering into a course of study there are typically four main strands to a learner's life: work, family, social and self. Each of these strands contains structure points which may be more or less fixed e.g. times to pick up the children from ballet, school or football, times to arrive at work and depart from work, times to be at choir practice or community meetings. The combined structure points from the intersection of all those strands form a unique structural condition which is the learner's 'personal commitment structure'. In undertaking a course of online study the learner will expand his/her personal commitment structure to include a fifth strand, of 'connected study'. For connected learners, temporal integration is thus the process of combining or integrating the structure points of their online study

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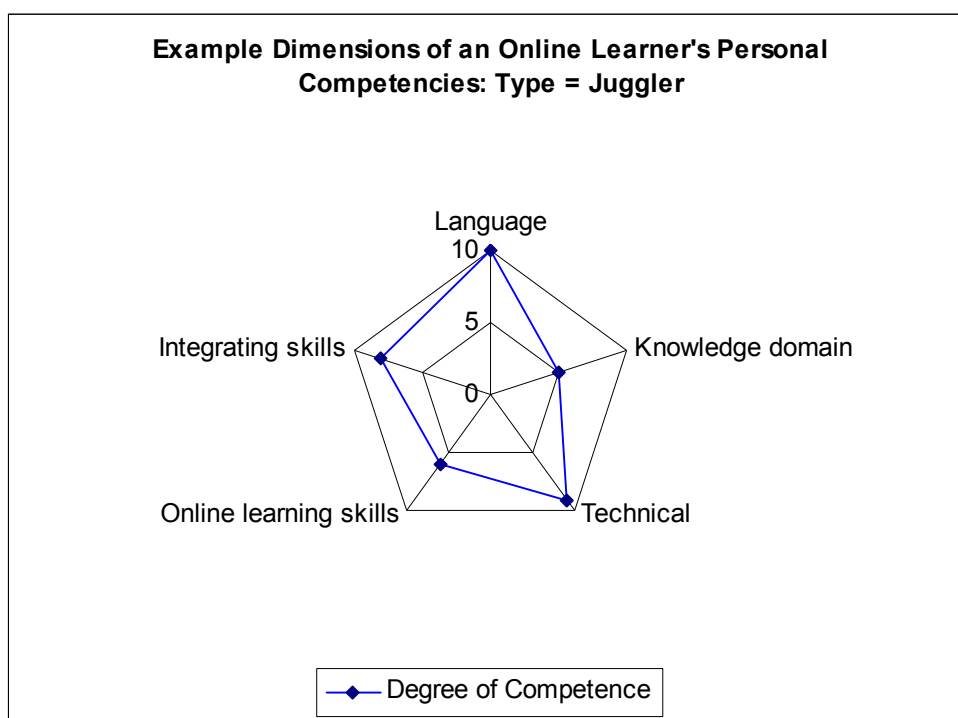
<sup>17</sup> From this point on, a distinction is made between the 'online learner' who does not engage with a collaborative learning opportunity and the 'connected' learner who does. A further distinction is made between the adult online distance learner who is not campus based and the connected learner – who may be.

course into their existing personal commitment structures enabling them to engage with and take part in the process of studying.

### Personal Competencies

A competent online learner will need to have or to develop the core competencies and skills which will enable them to manage the structural conditions and process the main concern viz; *personal competencies in the technology of the online course, the language of the course, the knowledge domain of the course, online learning skills<sup>18</sup> and integrating skills*. The particular mix of skills of any one learner if graphed would illustrate the shape – the dimensions (Strauss & Glaser, 1970, p. 12) of that learner's personal competencies. Figure 4.1 illustrates one of many possible combinations of the dimensions of personal competence of one type of learner.

Figure 4.1: Example dimensions of an online learner's personal competencies.



### Temporal Integration

The 'temporal integration' of 'connected study' into a 'structured life' is the dynamic and iterative process of 'juggling', 'engaging' and 'evaluating'. Juggling is about taking, finding and making time in order to do the work of the course – to

<sup>18</sup> A competent online learner will be disciplined, focused, be able to cherry pick postings, type, be independent in finding an 'answer now' and where required have online group working skills .

engage in study. Engaging is about complying with the course instructions and tussling with the issues of the knowledge domain. It is about taking in information by reading materials, listening to audio or video presentations and making sense of what is being perceived. It is not about the act of expressing through online chat, writing or posting. Engaging is thus the psychological aspect of studying as distinct from the behavioural aspect of studying. Evaluating is about assessing the value of study in terms of whether what is being learnt is useful or relevant, assessing the costs of integration and weighing the one against the other. The outcome of the evaluation stage is an intention regarding how much effort will be put in future juggling and engaging.

*The Value of study or 'What's in it for me?'*

Each connected learner will have identified a greater or lesser '*need for learning*' expressed most usually as a need to develop competence for professional or work related reasons. Whilst for most learners, the principle need appears to be the learner's wish to possess professional competence, some focus on validation of competence through certification. Only a very few individuals identify a purely personal, primary need for self-development and amongst the most committed learners are those individuals with an altruistic need to contribute to his/her society. A connected learner will also have initial expectations that the chosen course of study will satisfy his/her need for learning, and during the course, will continuously evaluate the degree to which the course is perceived to be satisfying this need asking: What's in it for me? Is what I am being asked to do relevant, useful, valuable, of interest, now or in the future? The need for learning and the degree to which studying is perceived to *satisfy*<sup>19</sup> the *need for learning* determine the '*value of study*' to the learner.

*The cost of integration or 'Is it worth it?'*

Each learner joining an online course will hold, consciously or unconsciously, expectations as to how the course of study will be organised. Severe tension can arise for those learners where a mismatch of expectations occur particularly where the course design expects the learner to flex his or her activities to the course

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<sup>19</sup> The property is satisfaction (with study as a means of satisfying need for learning) having a dimension of degree, i.e. high degree of satisfaction – low degree or no satisfaction.

timing and the learner expects to be able to flex the course to his/her life timing. The 'juggling' and 'evaluating' stages of 'temporal integration' cut across all the strands of a learner's life. However, where the learner 'engages' with the course in 'doing' study; the process of 'temporal integration', intersects specifically with the process of 'studying' at the point of engagement where 'engaging' is the psychological aspect of the behaviour of 'doing' the work of studying. The consequences of 'engaging' in 'studying' – to whatever degree – are that work is consumed, competencies are developed and time is used. To the degree that more time is used than can be comfortably accommodated by the Personal Commitment Structure, tension arises between a learner's current commitments, which the learner experiences as a state of being. This is '*Time Tension*' and which may be experienced either positively or negatively. Extreme cases of time tension result in a state of '*time tyranny*' which is endured because either the value of study or the negative consequences of failure and likely future hardships are too high.

The question '*what's in it for me?*' is followed by '*is it worth it?*' The answer is expressed in the learner's intention to continue with study, i.e. his or her propensity to study and thus impacts on the energies expended on future juggling and engaging efforts.

#### *Propensity to Study*

The relationships between and amongst the categories discussed above which combine to impact upon the learner's '*propensity to study*' are laid out in Figure 4.2. In a little more detail, the propensity to study can be viewed as a function of the 'value of study as a means of satisfying the learner's need for learning' (what's in it for me?) less the '*cost of integration*' (is it worth it?). The cost of integration being a function of the personal commitment structure, personal competencies and the cost of failure where the cost of failure may be counted in terms of reduced feelings of self worth, lost opportunities and/or as a financial cost paid by the learner. Describing the relationships in Figure 4.2. results in a set of propositions as follows and paves the way for the identification of types of learners.



1. Where the value of study is high, the propensity to study will be high.
  - a. Where the Personal Commitment Structure is also fully committed, there is likely to be a cost of integration. Personal competence co-varies with the Personal Commitment Structure to affect the level of pain experienced
    - i. Where personal competence is also high, the cost of integration is likely to be tolerable and may be problematic ( juggler)
    - ii. Where personal competence is low, the cost of integration is likely to be problematic (struggler)
    - iii. Where personal competence is low and the cost of failure is high, the cost of integration is likely to be hard to tolerate (struggler)
  - b. Where the Personal Commitment Structure is not fully committed, the cost of integration is likely to be tolerable except:
    - i. Where the cost of failure is high, the cost of integrating is likely to be problematic ( juggler/struggler)
2. Where the value of study is low, the propensity to study will be low (fade-away) except:
  - a. Where the cost of failure is high, the propensity to study will be high
    - i. Where the personal commitment structure is full and
      - personal competence is high, the cost of integration is likely to be problematic ( juggler)
      - personal competence is low, the cost of integration is likely to be hard to tolerate (struggler)
    - ii. Where the personal commitment structure is not fully committed and
      - personal competence is high, the cost of integration is likely to be tolerable ( juggler)
      - personal competence is low, the cost of integration is likely to be tolerable and may be problematic (struggler)

These relationships can be expressed as an algorithm thus:

$$\text{Propensity to Study} = \{[\text{Value of Study} + (\text{Cost of Failure} \times (\text{Cost of Failure}/\text{Value of Study}))] - [\text{Personal Competence Structure} - (\text{Personal$$

Competence Structure x Personal Competencies))} where Value of Study =  
Need for learning x Degree to which study satisfies learning.

i.e.

$$P = \{[V + (F \times (F/V))] - [S - (S \times C)]\}$$

$$V = N \times D$$

Where

P = propensity to study

V = value of study

F = cost of failure

S = personal commitment structure

C = personal competencies

N = need for learning

D = degree to which learning satisfies need for learning

Figure 4.3 shows the algorithm populated with values. The only absolute value is assigned to the 'need for learning', the remainder are expressed as weights, where 1 represents complete satisfaction, a high cost, full commitment or fully competent as appropriate and 0 represents the inverse.

The cost of failure is placed differently in figure 4.2 to figure 4.3 in order to emphasise that the cost of failure has little impact where the value of study is high and much greater impact where the value of study is low. This placement also emphasises the propositions that

- The value of study and the cost of failure are the motivators for learners to engage in study or to disengage from study.
- the cost of integration is only a consequence of integration, and whilst it does not drive people to make a conscious decision to leave a course it may lead learners to re-evaluate the need for learning relative to other commitments and to commence on a downward cycle of reducing compliance and to fade away from the course.

Figure 4.2 Propensity to Study: Relationships

<b>Value of Study as a means of satisfying need for learning.</b>	<b><i>Propensity to Study</i></b>	<b>Personal Commitment Structure</b>	<b>Personal Competence</b>	<b><i>Consequence of Integration</i></b>	<b><i>Propensity to Study</i></b>	<b>Cost of Failure</b>	<b><i>Consequence of Integration</i></b>	<b><i>Propensity to Study</i></b>
High	<i>High</i>	High	High	<i>neutral /time tension</i>	<i>High</i>	High	<i>neutral /time tension</i>	<i>High</i>
	<i>High</i>		Low	<i>time tension</i>	<i>High</i>	High	<i>time tyranny</i>	<i>High</i>
	<i>High</i>		High	<i>neutral /time tension</i>	<i>High</i>	Low	<i>neutral /time tension</i>	<i>High</i>
	<i>High</i>		Low	<i>time tension</i>	<i>High</i>	Low	<i>time tension/time tyranny</i>	<i>High</i>
	<i>High</i>	Low	High	<i>neutral</i>	<i>High</i>	High	<i>neutral</i>	<i>High</i>
	<i>High</i>		Low	<i>neutral</i>	<i>High</i>	High	<i>neutral /time tension</i>	<i>High</i>
	<i>High</i>		High	<i>neutral</i>	<i>High</i>	Low	<i>neutral</i>	<i>High</i>
	<i>High</i>		Low	<i>neutral</i>	<i>High</i>	Low	<i>neutral</i>	<i>High</i>
Low	<i>Low</i>	High	High	<i>neutral</i>	<i>Low</i>	High	<i>time tension</i>	<i>High</i>
	<i>Low</i>		Low	<i>neutral /time tension</i>	<i>Low</i>	High	<i>time tyranny</i>	<i>High /resentful</i>
	<i>Low</i>		High	<i>neutral</i>	<i>Low</i>	Low	<i>neutral</i>	<i>Low</i>
	<i>Low</i>		Low	<i>neutral</i>	<i>Low</i>	Low	<i>neutral</i>	<i>Low</i>
	<i>Low</i>	Low	High	<i>neutral</i>	<i>Low</i>	High	<i>neutral</i>	<i>High</i>
	<i>Low</i>		Low	<i>neutral</i>	<i>Low</i>	High	<i>neutral/time tension</i>	<i>High /resentful</i>
	<i>Low</i>		High	<i>neutral</i>	<i>Low</i>	Low	<i>neutral/none</i>	<i>very low</i>
	<i>Low</i>		Low	<i>neutral</i>	<i>Low</i>	Low	<i>neutral/none</i>	<i>very low</i>

Figure 4.3: Propensity to Study expressed as an Algorithm:

What's in it for me?						Is it worth it?				
Need for learning	Degree to which study satisfies need for learning	Value of Study as a means of satisfying need for learning	Cost of Failure	Cost of Failure/ Value of study	Propensity to Study (P2S)	Personal Commitment Structure (PCS)	Personal Competence (PCs)	Cost of integration: PCS - (PCS*PCs)	Propensity to Study	Consequence of integration
10	1	10	1	0.1	10.1	1	1	0	10.1	neutral/ time tension
10	1	10	1	0.1	10.1	1	0.1	0.9	9.2	time tyranny
10	1	10	0	0	10	1	1	0	10	neutral/ time tension
10	1	10	0	0	10	1	0.1	0.9	9.1	time tyranny/time tension
10	1	10	1	0.1	10.1	0.1	1	0	10.1	neutral
10	1	10	1	0.1	10.1	0.1	0.1	0.09	10.01	Neutral/time tension
10	1	10	0	0	10	0.1	1	0	10	neutral
10	1	10	0	0	10	0.1	0.1	0.09	9.91	neutral
10	0.1	0.1	1	10	10.1	1	1	0	10.1	time tension
10	0.1	0.1	1	10	10.1	1	0.1	0.9	9.2	time tyranny
0.1	1	0.1	0	0	0.1	1	1	0	0.1	fade away
0.1	1	0.1	0	0	0.1	1	0.1	0.9	-0.8	Fade away
0.1	1	0.1	1	10	10.1	0.1	1	0	10.1	neutral
0.1	1	0.1	1	10	10.1	0.1	0.1	0.09	10.01	neutral/ time tension
0.1	1	0.1	0	0	0.1	0.1	1	0	0.1	fade away
0.1	1	0.1	0	0	0.1	0.1	0.1	0.09	0.01	fade away

## A Typology of learners

A type is defined by the level of tension of the personal commitment structure in combination with level of personal competencies, the value of study and where relevant the cost of failure. There are four main types of adult online learners, jugglers who value study highly, have high levels of personal competencies and have full personal commitment structures; strugglers who also value study highly and have full personal commitment structures but have low levels of personal competencies;<sup>20</sup> fade-aways who consistently fail to integrate study into their personal commitment structures and attribute a low value to study and leavers who are principally defined by a step change in their personal commitment structures. There follows an explanation of how each type processes – or fails to process - the problem of fitting study into their busy lives.

### Jugglers

#### Juggling across all strands.

Jugglers are the successful learners who exhibit strategic behaviours prior to entering into a course of study; they *restructure* their lives, *plan* and *timetable* study so that when the course starts, there is already space for learning in their lives. Jugglers value study highly, have exacting commitments to work and or family and often also have social commitments. Whilst jugglers may not hold all of the core competencies associated with being an online learner, they will during the course of study, develop them. In restructuring their timetables, jugglers may negotiate time for studying from their employers or from their families, perhaps agreeing a day a week from work to study or agreeing a redistribution of family duties with a spouse. They may *take time* from themselves by routinely *extending-the-day*, getting up or early or going to bed late in order to study.

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<sup>20</sup> At the margins of type the balance between the personal commitment structure and level of personal competencies change. E.g. the juggler-on-the-margin will have a less full personal commitment structure and lower levels of personal competencies than other jugglers. And the struggler-on-the-margin will have higher levels of personal competence and a less full personal commitment structure than other strugglers.

Learners juggle so that they can 'fit in' everything that they need to accomplish across all the strands of their lives. They juggle at an operational level (months, weeks, days) and at an implementation level (hours and minutes). For jugglers, a plan or a timetable is the starting point and the elements of the plan are successfully re-organised as necessary, in response to triggers received from their personal commitment structures. At an operational level, the trigger may be a period of travelling on business, a daughter's dental appointment, an extra rehearsal, a holiday. At this level, there is time to enable the trigger to be incorporated into a schedule. At the implementation level triggers are always unexpected such as missing the train home, a child-minder failing to arrive, a friend needing help, becoming unwell. Learners juggle and re-organise but under these conditions, studying is the victim of the re-organisation and is *squeezed out*. In order to squeeze studying back in again, the learner might make *opportunistic use of time*, engaging in studying whilst waiting an airport lounge or travelling on public transport or may chose to extend-the-day. If the learner is unable to retrieve lost time quickly then s/he is unable to complete sufficient work and falls behind. *Catch up* strategies are discussed below. Where this happens routinely the juggler may turn into a 'struggler'

### **Juggling within the studying strand.**

The aim of juggling is to find time in order to study, success means that the learner is poised to comply with course requirements and to engage in study

At an operational level, the time design is the primary source of triggers. Time design is latent in an educational opportunity. Work is required to be completed, readings read, postings written, assessments handed in. Each task will take an amount of time and course work is usually organised by units of time. For example a course may organise its work in units of one week with the beginning and end of each week forming the Organisation Points. In the same way, Assessment Points will mark the start and end of assessment periods, within which period the work of the assessment must be completed. An exam is another example of an Assessment Point, preceded by a revision period marked by an Organisation Point.

Jugglers pace their work, completing on time. The structure points are known and jugglers *scope* the work estimating what needs to be done by when and *prioritise* and plan their activities accordingly. Variations in time designs conspire to thwart. For example, the learner who juggles out study to holiday with family, may complete the required readings but may not be permitted to make postings ahead of time and is either forced into catch-up or is excluded from the activity. Where a poor time design requires excessive amounts of work, all learners will be challenged and jugglers, rather than over-committing themselves, will consciously resort to a '*partial withdrawal*' strategy prioritising tasks and excluding some.

The single most important variation in time design which causes learners the most problems is the '*connection design*' i.e. is the work designed to be carried out solo or in collaboration with other learners? Can the work be done at any time (solo) or is it required to be done at the same time as others (synchronously) or at similar times to others (asynchronously)?

Solo design causes little problem, an example of which might be a course teaching learners how to use a particular piece of software. Work can be completed at any time and may or may not be marked with a final assessment point or by an end point when access to the course is withdrawn. However when collaborative work is required, learners are constrained by being obliged to connect with one another either within a period of time or at the same time. The tighter the structure of the time design – the more organisation, assessment and connection points there are - the less the learner is able to be flexible, compromising the learner's ability to integrate, making it harder to complete the work on time. The greater the number of people involved in the collaboration, the worse the problem of organisation and synchronisation, the greater the time wasted, compounding problems of integration. Learners expecting the course to flex to them will experience the greatest dissonance under this design.

The main issue for same time collaborations will be the particular mix of the personal commitment structures of learners of the course. The greater the

differences between the commitment patterns of learners, the harder it is for them to *time-match*. Time imperialism is rife. Learners in time zones to the west of the main group find it harder to time match and are often excluded from synchronous meetings, as are shift workers where the norm of the group is daytime employment. One learner from the West Indies wrote:

“We are 4 or 5 hours depending on the time of year, behind the UK and this causes major headaches in relation to the Virtual Classes. ALL the classes are either held when I am sleeping or when I am at work. This means I am always either late or don't attend many VCs..... [in one course] we were placed into Virtual Groups. In my group there were 3 guys from the UK and 2 of us from the West Indies. Of course, we met very sparingly and I don't think we were able to maximise the learning of being in a group.”

The vignette in Text Box 4.1 shows a group of jugglers and a struggler (Bill) driven by an approaching assessment point trying to arrange a synchronous meeting during a synchronous meeting. The struggler is effectively excluded by the needs of the other group members though the process is so subtle it is hardly noticed by the other group members who seem to have no appreciation of Bill's circumstances.

Text Box 4.1 Vignette: Time Imperialism and Time Matching

*Bill enters the room Thursday 8.08 p.m.*

Bill: apologies for late arrival, problems with v.slow connection

Carl: that people learn when they NEED to learn and lonly what they NEED to learn at the time for their own reasons

Carl: Look at us with deadlines

Bill: Must leave for work in five-ten minutes,

Amy: Can't we work on this on Saturday?

Bill: let me check.....

Carl: Yes Bill, I'm here for the duration - perhaps we should piece together someting for PD and reconvene at 9pm ?

Amy: does 12am on Saturday mean first or last thing on Saturday?

Bill: sorry Amy, midnight saturday.



Amy: Could we meet with Bill on Saturday (not cup final times?)  
Carl: Can we meet agin on Sat am Bill ?  
Amy: About 10am?  
Carl: sounds fine  
Bill: see you at 10am sat bye.  
Denise: Is 11.00 too late?  
--- *Bill leaves the room Thursday 8.36 p.m.*  
Carl: should we reconvene at 10am Sat for all of us then ?  
Denise: Edward and I need to go to the wood yard  
Amy: I have to take my daughter to dance class between 11.15 and 12.15 so 12.30 would be fine too  
Carl: I can fit in with the rest of you  
Denise:12.30 would be wonderful, do we need to email Bill?  
Carl: Bill's gone, and he says 10  
Carl: yes ok email him  
Amy: I'll log on at 10am as well and let him know if he hasn't read the email  
*Bill enters the room Saturday 10:00am*  
*Amy left the room Saturday 10:03am*  
*Bill enters the room Saturday10:03am*  
*Amy enters the room 10:04am*  
Amy: Hi Bill - we rearranged the time to 1230 as Denise couldn't make 10am  
Amy: Can you make it then?  
Bill: Hi, sorry that's way past my bedtime!  
Amy: Have you been working nights?  
Bill: Yes - been up all night

Under these conditions there is little that the excluded learner can do to resolve the situation other than remonstrate with the course designers requesting that groups be designed consciously and with awareness of the mix of the personal commitment structures of the learners.

The problems of similar-time design are less severe than those of same-time design since there is greater latitude regarding the timings of connections. Extremes of differences between time zones can cause patterns of interactions to cluster around the postings of the individuals within time zones merely because

the timings work for them. A momentum forms and carries the interactions such that it is hard for those in other time zones to join in. The discussion has passed whilst the others slept.

Depending on the pedagogic design of work, learners may be dependent on one another or interdependent. The dependent are vulnerable to the work patterns of others. For example the Juggler who has to summarise the week's discussion postings, needs postings to be made in a timely manner and can be resentful of those who post at the last minute since it upsets the juggler's ability to plan and integrate. Contrast this with the experiences of those who posted late, who were working in a different country having a working week which was organised around different points to that around which the time design was organised – and which caused these learners to be the last to post and thus to miss out on the comments of others.

Thus there are times when the juggler's integration skills and juggling strategies are severely limited and the juggler unable to successfully respond to the triggers emanating from the time design. Under these circumstances the negative consequences of exclusion, resentment and time tension are experienced and absorbed.

Successful integration is maintaining a new and sustainable equilibrium in the expanded personal commitment structure.

### **Engaging**

Engaging is to do with taking information in and tussling with the issues. As an implementation level activity, it is also about using the core competencies of an online learner to defend the time won for studying by being focused, disciplined and independently solving their own problems, finding their own '*answers now*'.

One of the consequences of complying and engaging in studying is that time is used. Implicitly or explicitly the 'time design' will incorporate an estimate of how much time that studying will take. As the learner complies, things happen to *waste*

*time* or to cause the learner to *take more time*. Specifically there are triggers from the structural conditions; the online connection is lost removing access to the learning environment, the server is off-line for maintenance, the reading uses language that is too dense, a new concept is used that is not understood, a child wakes, a door bell rings, a colleague interrupts. Different combinations of triggers from the different parts of a learner's life conspire to waste a learner's time or to take the learner more time than estimated or planned. To each of these triggers, a competence may mitigate the time wasted or taken. Knowing how to re-install the broadband access software, re-ordering tasks such that offline work is completed whilst the server is offline, organising support from family members and colleagues to protect the learner from distractions. Technology can *save time* in providing diagnostic software, translation programs or enabling instant recourse to answers online. A learner may be able to avoid wasting time through being technically competent but have poor online learning skills such that s/he is distracted by interesting but off-topic links or a visiting neighbour. The personal commitment structure - including the time design of the course – and personal competencies can co-vary within themselves and between each other to cause or mitigate time loss. Jugglers develop or possess the core competencies which enable them to manage the triggers received from their personal commitment structures to defend the time won for learning.

The consequences of engaging in studying are that time is used, work is achieved, time tension is experienced and competencies developed to whatever degree. The learner will also be forming views on the degree to which this activity is satisfying his/her need for learning.

### **Evaluation**

During the Evaluation stage, the learner assesses the value of work in terms of whether it is useful or relevant resulting in an intention to study. This is not a linear process of actions more an omnipresent state of mind.

Whilst jugglers are busy, they are also competent and manage to keep all the balls in the air without suffering unduly. They have a strong need for learning, and thus

a high propensity to study which means that studying as an activity will receive a high priority during the juggling stage and jugglers will try hard to find, make or take time to work. For all the while that the work is considered useful or relevant, jugglers succeed and find great satisfaction in their accomplishments.

The conditions under which a juggler may change abruptly into a leaver or turn gradually into a fade-away are discussed in a later section.

### **Strugglers**

Strugglers face the same issues as jugglers plus a few more of their own. They value study highly, have jobs, social commitments and are likely to have families but crucially will, at least initially, also have lower levels of competence in one or more of the core competencies of an online learner. This is not to criticise the learner since the purpose of study is to develop competence both in the knowledge domain and in the new skills required to enable that learning in an online environment. At its simplest, lower levels of competence means that studying takes longer to accomplish thus what principally distinguishes jugglers and strugglers is the consequent pain of integration and the degree of time tension that strugglers experience.

Strugglers notice a simultaneous lack of structure and a surfeit of structure. Strugglers bemoan the absence of structure found in the face-to-face learning environment – requiring the learner's presence at a stipulated time and place notwithstanding that this is the reason why they are unable to undertake face-to-face study. But whilst jugglers recreate the structure for themselves, many strugglers do not. This may be due in part, to the fact that those strugglers expect the course to flex to their lives and commitments and thus do not see the need to restructure their lives in order to make space for learning. Instead, they rely on their spare time and their ability to make, find or take time. This makes them much more vulnerable to triggers coming from their commitment structures and a good solution for strugglers is *routinisation* such that found time becomes routinely available. For the main part, however, strugglers are in a permanent state of 'catch-up' and disequilibria.

Strugglers then are over-committed. They have more to accomplish in the time available to them than they can comfortably achieve. Strugglers juggle in the same way that jugglers juggle - they find, make and take time. Strugglers engage and do the work of the course but are unable to accomplish all of the work. For those who lack competence only in technology and/or online learning skills, the problems caused by triggers from the environment, e.g. malfunctioning software or a plethora of postings, will diminish as competence develops over time. For those who only lack competence in the knowledge domain, the issues that mean that the struggler takes more time to accomplish work than the juggler, will again, over time, diminish. Developing competence in these areas is likely to enable the struggler to grow into a juggler.

It is those learners whose native tongue is different to the language of the course who suffer most. Gregory writes:

“In my situation and with my language background and non-daily use of English literature, of course it takes much more time to read, incorporate English texts. I translated the texts, made abstracts in [my language] and this took several hours”

Thus there is an extra step of preparation to enable the learner to engage with the work and tussle with the issues. The ‘doing’ of work also takes more time: Sebina writes “I can say half I want and it takes me twice the time”.

Couple this with a high need for learning and the consequences of integration become severe. Gregory wrote:

“Reading back my [journals] the time aspect was dominant present, already from week 1: This awful, horrible, frustrating, discouraging fear of failure provoking time aspect was always mentioned somehow in most of my [journals]. Most of the time or weeks, I had the feeling of not keeping up, running behind, emotional fatigue and pushing myself to contribute, even at

two or three o'clock at night sometimes..... I survived this time terror' with the focus on the learning outcome "how not to design/coach a (online) course"

Gillie wrote:

"But I know in those text was a lot of useful information for me and for my country. Further months after it, I will be start my first experience like online teacher so that will very important for me. Onde day I even cry!.... I was very tired and stressed so I cry. I almost can't to leave, I was very busy ....we soffred!"

For these people competence in the language of the course improves but never sufficiently to alleviate the time tension. Since the propensity to study remains high, the negative consequences are cumulative and the tyranny of study is endured.

### **Active Displacement of Study**

Where jugglers usually engage, strugglers may displace - though the active displacement of study can be carried out by both jugglers and strugglers - in response to triggers from their personal commitment structures. At an implementation level some strugglers struggle because of the routine and active displacement of study where some other commitment(s) becomes genuinely more important. This commitment is juggled in and study squeezed out. Jugglers are generally able to reorganise commitments and enable study to be juggled back in again. Strugglers, unable to negotiate the support that they need from their personal commitment structures, are often unable to do this.

Sometimes the absence may be prolonged. The *persistence* of materials means that the work does not disappear with time – the videoed lecture is still available to be watched, a myriad of postings have appeared and have to be navigated. Overwhelmed students ask for a way in. The tutor may offer a catch-up strategy tailored to the individual; otherwise other learners point the way. Since it requires too much time to fully catch-up, a partial withdrawal from the work of the course is

effected where some work is prioritised, engaged with and completed and other work is displaced and left undone.

### **Fade-aways: Evaluation and The Reducing Value of Study:**

A reduction in the value of study as a means of satisfying the learner's needs is brought about either by a step change in the personal commitment structure of the learner such that the relative importance of the need for learning reduces as some other need increases, or; that this particular course of study is disappointing and not meeting the learner's needs as a means of satisfying his/her need for learning. Or both.

Learners juggle, engage and evaluate the value of learning. Whilst the need for learning remains the same, where the work completed is judged less useful or relevant, the value of study as a means of satisfying the need for learning falls. Where the cost of failure is high, the propensity to study is maintained (see Figure 4.2). If the cost of failure is low, the propensity to study will fall and the degree of time tension, which will be tolerated in order to integrate study into the learner's personal commitment structure, will also reduce. The negative consequences of integration are fed back into the evaluation reducing further the value of study as a means of satisfying the need for learning and hence also reducing the learner's propensity to study. Under these circumstances the juggler will be proactive and effect a withdrawal strategy. The struggler however, will fade away by default. A reducing propensity to study means that less effort is put into juggling study 'in' and for every organisational period (e.g. week) that this happens more work is left undone with no intention to catch-up. There is thus reducing compliance where work is passively squeezed out of the learner's schedule and the learner just gently fades away from the course. Fade-aways are not therefore decisive, they merely keep failing to integrate until an assessment point or an end point eventually prompts a temporary withdrawal from a course where the learner requests a study break or an extension. Eventually, however, the temporary withdrawal turns into permanent withdrawal as the fade-away slips into becoming a leaver.

Where the value of study falls, a high cost of failure will maintain the struggler's propensity to study and the cost of integration will be severe where the personal commitment structure is full and personal competence low and may also be problematic where the personal commitment structure is less full. Under these circumstances the struggler struggles on.

### **Leavers**

Leavers decide to stop. This is a strategic decision and is usually the consequence of an unplanned and step change in the learner's personal commitment structure which causes a re-ordering of priorities and commitments and the abrupt transformation of the juggler or struggler into a leaver. The loss of a job for example, or the debilitating illness of the learner or of a close family member can render the need for learning irrelevant. Planned step changes in the personal commitment structure can also be a time of great risk, for instance the birth of a baby or taking a new job. Where step changes are planned however, there is also opportunity for re-structuring and may even turn the struggler into a juggler.

### **Summary**

In this chapter I have looked at the highly personal nature of the decision to persist or depart and identified the major factors that contribute to that decision. These are the learner's need for learning, the degree to which the learning opportunity satisfies the learner's need for learning – which together determine the value of study - the learner's personal commitment structure, the learner's personal competencies and where the value of study is low, the cost of failure to the learner. Together these determine the learner's propensity to study. I have also identified a typology of learners comprising jugglers, strugglers, fade-aways and leavers and explained how the different types experience the process of temporal integration of connected study into a structured life.

The literature on online distance learning makes clear that there are problems with the design and implementation of distance learning courses. (e.g. Hara & Kling, 2000; V. McGivney, 2004; Pierrakeas, Xenos, Panagiotakopoulos, & Vergidis, 2004). It is not clear however what the problem is, or what the solutions might be. This study theorises that from the perspective of the connected learner, the



problem is to do with time and how a learner might make best use of time given the competing demands for attention from various strands of a learner's life. This theory suggests that whatever a learner is asked to do must be relevant and useful and worth the considerable upheaval that is caused to the learner – and to others in the learner's sphere – when the learner engages with study. It theorises about what conspires to make life worse or better for learners as they engage. Many of the issues were known about but the large number and seemingly unrelated nature of the issues meant that the complexity could not be well understood. The power of this theory is in its encapsulation of the main concern of learners, its theorising about the interrelationships between the issues and how these interrelationships determine a learner's propensity to engage. It is this power that confirms the choice of the Grounded Theory method as an appropriate one.

Review of the literature situated this research in the field of student attrition or retention and is presented in the following chapter. Models of departure and persistence are considered in relation to this theory, as is the professional discourse on attrition and retention. Finally miscellaneous research studies attempting to understand and explain the relationships between variables are discussed and slotted into the framework provided by this theory. But first it will be helpful to explain the role of literature in a Grounded Theory study.

## Chapter Five: Literature Review

In Chapter One it was explained that this method did not require a literature review of the substantive area in the first instance and the undesirability of a literature review in the second in terms of preconceiving the researcher. In the third instance conducting a literature review prior to developing the theory is likely to be a waste of valuable time since the often-unexpected area that becomes the focal theory for a Grounded Theory means that unnecessary effort is expended on non-focal literature. The unexpected nature of the focal theory of student persistence and departure for this study, lends credence to this view. There is however a significant and positive role for the literature to play. The Grounded Theory research method requires that the literature review is undertaken after the analysis of data, when the theory has form. Literature reviewed is then used to develop the burgeoning theory, to nest that theory in the current discussion, to develop the discussion and optionally to comment on the literature in relation to the method. This chapter will be organised accordingly commencing with an overview.

### Nesting the theory

#### Overview

The literature concerning retention, attrition, persistence, and departure (depending on your perspective) (Woodley, 2004), for online distance learners is developing but not mature (Gibbs, 2003). Tinto's 1993 'Longitudinal model of institutional departure' developed from his 1975 'Conceptual Schema for Dropout from College' is the basis for much of the discussion. Two critical elements of Tinto's model are the social and academic systems of an educational institution. The model suggests that the degree to which a student becomes integrated into these systems will impact upon the student's decision to depart. In 1995 Kember attempted to modify the 1975 model for distance learning with criticised success (Woodley, de-Lange, & Tanewski, 2001). Kember's attempt is interesting from a Grounded Theory perspective since Kember claimed to use some of the tenets of Grounded Theory in his analysis though his themed output falls short of a coherent Grounded Theory. Whilst Kember's study identifies the same problem as this study – in a descriptive rather than conceptual way - his work is also criticised as

misunderstanding Tinto's model and thus his modifications are argued to be without substance (Woodley *et al*, 2001). This study supports that view, arguing that both Kember's study and this study are primarily concerned with 'temporal integration' rather than Tinto's 'social integration' as suggested by Kember. The confusion is to do with the outward or inward<sup>21</sup> focus of social integration which is engendered by the three ways in which the word 'integration' is used. Tinto uses the concept 'social integration' in the sense of *membership of* the social systems of an educational institution; and uses 'academic integration' in the sense of *incorporation into* the academic systems of an educational institution. This study acknowledges Tinto's concepts of social and academic integration and adds the inward looking concept of 'temporal integration' in the sense of an individual *combining or fitting in* study into his/her own *personal commitment structure*. In his 1999 paper 'Integrating Part-time Study with Family, Work and Social Obligations' Kember identifies the problems distance and open learners have in combining study into their lives but does not appreciate the distinction between social integration as membership and temporal integration as combining. Rather he lumps the two together and turns them both inward, viewing social integration as membership of family, work and social communities, where successful or unsuccessful integration means that these groups of people support or undermine a learner's efforts to fit study into their lives. Further confusion stems from the development of the idea of social integration as collective affiliation. Whereas Tinto's definition of social integration into the social systems of the college initially focused on supplanting the displaced social systems of the campus based high school graduate, it later developed into a focus on social integration in service to pedagogic aims of collaborative learning (Tinto, 1997). For the distance learner there is no need to supplant the existing social systems – indeed according to this study, these are the drivers for the learning effort itself and hence Tinto's earlier concept of social integration appears less relevant and Kember seeks to adapt it. Since collaborative learning is not an option for those under the distance based correspondence model, the relevance of the later focus is also obscured. It is only with the advent of online learning connecting learners, enabling collaborative

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<sup>21</sup> Outward in the sense of the individual being part of a larger community, inward in the sense of combining fractions of those larger communities into the individual's world

learning that Tinto's definition of *social* integration as collective affiliation once again becomes apparent and is so hard to achieve and so deeply missed in the online environment. Current experts (e.g. Gibbs, 2003; Woodley, 2004) however, have tended to dismiss both models leaving the literature without an overarching model by which to organise current thinking. As discussed in the section, 'Organising the Literature' later in this chapter, this leaves the literature unclear on how to proceed. In June 2004 the journal 'Open Learning' published six papers (see page 121) in revised form, which, in original form had comprised the basis for discussion at the symposium "Student retention in Open and Distance Learning" held in May 2003. The symposium rejected Kember's model on the basis that it was methodologically unsound. And rejected Tinto's model on the basis that

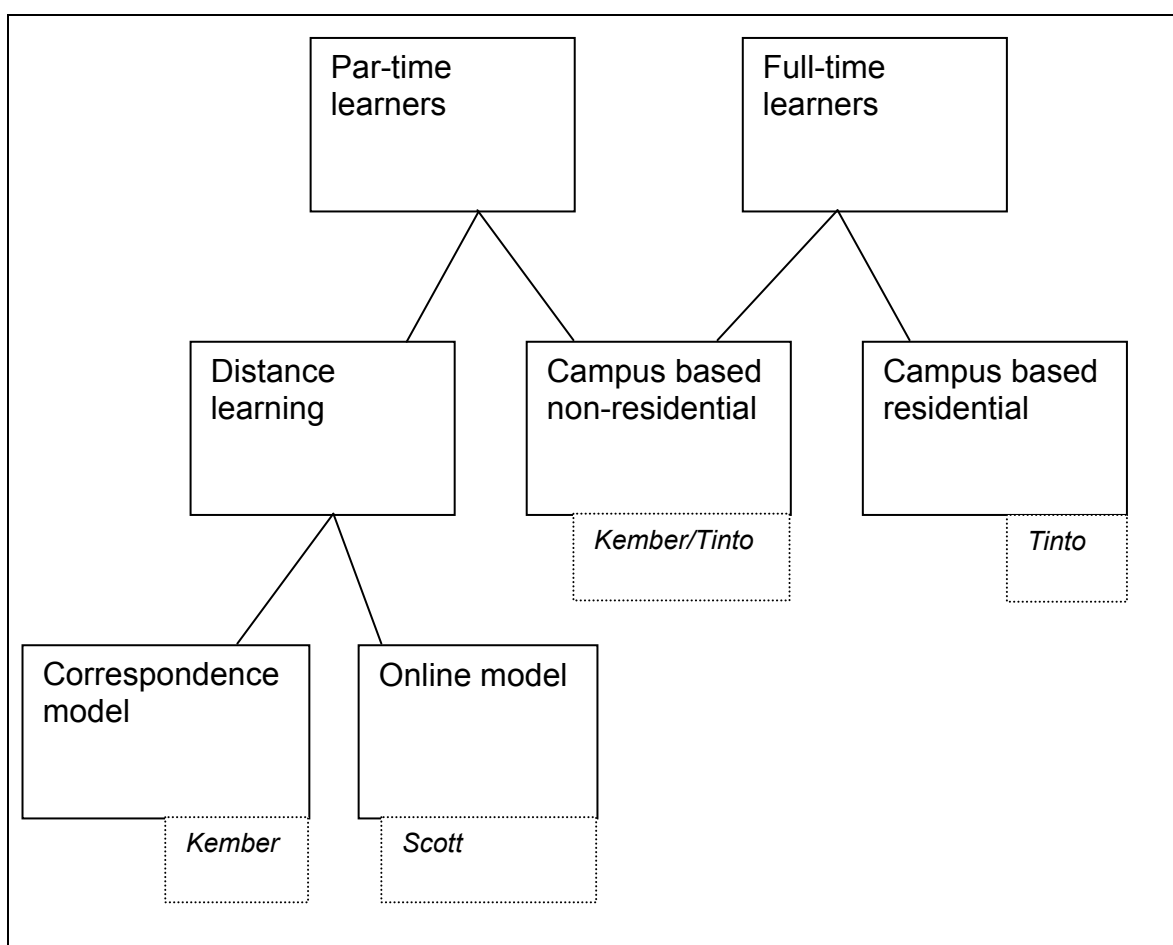
"Tinto's model, from which most other models are derived, is based on Durkheim's study of suicide, and seems particularly ill-suited to a context where social interaction and social involvement play such a small part. It was agreed fairly early on in the Symposium to abandon such models as the basis of insights into retention in ODL." (Gibbs, 2003).

This study identifies additional grounds on which to dismiss Kember's model but does not agree that Tinto's scholarship and model is without worth to the domain of connected learning. It is argued later in this chapter that Tinto's concept of academic integration remains relevant to the connected learning world; further that a degree of social integration into the systems of the connected learning opportunity is a necessary condition to whatever extent the learners consider collaborative learning relevant and useful in helping them satisfy their need for learning; and lastly the temporal nature of Tinto's 'longitudinal model of institutional departure' is endorsed by this study. It is therefore the view of this study that the symposium was well advised to dismiss Kember's study but hasty in dismissing Tinto's contribution to the wider persistence/departure debate as having no relevance for the online distance learning world.

In the following sections, I will give a brief overview of Tinto's model, discuss the main variances with my theory and discuss Kember's model in relation to Tinto's

model. I will then review papers reviewing or using Kember's model and bring the discussion up to date by reviewing work carried out at the UK Open University. It will be helpful to keep in mind the different manner and modes of attendance: campus based (residential - non residential), distance learning (correspondence or online) and part-time or full-time. Figure 5.1 indicates which combination of the above are focused upon by which writer.

Figure 5.1 Manner and Mode of Attendance by researcher



### **Tinto's model of institutional departure.**

Nowadays it is taken as a truism that family background influences an individual's aspirations and attitudes towards higher education and that this and an individual's prior schooling impacts upon the skills and abilities developed. Indeed in the U.K. the recognition of these issues in the Dearing Report (1997) has underpinned

Government policy regarding 'widening participation' in Higher Education, most notably with the establishment of the Aim Higher campaign (Aim\_Higher, 2007). Tinto's model (Figure 5.2) (1993, p. 114) suggests that these 'pre-entry attributes' combine to influence an individual's intentions regarding specific educational goals and his/her commitment towards achieving that educational goal. External commitments 'condition' (Tinto, 1993, p. 129) an individual's intentions and commitments. However, what really matters is the academic and social integration achieved by an individual through membership of the academic and social systems. Negative experiences in these systems resulting in a lack of integration will directly influence a student's decision to depart from the institution by weakening the individual's intentions and commitments.

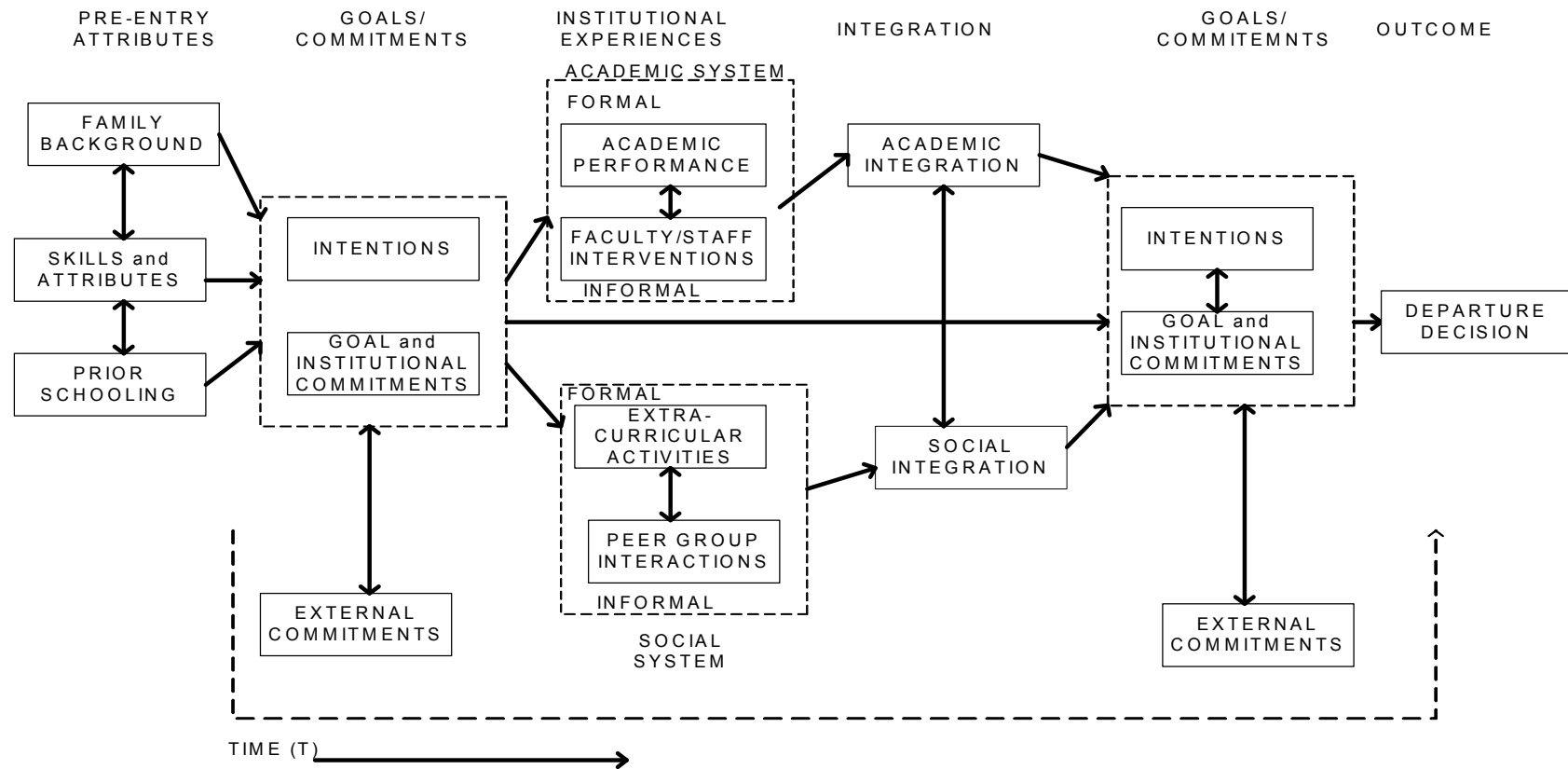
Integration into both the academic and social communities of the college is viewed as having three stages of separation, transition and incorporation. Separation..

'requires individuals to disassociate themselves, in varying degrees, from membership in the communities of the past, most typically those residence' (Tinto, 1993, p. 95)

Transition is about acquiring

'the norms and patterns of behaviour appropriate to incorporation into the new communities of the college.... where the scope of the transition stage' depends upon the degree of difference between the old and new communities (Tinto, 1993, p. 97) and 'Incorporation into the life of the college" is said to follow on from transition. (Tinto, 1993, p. 98). Whilst conditions for encouraging incorporation can be brought about by establishing formal and informal opportunities for contact (Tinto, 1993, p. 99) e.g. freshers' week, staff-student committees, sports clubs etc., it is Tinto's argument that it is within an institution's power to be able to reduce departure rates through involving students academically in the classroom and, more latterly, by encouraging social inclusion through pedagogical design (Tinto, 1997).

Figure 5.2 Tinto's Longitudinal model of institutional departure



Tinto's model was principally concerned with maturing high school leavers entering higher education in the United States of America, joining 2 or 4 year on-campus educational programmes, in residential or non-residential institutions. Adult learners were not ignored and in the 1993 model their external commitments acknowledged. The strength of those commitments however were viewed as 'conditioning' but not 'determining' the campus experience.

"The point here is quite simple. Though external events may be very important for some students, especially those that have to negotiate constantly the competing demands of family, work and college, for most students the impact of external events upon institutional departure is secondary to those within the college. While external forces may influence one's decisions to go to college and greatly constrain the choices as to which college to attend, once entry has been gained, their impact for most students tends to be dependent upon the character of one's integrative experiences within that college. In other words, the model posits that view that experiences on-campus are, for most students, paramount to the process of persistence. External experiences though critical for a number of students, condition but do not determine the character of experience on-campus." (Tinto, 1993, p. 129)

### **Tinto's 1993 model in relation to this study**

This study accepts Tinto's 1993 model as being a seminal work. However, there are key differences between the learners of this study and the learners informing Tinto's model and the structural conditions of each. These relate to the maturity of the learners as indicating the degree of structure present in their lives and their 'need for learning; the mode of attendance, part-time or full-time and the manner of attendance, on-campus or online. Tinto's model mainly focuses on the young, full-time, on-campus learner, and is slightly adapted to include the mature full-time/part-time on-campus learner. It is argued here that the mature, part-time, distance learner requires acknowledgement and accommodation in a different way to the on-campus learners.

Maturity matters as it relates to intentions and commitments. In this study, adult learners seek education for 'professional or work based reasons'; they are



undertaking professional development or retraining or validating their learning. For the mature learner, study is one strand of many and is undertaken in service to current commitments whereas:

“For many, if not most, young adults, the college years are an important growing period in which new social and intellectual experiences are sought as a means of coming to grips with the issues of adult careers..... the college experience is as much, if not more, one of discovery as of confirmation.” (Tinto, 1993)

Another key difference between high school graduates and adult learners is the shape of the personal commitment structure and that of the adult is more likely to comprise commitments to family (spouse, children, older dependents), work, self, social communities and study. Conversely, the personal commitment structure of the younger high school graduate is likely to be less full since it is less likely to include commitments to full-time work or to dependents - indeed he/she is more likely to be a dependent (Tinto, 1993, p. 41).

#### Text Box 5.1: Method Notes

Method Text Box.

This is a good example of where face sheet data can confuse. The issue is less one of whether a learner is younger or older and much more to do with the shape and tension of the personal commitment structure. Whilst age is often a useful indicator as to the likely shape of an individual's personal commitment structure, that is all it is. UK Government statistics categorise young learners as being below 25 and mature learners as over 25. Since those under 25 can also have partners, dependents and be in full-time work, if we relied on age to distinguish between the issues faced by learners, we would obscure the most relevant issue.

Further key differences relate to the manner and mode of attendance. On-campus attendance requires the student to carve out a temporal space in which to attend. Full-time, on-campus students obviously carve out a significantly bigger space

than part-time on-campus students, whilst the unprepared online distance learner may not have created a temporal space at all<sup>22</sup>. The combination of the manner and mode of attendance will obviously shape the personal commitment structure and thus the temporal integration strategies required.

What this means is that whilst Tinto's model is relevant to on-campus learning, the fit is not good enough for adult online distance learners, who are too far removed from the high school graduates living on campus and for whom this study identifies temporal integration as the main concern. This is not to dismiss academic and social integration as being irrelevant issues for distance learners. It is argued however that the major differences between the structural conditions of the on-campus learner and those studying at distance means that for distance learners the relative emphasis on social, academic and temporal integration is entirely different to those studying on-campus.

### **The relative emphasis on social, academic and temporal integration**

The relative significance of social integration can thus be argued to change according to the mode of attendance chosen. To the degree that there is physical relocation and to the degree that existing social affiliations are dislocated; the social systems of the college can (and are increasingly designed to) fill the gaps - and to *that* degree, social integration into college systems is important. Since the degree of physical relocation and hence social dislocation is highest for full-time, residential learners and lowest for part-time distance correspondence learners, it can be argued that social integration into college systems is less relevant to the latter. Arguably, what is important to these distance learners is that existing social systems (as expressed in their personal commitment structures and in the priorities of an individual) are maintained and that they are able to fulfil their social affiliation needs in their existing communities.

The learners in this study prioritise and integrate study in service to existing commitments. Their effort is directed towards establishing temporal equilibrium

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<sup>22</sup> There were no instances in this study of full-time distance learners.

following a period of disequilibrium as study is integrated into the individual's personal commitment structure. If temporal integration persistently causes disequilibrium and if priority is given to study such that other elements of the personal commitment structure are squeezed out, then social dislocation may result. One learner, Gillie, for example, found that studying in a foreign language meant that she had to spend a great deal of time on her studies and she consistently gave study a high priority such that:

“my friends said me: we won't invite you to a party or go to the beach, go out, because you always say “I'm studying”.

Gregory wrote of studying in 'spare' time:

“while my wife and kids are 'sent' on a holiday, just for my concentration and spending undisrupted time in finishing this last tasks of this ... course”.

Both of the above two learners were 'strugglers' and in neither case was the social dislocation sufficient to lead them to withdraw from the course, though both experienced dreadful time tension and the latter did not complete the final assessment. The point here is that social integration according to Tinto, feeds into institutional commitment (1975, p. 109) and is thus crucial since “Other things being equal, the higher the degree of integration of the individual into the college systems, the greater will be his commitment to the specific institution and to the goal of college completion” (1975, p. 96). Social integration affects the departure decision. This way of thinking about social integration as collective affiliation and as affecting the departure decision is relevant in a similar way in this study. Social integration for the distance learner is turned inward. It is less about membership of the social systems of the institution and more about membership of the social systems which are embedded into his/her personal commitment structure. When integrating study a learner will prioritise between the needs of the various strands of his/her personal commitment structure and any consequent social dislocation will feed into the evaluation stage (is it worth it?) of the temporal integration process and thus into the propensity to study. The relationship is more obvious in

the negative state, where the consequences of temporal integration are experienced as 'time tension'.

Academic integration is discussed on page 112 where I will argue that social integration into the college systems becomes more relevant to the online distance learner to the degree that the pedagogical design of the learning opportunity requires collaboration, when social integration will be in service to academic goals. However, it is worth reiterating that in this study, to the extent that academic and social integration issues are raised by the online distance learners, they are reduced to evaluations of worth: Is that which is being experienced relevant or useful? Is it worth the pain that I am being asked to endure as I integrate/combine study into my structured life?

In this section I have explained why Tinto's model is insufficient as a model for student departure for online distance learners based on the different structural conditions of on-campus and distance learners. I have addressed the different and changing relevance of the notion of 'social integration into college communities' for distance learners and I have emphasised that for the distance learner, the main concern is temporal integration. I have nested this Grounded Theory into the literature by showing how social integration into existing communities (i.e. membership of) as expressed in a learner's personal commitment structure affects the priorities of the distance learner and thus his/her propensity to study and how social dislocation can be seen as a consequence of temporal integration. Thus collective affiliations impact upon the persistence/departure decision for both campus based and distance learners. Much of that which has been considered in this section is relevant to the discussion of Kember's model of student progress which follows.

Figure 5.3. A conceptual Schema for Dropout from College

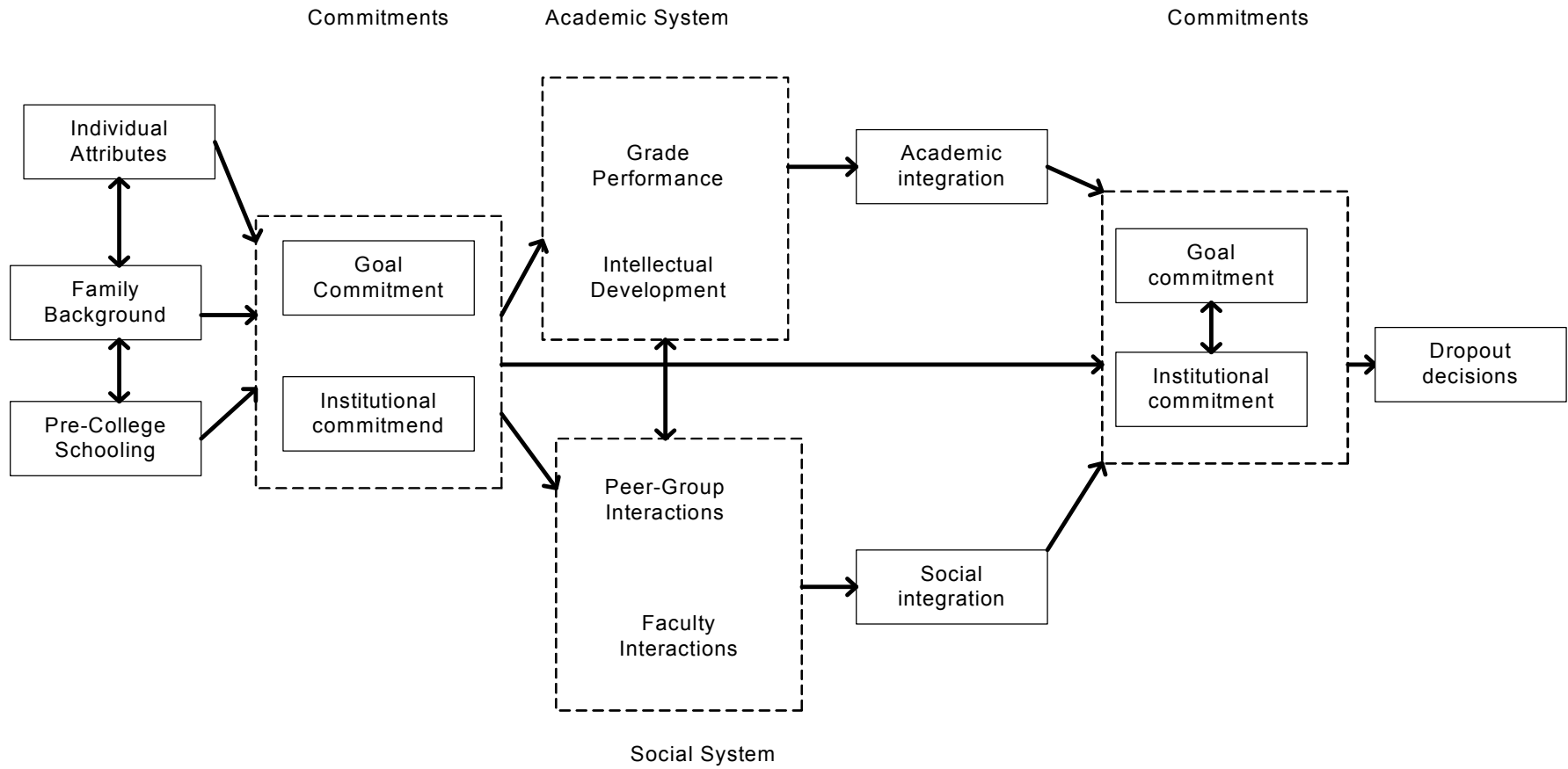
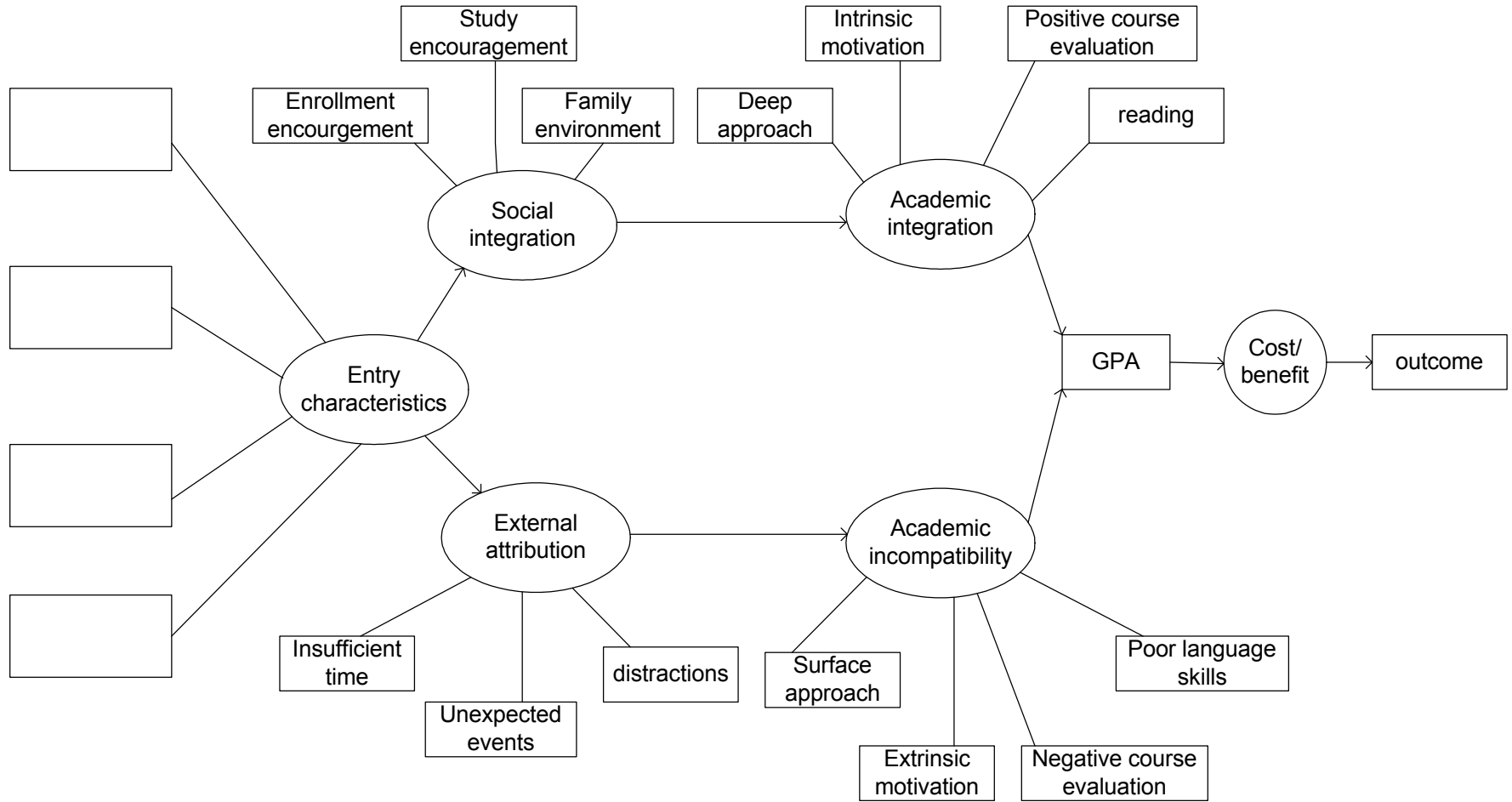


Figure 5.4 Kember's "Full model of student progress"



### **Kember's Model of Student Progress**

Notwithstanding that the second edition of Tinto's revised model was published in 1993 (Tinto, 1993), Kember (1995) developed a 'Model of Student Progress' from Tinto's 1975 'Conceptual Schema for Dropout from College' (1975), see Figures 5.3 and 5.4. The main difference between the 1975 and 1993 versions of Tinto's model for the purposes of this discussion is the recognition of the 'external commitments' of students and a finer definition of the academic system and social system.<sup>23</sup> Kember describes his model of student progress as a "two-track model" which

"suggests that student's entry characteristics direct them towards one of two tracks. Those with favourable situations tend to proceed on the positive track and are able to integrate socially and academically. Others take the lower, negative track where they have greater difficulties achieving social and academic integration. The model now also includes a cost/benefit decision<sup>24</sup>, during which students consider the costs and benefits of continuing academic study. Those who decide to continue will then enter the recycling loop for another passage through the model. In subsequent passages through the model initial characteristics will have altered, partly as a result of developmental charges (sic) the student experienced during the course. It is therefore possible to switch tracks during the recycling process." (Kember, 1995, p. 64)

Kember's model falls far short of an explanatory model and the figure is at best a bubble map of relevant concepts with little discussion of the relationships between them. The concepts are not challenged however and most of them have also been identified by this study, notable exceptions being enrolment encouragement,

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<sup>23</sup> Faculty interactions were removed from the social system and included in the academic system. Formal and informal interactions amongst peers were recognised and form the social system. Formal and informal elements of the academic system were recognised and academic performance and faculty/staff interactions form the academic system

<sup>24</sup> Common to both Kember's 1993 model and Tinto's 1975 model is a cost/benefit decision which is shown as explicit in Kember's diagram as 'Cost/benefit' and is implicit in Tinto's 'Dropout Decisions'.

study encouragement and family environment. In accordance with Grounded Theory methodology these will be discussed for emergent fit in the section of that name later in this chapter. What is challenged is the failure to organise the concepts in any meaningful way into a theory (see Text Box 5.2) and there is little to be gained by discussing this model in depth since later work by Kember is more useful. The purpose of considering it now is to show how the theoretical underpinning of this model – based on Tinto’s model – is flawed.

#### Text Box 5.2 Method Notes

Method Text Box.

Kember’s model falls far short of an explanatory model and the figure is at best a bubble map of relevant concepts. Two methodological points are relevant.

- Themed output produces detailed description with no relief
- Diagrams as tools of explanation, can be inadequate

This descriptive study provides much detail with little or no understanding of the relative importance of different concepts and how these concepts relate to each other. For example ‘Language skills’ and ‘insufficient time’ are treated as discreet items and are given equal status. There is no explanation of the relationship that low competence in the language of the course causes students to ‘take more time’ to achieve study. Similarly ‘there is no explanation that ‘distractions’ ‘waste time’ causing there to be ‘insufficient time’. Nor that ‘unexpected events’ are usually calamitous causing immediate re-evaluation of priorities, whereas the insolvable problem of having ‘insufficient time’ is more usually a gradual process of realisation.

Secondly figure 5.3 is a good illustration of Glaser’s point that in offering a diagram “the analyst puts it on the reader to write the theory for him by trying to figure out how to verbalize the links, which is hard to do without having done the research....” (Glaser, 2005a p53). In this discussion Glaser is



arguing that a Grounded Theory study without a theoretical code lacks the understanding necessary to properly explain the theory, and which the author attempts to remedy by providing a diagram. This lack of understanding is illustrated above and the weakness of the diagram evidenced by the comment “The [recycling] loop returns to the entry characteristics component, the starting point of the model..... which is more convenient than altering the point at which the loop returns” (Kember, 1995 p125).

In this respect I suggest that an algorithm is a more effective tool for example, the balancing algorithm, I offered in Chapter Four, expresses the relationships and emphasises the significant concepts.

Kember does not distinguish a concept from its dimensions, treating the two as one. For example, a dimension of the concept *‘temporal integration’* is success. A dimension is a continuum having degrees along the continuum, hence there are degrees of success ranging from complete success to being unsuccessful. In treating a concept and a dimension as one there is no room for difference by degree. Kember treats social integration as a concept plus a dimension, therefore there is either successful social integration *or* external attribution if unsuccessful, one or the other. Since Kember’s model is based on a loop, there is no provision for degree of change as in a model based on a spiral. Students either have a successful loop or an unsuccessful one. The same student can be extrinsically motivated on one unsuccessful loop and redefine themselves as intrinsically motivated on the next. This is implausible.

### **Examining Kember’s Model**

Underpinning Tinto’s notion of social integration is an understanding of Van Gennep’s work concerning ‘Rites of Passage’ which identifies “three distinct stages or phases of association of the individual with other members of the institution” (Tinto, 1993, p. 95) which were defined by Van Gennep, as the stages

of separation, transition and incorporation and referred to earlier. In arguing for an adaption of Tinto's model for open and distance learners, Kember writes that the

“part-time status of most adult students implies that a full separation from past association and obligations cannot take place” (Kember, 1995 p48) and that for “part-time students the transition may be envisaged as that from non-student to part-time student status. The transition implies building a new role on top of existing commitments. The success or otherwise of this integrative process can be conceptualised in terms of Durkheim's theory of suicide (1961) which is the other substantive element in Tinto's work” (Kember, 1995 p49).

This is accepted. Of integration, Tinto writes that

“Durkheim referred to two forms of integration – social and intellectual – through which membership may be brought about. The former refers to that form of integration which results from personal affiliations and from the day to day interactions among different members of society. The latter comes from the sharing of values which are held in common by other members of society.” (Tinto, 1993 p101).

Kember argues that social integration is harder to achieve for part-time students since

“there are fewer opportunities to meet with faculty and other students..... [and the] student still belongs to the social units which existed prior to enrolment”.

At this point Kember also uses social integration in the sense of 'membership of'. He adds that

“For students enrolled in distance education courses, establishing collective affiliation has an extra dimension of difficulty. Physical separation from faculty and fellow students reduces opportunities to develop relationships.” (Kember, 1995 p 49).

Tinto writes

“Colleges are made up of both academic and social systems each with its own characteristic formal and informal structure and set of student staff and faculty communities. The former, the academic, concerns itself almost entirely with the formal education of students. Its activities centre about the classrooms and laboratories of the institution and involve various faculty and staff whose primary responsibility is the education of students”. (Tinto, 1993 p106.)

This definition of ‘academic systems’ is equally relevant to the online distance learning of today which boasts virtual classrooms and laboratories though perhaps is less appropriate for the correspondence distance model of Kember who writes:

“the academic and particularly the social environments of part-time open learning students are very different from those of full-time, on-campus students. These aspects of Tinto’s model, therefore need to be adapted”. (Kember, 1995, p. 50)

I agree that the concept of integration into the social systems of the college should be reworked to be relevant to distance learners. I agree that the definition of the academic system should be revised to be relevant to correspondence distance learners (but not necessarily online distance learners). However Kember’s reworking of integration into the social systems of the college is not agreed.

Astoundingly Kember writes:

“ this book thus redefines academic integration to encompass all facets of the offering of the course to the student by the institution whether of an academic or administrative nature. *Social integration can then refer to the*

*degree to which the student is able to integrate the demands of part-time study with the continuing commitments of work, family and social life.*

These redefined social and academic integration constructs can then be seen as complex variables which impinge upon student progress once a course has started. (Kember, 1995 p50, my emphasis)

Whereas Tinto had talked of the process of incorporation into the structure of two inter-related systems, Kember collapses process and structure into variables of doubtful provenance, dismantling a scholarly development of theory in a stroke. That which Kember calls social integration, is identified by this study as temporal integration. Thus in completely dismissing social integration as membership he precludes the notion of social integration as an essential element of collaborative pedagogical design and dismisses the impact of social integration on an individual's priorities, need for learning and propensity to study. Where Tinto uses the word integration in the sense of 'membership of'. Kember uses the word in the sense of organisation, of 'fitting in'. The focus is reversed - from group to individual - and the meaning changed. Only the words remain the same.

This examination of Kember's work suggests that the initial analysis of qualitative data was methodologically questionable and not according to the tenets of Grounded Theory. Kember's study identified several relevant concepts but lacked a robust understanding of the relationships between the concepts which resulted in the development of a muddled model. Kember sought to validate his model using quantitative methods. Woodley *et al* (2001) attempted to replicate Kember's quantitative validation study and found that Kember's model was inconsistent with their data commenting: "These results suggest that Kember's path model did not fit the data derived from the present sample. While Kember's recommendations for reducing student dropout have intuitive appeal, their empirical foundations are questionable."(Woodley *et al*, 2001 p 113). Kember's work was criticised on three major points.

First the data collection instrument for Kember's validation study, the Distance Education Student Progress (DESP) Inventory, is considered to be

methodologically unsound. Woodley *et al* write “Analysis of results from the present study indicated certain weaknesses in Kember’s DESP inventory. Most of the 15<sup>25</sup> sub-scales showed little internal consistency, suggesting that the individual items were not measuring the same concept”(2001 p127). Appendix D tables the DESP inventory, i.e. the four main constructs, their sub-scales<sup>26</sup> and the statements used to measure the sub-scales and (cumulatively) the constructs, together with the equivalent Grounded Theory concept from this study where there is one. Where Kember’s model uses the term ‘social integration’ meaning ‘temporal integration’, the sub-scales, in terms of this theory, measure Mental Facilitation, Temporal Facilitation and personal commitment structure. Whilst this Grounded Theory does not purport to offer ‘the one whole truth’ regarding temporal integration, it is at least a coherent study organised by theoretical codes which give it a form of internal consistency. Since one of the DESP inventory’s sub-scale includes several different grounded concepts of this study, Appendix D supports the view that the DESP inventory lacks internal consistency from a qualitative viewpoint.

The second criticism relates to the reworking of Tinto’s concept of ‘social integration’. Woodley *et al* write:

“However, it is clear from Figs 1 and 2 that Kember made considerable changes to the basic structure of Tinto’s model itself. The key change is that whereas Tinto saw social and academic integration as being separate and parallel (i.e. independent), Kember saw them as linearly associated. In the positive dimension social integration leads to academic integration whereas in its negative form external attribution produces academic incompatibility.” (2001)

This study is not principally concerned with how students engage in study or with matters of incorporation into academic systems (academic integration) any further

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<sup>25</sup> Woodley *et al* used 15 of the 16 subscales in their empirical test of Kember’s model, omitting English ability since their students were predominately native English speakers.

<sup>26</sup> Social integration (enrolment encouragement, study encouragement and family environment), academic integration (deep approach, intrinsic motivation, positive course evaluation, reading), external attribution (insufficient time, unexpected events, distractions) and academic incompatibility (surface approach, extrinsic motivation, negative course evaluation, English ability).

than to identify that students ask “What’s in it for me – is what I am being asked to do relevant or useful?” Similarly, this study is not principally concerned with membership of the social systems of the learning opportunity (social integration); other than to note that learners evaluate the positive or negative benefits of social interactions. It is not the purpose here to combine this theory with Tinto’s but to show where they touch each other. It does however, serve to illuminate Kember’s misunderstanding, to suggest that it is necessary to find, make or take the time in order to engage in studying i.e. to undertake activities that will bring about incorporation into or engagement with the academic systems of the learning opportunity. Thus it is necessary to embark upon the temporal integration process prior to achieving academic integration. Since Kember mistakes social integration as temporal integration, we can see how it is that he comes to view social integration and academic integration as linearly associated. From a qualitative point of view Woodley *et al* write:

“No rationale appears to be offered for this change but there seems to be an underlying misconception that ‘path analysis’ is best interpreted as indicating the ‘path’ a given individual takes through the model, rather than as a model of the total forces acting on a given individual.” (2001 p 128)

Thus the third criticism relates to methodological expertise. It can therefore be argued that both the qualitative and quantitative elements of Kember’s study, whilst identifying relevant concepts and presented with interesting discussion cannot be said to be underpinned by rigorous research<sup>27</sup>.

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<sup>27</sup> “In the second half of his book Kember outlines a long and detailed catalogue of proposed policy and practice changes that would reduce student withdrawal. They all seem eminently sensible and ‘fit’ with both his qualitative data and one’s own intuitive feelings. However, in no sense could we say that these implications for policy and practice arise directly from Kember’s model.” (Woodley, de-Lange, & Tanewski, 2001)

### Text Box 5.3: Method Notes

#### Method Text Box.

Kember has interviewed people and looked at the relationships between people. I have looked at the relationship between the learner and his structure. This is probably because I have conceptualised the relationship and the people have become part of the structure. And because of whom Kember was asking and who I was asking. The answers of the learners in my study were very much about themselves. Kember's study was more about the reciprocal nature of accommodating *personal commitment structures*. Is this because of a cultural difference – and the focus on the collective in Asian society.

European houses larger than Asian homes. Space/place was not an issue for my learners whereas it is for Kember's. Not an issue at all for Tinto's learners.

Also the focus may have been altered away from temporal issues by analysing issues which are elicited by the directed and focused nature of the interviewers questions as opposed to the open design of the Grounded Theory question which are used to encourage the interviewee to offer their own concerns – which may or may not coincide with that of the professionally concerned interviewer.

Am inclined to think that it is less a matter of space (though concerns are expressed in terms of space) and more a matter of being able to cope with distractions and finding protected time in which to study.

## **Examining the Literature for Emergent Fit With This Study**

### **Temporal Facilitation**

Kember's study is relevant to this study for two reasons. One is that both his study and this study identify the same main concern of distance learners. Second is his

claim to base his research on the tenets of Grounded Theory. “A realistic description of the methodological approach is grounded theory with influences from other work. I suspect most grounded theory is really like this” (Kember, 1999, p. 113). It is however, the lack of disciplined application of the Grounded Theory method which renders Kember’s theory vulnerable to criticism. In this paper Kember has recognised that those who adopt

“coping mechanisms are more likely to be allocated to an integration category whereas those who do not are less likely to complete course requirements and will attribute uncompleted work to external factors”.

The coping mechanisms he identifies are ‘support’, ‘sacrifice’ and ‘negotiation’. In his book of four years earlier, he talks of enrolment encouragement, study encouragement and warm family support. My coding of these is: facilitation – temporal facilitation and mental facilitation. In the former, members of the learner’s communities restructure their own personal commitment structures to enable them to ‘give time to’ the learner. In the latter mental facilitation by the members of the learner’s communities may relate to a ‘propensity to facilitate study’. However this is not saturated and not central to my core category of temporal integration. Temporal facilitation however, is of relevance.

Kember describes how each main community of the learner enables the use of the coping mechanisms: support, sacrifice and negotiation. He writes:

“The numerous quotations were readily placed within the three sectors of work, family and social lives and attributed to the three mechanisms of support, sacrifice and negotiation. There are obviously degrees of overlap for some cases, but all classification systems dealing with significant phenomena experience this to some degree.”

Overlap is avoided in Grounded Theory by constant comparison. Coding might provide interchangeable indicators but not overlap of explanation.



Table 5.1 Summary of Codes from Appendices E and F

Summary of codes from Appendix E	Summary of codes from Appendix F
<p>Take time from (self; hobbies and extend-the-day) (social) (family) (work – negotiated)</p> <p>Juggling</p> <p>Planning</p> <p>Positive value</p> <p>Structure points (family, work, social, study, self)</p> <p>Priorities</p> <p>Social dislocation</p> <p>Commitment – family</p> <p>Full personal commitment structure</p> <p>Study – squeezed in</p> <p>Take time from</p> <p>Engaged (with study)</p> <p>Tension</p> <p>Distractions</p> <p>Positive benefit (of social interactions) (study)</p> <p>Cost</p> <p>Evaluation</p> <p>Self</p> <p>Restructure personal commitment structure ,</p> <p>Propensity to study</p> <p>Prioritise</p> <p>Find time</p> <p>Evaluation</p> <p>Equilibrium</p>	<p>Prioritising</p> <p>Take time from</p> <p>Temporal space – protect</p> <p>Tension</p> <p>Distractions</p> <p>Find time</p> <p>Routinise</p> <p>Plan</p> <p>Social dislocation</p> <p>Structure points: assessment points, time design</p> <p>Given time</p> <p>Steal time</p> <p>Restructuring personal commitment structure</p> <p>Full personal commitment structure</p> <p>Positive experiences</p> <p>Negative experiences</p>

Appendix E above, details the quotes offered in the paper together with the codes that I assigned. In all 40 quotes rendered the codes listed in Table 5.1. 14 students on a part-time course attempted to test Kember's model, recognising 'self' as a separate strand in addition to the work, family and social strands. (Kember, Ying, Wan, & Yung, 2005). The 12 quotes used in this paper are shown in Appendix F together with my codes.

All except one are codes from this Grounded Theory study, thus it is argued that the experiences of the part-time learners of Kember's study are better explained by this study. These two papers have however, developed this study by enabling identification of a significant new code, 'temporal facilitation'; an additional consequence of temporal integration, 'social dislocation'. And by adding a new dimension of the degree of flexibility in the structural conditions of the student as expressed in acts of temporal facilitation by representatives of those structural conditions. For example allowing assignments to be handed in late or relieving learners of childcare duties.

### **Fade-aways and Leavers**

The categories of fade-aways and leavers emerged from the analysis of the interviews but recourse to the literature was needed in order to saturate these categories. Two of the most useful sources in this respect were Simpson (2003) and Pierrakeas *et al* (2004). One of the difficulties for institutions is in noticing when learners have withdrawn. Simpson quotes an internal report of the UKOU:

"The reports only dealt with the 'Active' withdrawees, who constitute about 17 per cent of the new students starting each year, who formally withdraw by contacting the institution. It did not pick up the 14 per cent of total OKOU students who 'passively withdrew – that is they became inactive without letting the institution know". These generally only became obvious at the end of the year when such students do not sit an exam".(Hobbs, Phillips and Simpson, 1993 cited in Simpson, 2003 p35)

Often the student is not aware of the intention either, rather passive withdrawal is made manifest by the (temporal) passing of an assessment point and as Shin and

Kim (1999) surmise that as time passes it becomes too difficult to return to a study programme, the student “therefore becoming a real drop-out”. Such is the fate of a fade-away.

Pierrakeas *et al* (2004) surveyed the dropouts of an undergraduate ‘open and distance’ learning course and of a postgraduate distance learning course. Of the 2,450 students of the study, 21% withdrew and of those 85% took part in the study. The authors found that the reasons for dropout for both undergraduates and postgraduates revealed ‘important’ similarities and differences in the reasons for dropout. Consistent with this study, the differences relate to the undergraduate’s lower levels of competence in learning skills and the knowledge domain studied where:

“students’ professional standing (e.g., exposure/personal interest in the field or actual work experience is highly relevant at the undergraduate level and mitigates against dropout. On the other hand, this factor does not seem to hold much importance when it comes to postgraduate studies.”

That is, in terms of this study, those undergraduates who possess neither online learning skills nor knowledge of the subject domain will need much more time for study than those undergraduates who possess knowledge of the subject domain but not learning skills. The postgraduates, as experienced learners, will benefit from knowledge of the subject domain but according to Pierrakeas *et al* (2004) those who do not have subject area knowledge, are not as disadvantaged amongst their peers as are undergraduates without subject area knowledge.

Post hoc it became evident, that of those who withdrew from their course and took part in the study, 34% withdrew before the first assessment point and (cumulatively) 75% withdrew before the second assessment point. Furthermore:

- 44% withdrew for professional reasons
- 20% withdrew for family or personal (and not entirely unexpected) reasons
- 8% withdrew for unexpected health reasons of self or close family member
- 28% withdrew for academic reasons

- 3% found the educational material very difficult or difficult.
- 13% withdrew because they had chosen the wrong course, the course being of “no professional interest or value”.
- 8% withdrew because they had insufficient knowledge of the subject area

The authors conclude:

“According to the respondents, the most significant reasons they cited for dropping-out stems from their underestimation of the actual time they have available for studying versus their other obligations, and/or unforeseen changes in their daily/work environment (e.g., promotion, travel, transfer, pregnancy, death) that affected their ability to continue with their studies”.

It is thus the unexpected event that turns a juggler or a struggler into a leaver. It is the slow realisation that study is being consistently squeezed out that turns a struggler into a fade-away.

### **Organising the Literature**

This section looks at the current literature concerning individual issues of student persistence and departure and institutional issues of student attrition and retention in the context of online distance learning for adults. It offers guidance as to the salient variables on which to base future quantitative studies and provides a framework by which to view existing qualitative studies.

### **Student Retention in Open and Distance Learning.**

As mentioned in the overview of this chapter, a symposium entitled: “Student retention in Open and Distance Learning” was held in May 2003. 6 papers formed the basis of discussions which authors were experts in the field of student retention and wrote from several perspectives.

- Barefoot (2004) considered student dropout in the context of campus based learners from institutions of higher education in the United States.
- McGiveny (2004) compared data of campus-based adult learners (aged over 25) with younger campus-based learners and with “students in open or distance learning programmes”.

- Yorke (2004) reviewed studies of campus-based withdrawing students, models of student departure and persistence and applied both of these to form implications for 'persistence in open and distance learning'
- Simpson (2004) considered the economic arguments concerning an Open and Distance Learning Institution's retention efforts.
- Ashby (2004) preferred to focus on maximising continuation rates and offered "Observations ... about overall retention rates and students' reasons for withdrawing, and a model for tackling courses with low retention..."
- Woodley (2004) "reviews the development of thinking about student dropout in general and also how this thinking has been adapted in the field of open and distance learning."

Of the rationale for this mix, Gibbs offers: "It was hoped that the more extensive and mature research into retention in conventional contents would provide useful insights into retention in ODL where there is more limited theory and less empirical evidence." (Gibbs, 2003). Together these papers reflected the forefront of thinking in the United Kingdom regarding student retention in 'open and distance' learning contexts. As mentioned in the overview, the symposium rejected both Tinto's and Kember's models. To an extent Woodley supported this abandonment stating: "a case is made for interventionary tactics rather than a grand theory of such a multi-faceted phenomenon." (Woodley, 2004). This study has argued above that Tinto's model has much to offer the field of distance learning and notes that even as Woodley moves away from Tinto's model, he still finds the concepts of academic and social integration useful in structuring the research effort when he concludes:

"Rather than pursuing the chimera of a general model, let us conduct large-scale controlled experiments. By so doing we can test out whether it is more cost-effective to increase social integration by, say, putting students in touch with each other, or to increase academic integration by, for example, improving feedback on assignments."(Woodley, 2004)

The problem with a lack of an organising structure in the context of distance learning is that the complexity of the relationships between a large number of variables means that it is very difficult to identify those relationships quantitatively. In writing about her quantitative study Dupin-Bryant (2004) notes: "Traditional attrition research suggests retention should be studied holistically. Yet, looking at attrition in this manner can be crippling". Willging and Johnson (2004) write of their work: "This research confirms that the decision to persist or dropout from an online program is a complex phenomenon that cannot be easily described with quantitative variables, at least not with the demographic variables selected for analysis in this study." Lim (2001) "examined computer self efficacy, academic self-concept, age, gender, academic status, years of computer use, frequency of computer use, computer training, Internet experience in a class, and participation in a workshop for a Web-based course. Computer self-efficacy was the only predictor variable that was statistically significant." Lim's conclusion that the results of her study "indicate understanding and preparation of adult learners may be crucial for success for both educational institutions and learners." is nice to know but uncovers only a very small part of the relationship between the learner and his/her environment and does not fulfil the purpose of the study which was to "develop a predictive model of satisfaction of adult learners in web-based distance education courses."

Qualitatively the complexity is problematic also. McGivney (2004) summarises 'the kind of factors that might increase adult retention rates in both kinds of learning programmes' (i.e. campus based and distance learning) as 'motivation', 'a supportive family or partner', 'financial support', 'good pre-entry information and advice', 'high quality course content and presentation', 'effective tutors', 'a supportive learner group' and 'prompt follow-up of those at risk of non-completion'. This is a list in need of a theory with which to organise it.

The tone of the symposium initially seemed to focus on the professional problem – on an institution's need to retain students. Alison Ashby (2004) widened this by suggesting that focusing on "student retention encourages a rather narrow definition whereas student progress encourages a broader and more relevant

definition of the concept of retention.” Yorke agrees noting a focus in the literature on retention “on a ‘supply-side’ concept for understandable supply-side reasons” concluding:

“It is probably a mistake to concentrate organisational attention specifically on ‘improving retention’, since to do so would be to focus on the symptom and not the deeper cause(s). If the student experience is ‘got right’ at an affordable cost (no mean challenge), then the chances of student persistence are likely to be enhanced.” (Yorke, 2004)

This theory - which has at its heart the student experience – deepens our understanding, explaining how a learner’s propensity to study determines the effort that is put into clearing a temporal space in which to study and that the learner evaluates the academic and social experiences in terms of ‘What’s in it for me?’ and ‘Is it worth it?’ Chapter Six explores the implications of the theory for institutions on a similar assumption to Yorke above, that improving the conditions for students will enable more students to persist.

### **Implications of this Study for Quantitative Research Studies**

This study also offers quantitative researchers a way of separating the strands between temporal and academic issues and measures by regarding persistence and withdrawal (i.e. dropout) as a temporal matter and the process of academic performance and the outcome of that process, academic achievement (success or failure) as academic matters. Shin and Kim(1999) claim that research in this area conflates academic achievement and persistence into one issue by focusing on the question “In a given distance education setting, what makes some learners fail to complete their studies while others are successful?” Woodley (2004) also tussles with this intertwining of issues when he asks:

“Do you count a person as having dropped out if they send in no work? If they do not fulfil some course requirement such as attending a residential course? If they write in to withdraw? If they do not sit the examination? If they fail the assessment?”

Shin and Kim (1999) accuse Kember of encouraging the confusion and whilst in discussion Kember may have done so, in Kember's defence he did include separate measures for academic achievement and persistence using grade point average (GPA) for the former, and a ratio of "the number of modules failed/number of modules attempted" for the latter<sup>28</sup> (Kember, 1995). Woodley (2004) fails to notice this distinction however when he writes: "These definitional problems are difficult but surmountable if one is considering something like a full-time three-year degree programme in Economics. A dropout rate could be defined as the percentage of a given entry cohort who had not gained a B.Sc. (Econ) at the end of three years." This certainly confuses academic achievement with temporal persistence. Woodley also implies that Sweet falls foul of the same confusion when Woodley writes:

"Sweet's dependent variable was 'persistence'. The persistent students were those who 'successfully completed their coursework assignments and examination' (Sweet, 1983 (sic), p208). Thus it would seem that a person who failed the examination would be a 'non-persister'." (2004)

However 'successfully completed' can be taken to mean 'successfully submitted their coursework assignments and examinations' (which does not conflate temporal persistence with academic performance) rather than 'completed and passed their coursework assignments and examinations' (which does). Sweet confirms (personal communication, October 17 2006) that Woodley's interpretation is not what was intended.

What Shin and Kim (1999) go on to do (and what this study does) is to clearly separate the two issues of dropout and success where their "study examines the factors affecting distance learners' achievements and drop out in Korea National

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28 Where 0 = persistence and 1 = withdrawal. The measure of persistence ignored those who officially withdrew but included those which this study types as 'fade aways' since "Most students who dropped-out ceased submitting assignments or did not attend the examination rather than formally withdrawing. They therefore received an official grade of fail" and would therefore receive a score greater than 0 indicating partial or complete withdrawal.



Open University, assuming the two are separate questions.” (1999). Of note for this study are the findings that

- “Among the six variables developed in the path models, study time was the most influential in explaining learner achievement measured by GPA.”
- “GPA did not show statistical significance in predicting learner’s persistence”

This first supports this study’s analysis that the prime concern of learners is to finding time to study and the second confirms that separating the threads of temporal and academic matters aids understanding in this context.

Shin and Kim also use Kember’s version of social integration as one of the six variables mentioned above. Termed by this study as mental facilitation and temporal facilitation, Kember’s version of social integration has a negative link with persistence and Shin and Kim wonder “How it is possible for learners who received more support from colleagues, employers and families to turn out to be less likely to continue their distance learning than are those with less support?” This finding supports the fact that mental facilitation and temporal facilitation did not emerge as concepts central to this study and that the temporal integration of connected study into a structured life is an individual matter relying on the skills and determination of the individual as he or she responds to the triggers received.

As this study distinguishes between temporal and academic matters, so does Tinto. In labelling his model ‘longitudinal’ Tinto recognises “the temporal character of persistence” (1993 p125) and makes the distinction between academic performance and academic achievement being much less concerned with the latter explaining that “though the occurrence of academic dismissal will not be ignored, it will not be central to our discussion.” (1993, p. 112). Instead Tinto is more concerned with academic performance, or in terms of this theory, with ‘engagement’ in study. Academic achievement is thus dependent upon temporal persistence and academic performance. An obvious but necessary distinction since it clarifies to some extent the issue of which dependent variable to use. Attending until the final day, sitting the last exam, submitting the final assessment i.e. reaching the end point of the course is temporal persistence bearing in mind

that recognised 'extenuating circumstances' may mean that the end point is moved for a particular learner. Anything else constitutes withdrawal, voluntary or involuntary, temporary or permanent. Assuming that a grade for a final assessment is given only where the final assessment is undertaken, a grade for that assignment will imply temporal persistence. And that is *any* grade. The score is irrelevant<sup>29</sup>. It is a binary matter. If there is a grade there was temporal persistence, if there is not, then there was not. Thus the existence of a grade can be taken as an indicator of temporal persistence.

Regarding grades as an indicator of academic integration; to take a learner's final course or unit grade and to view and to use it as an indicator of academic congruence or academic integration is to oversimplify. This is because measures of academic achievement, i.e. any one learner's grades, will not only be dependent upon the level of engagement achieved, but will also be in relation to the interaction between the learner's personal competencies and the learner's personal commitment structure and in particular the design of the course as it integrates into the personal commitment structure. It is not thus a straightforward relationship of academic integration causing academic achievement.

Regarding grades as a measure of academic achievement i.e. as an indicator of success or failure; final course or unit grades could be argued to reflect a standard, a level of absolute academic achievement but not of relative temporal and academic achievement. Their use as a measure of success or failure therefore requires definition as to by which or whose standard, academic achievement is judged.

### **Applying this Grounded Theory to the literature.**

In this section I will consider some of the recent literature and view it from the perspective of this Grounded Theory to show how this theory explains the incidents and observations offered. This will take the form of a series of comments in illustration rather than cogent discussion.

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<sup>29</sup> Here a no-show is assumed to be a null grade as opposed to a grade of zero which means that a student who did not hand in the final assessment would be given a null and a student who handed in an assessment but who gained zero points would be given a grade of zero.

Thus, considering once again McGivney's 'factors that contribute to persistence'<sup>30</sup> motivation as described by McGivney relates to this study through the concepts 'cost of failure' and 'need for learning'.

"Many lecturers and tutors find that mature students tend to be more motivated than younger students for a number of reasons: because they have made sacrifices in order to participate; because they want to prove to themselves (and others) that they are capable of learning and gaining a qualification; or because they need or are required to study for career or employment reasons"(V. McGivney, 2004)

Sacrifices unnecessarily made relate to the concept 'cost of failure' whilst the learner's desire to prove themselves for professional or work based reasons relate to the 'need for learning'. The discussion relating to "a supportive family or partner" relates to mental and temporal facilitation and whilst commenting that campus-based older learners are more likely to complete if they are receiving financial support McGivney goes on to say:

"There are indications that the same does not apply to students engaged in distance programmes and that their completion rates are worse than those of students who do not receive any financial support."

In this study, where financial support has to be repaid – for instance where employers pay tuition fees on condition of course completion – this is coded as 'cost of failure', which contributes to increasing the propensity to study only in the negative state, where an individual's 'need for learning' is lower. For example Kember (1995 p211) quotes the following student:

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<sup>30</sup> 'motivation', 'a supportive family or partner', 'financial support', 'good pre-entry information and advice', 'high quality course content and presentation', 'effective tutors', 'a supportive learner group' and 'prompt follow-up of those at risk of non-completion'

“I feel very discouraged from doing this course. I feel very sorry about the school fee of \$HK 20,000 so am not giving up this course yet. If the school fee was refundable I would give up the course right away”.

McGivney uses the following quote as an example of why ‘effective tutors’ are necessary:

“As it was, as an isolated learner unenthused by the printed material, and with other pressures on my time, I needed someone to remind me of why the course was worth doing-and what the benefits would be. My tutor did not succeed in doing this over the phone (and frankly, did not even try). (Correspondence with the author) (V. McGivney, 2004)

Whilst not disagreeing with this principle, this study offers the following explanation for the learner’s comments. Engaging with the course is not providing positive benefits to the learner whose personal commitment structure is strained. The implication is that the evaluation stage produces a very low or non-existent ‘propensity to study’ where the answer to the questions: ‘What’s in it for me?’ and ‘Is it worth it?’ are touching zero. This is less to do with the tutor and more to do with the learner’s ‘need for learning’ and evaluation of the extent to which the course satisfies his/her needs. It is not the tutor’s responsibility to persuade the student to continue though it is part of the institution’s obligation to the learner to give ‘good pre-entry information and advice’ such that the learner can reduce the likelihood of a mismatch of his/her expectations with the expectations of the institution and the design of the course.

McGivney’s assertion that “high quality course content and presentation” matters in that “If the content of the program is considered boring and uninspiring the incentive to persevere will be low” (2004) is agreed in so far as if course content is not considered relevant or useful and thus that engaging with the course materials will not provide positive benefits, the propensity to study will be lowered.

McGivney also observes that

“Problems related to time pressures are particularly acute for those adults who are studying while trying to hold down a job or fulfil domestic commitments. Sometimes complete withdrawal is not intended but happens because after a period of interruption, students fear that they may not be able to catch up with the work” (2004).

This study types these learners as fade-aways where study has been squeezed out, learners ‘fall behind’ and ‘catch-up strategies’ are needed. The suggestion of “Prompt follow up of those at risk of non-completion” is also agreed where this study suggests that tutors offer catch up strategies tailored to the individual.

Simpson (2004) comments on the negative relationship between a learner having higher levels of educational qualifications prior to entry (being an indicator of the possession of learning skills) and withdrawal from an educational opportunity for academic reasons. He postulates that withdrawal “may be more likely to be for ‘institutionally unavoidable reasons such as illness, job and domestic changes and so on”. The relevant concepts from this study are Personal Competence (knowledge domain, online learning skills) and step change where higher levels of personal competence mean that less time is used or wasted during engagement with the study process, thus maintaining and not reducing the propensity to study. Whereas a step change to a learner’s *personal commitment structure* may immediately change the learner’s need for learning causing an immediate re-evaluation.

Simpson (2003; , 2004) is concerned with developing effective retention strategies using interventions. He proposes that “some dropout is beyond the power of any institution to influence. It may be due to illness, domestic and employment circumstances and other factors interacting in various ways.” Thus he calculates a maximum possible increase in retention (MPIR) for an institution which is the number of students multiplied by the avoidable dropout rate (i.e. the total dropout rate less the unavoidable dropout rate) weighted for “the most important factors that affect dropout” e.g. previous educational qualifications. Simpson acknowledges that defining the institutional dropout rate could be problematic

since “the estimate is open to considerable criticism on the grounds of its assumptions.” For both Simpson’s open and distance learners and the postgraduate learners in this study, the trigger to immediate withdrawal is a change in the work of the individual or illness of self or family or birth or death of close family members. Thus this study also supports the idea of unavoidable dropout however, whilst actuarial information is available, it is probably as unlikely as it is undesirable that institutions will gain reliable information as to the age of the student and the ages, composition, health and lifestyle of the student’s family. To use an algorithm less rigorously founded leaves the MPIR open to criticism. The notion of a maximum possible increase in retention (MPIR) is however helpful because of its assumption that educational institutions have an impact upon the propensity to learn of its students. Additionally it may aid recognition that in the longer term, some of these learners might be helped back into a learning programme, be it the same one or a different one by offering study breaks and advice and discussion as to whether the learner should withdraw temporarily, perhaps transferring courses on their return or withdraw permanently.

Mantz Yorke (2004) considers the following as having “implications for open and distance learning”: A sense of belonging, student engagement, marketing, the social aspect, formative assessment and interim failure and the student experience. In terms of this study ‘a sense of belonging’ is reduced to the positive value obtained from interacting with other learners, of learning something as a result of those interactions and to the ‘temporal facilitation’ received through obtaining an ‘answer now’. Yorke underlines the need for institutions to be aware of students’ expectations regarding engagement and to be sensitive to different and changing types of engagement. For this study, this is a critical point. The marketing literature needs to make quite clear the institution’s expectations regarding attendance patterns, since marketing literature can mislead learners into thinking that the ‘time design’ will flex to the student rather than the student have to adapt to the ‘time design’. Regarding marketing, Yorke writes “self evidently, the courses and programmes on offer have to be attractive to potential students. If the gap between students’ expectations and their experiences is wide, then the chances of persistence are decreased”. In terms of this study, where marketing

literature misleads students such that there is a mismatch between the student's 'need for learning' and the ability of the learning opportunity to fulfil that need then the propensity to study will be reduced.

Jo Tait (2004) wrote about the process of 'study' and with the engagement of students in study and her discussions highlighted the need for academic facilitation. Stevenson, MacKeogh & Sander (2006) also identified the need for academic facilitation further identifying properties of support in terms of encouragement and feedback. Whilst it may appear obvious that a tutor's role is to provide 'academic facilitation' this did not emerge as a *key* concern of the students in this Grounded Theory. It did emerge - but was not named until now as academic facilitation - but only in so far as its effects were noted in that students needed to have an 'answer now' in order not to waste time garnered for study. In a collaborative setting however, the 'answer now' can also be provided by other learners.

In the above section examples have been taken from recent literature and explained in terms of this Grounded Theory. This concludes the review of the literature in which this Grounded Theory has been embedded and which it has developed and organised.

## **Summary**

This chapter has discussed Tinto's model of student departure from institutions and recognises the temporal nature of the model; the notion of integration into the academic systems of the institution and the notion of social integration into the systems of the institution in so far as social integration is in service to academic aims and is considered by the learner to be of benefit. It is argued that the notion of social integration into the social systems of the institution is of less importance to part-time connected learners than to full-time learners and that temporal integration is the matter of chief concern to part-time connected learners.

Kember attempts to use Tinto's model to underpin a model for student progress in distance education by reworking Tinto's concept of social integration. In doing so

Kember misunderstands the temporal nature of both his own work and Tinto's model and equates social integration with temporal integration. Kember thus loses the underpinning rationale used by Tinto rendering his own model without substance.

The symposium of May 2003 dismissed Tinto's model on the basis that a theory based on suicide is not relevant where social interaction plays such a small part. Departure from institutions of higher education is argued by Tinto to be for reasons of intellectual and social exclusion from the academic and social systems of the college. Integration into the academic systems of the connected learning opportunity is argued by this study to be necessary to the learner to the extent that the learning opportunity is relevant or useful to the learner. Academic integration is therefore remains a useful notion. Where there are collaborative learning opportunities, social integration is required to the extent that learners derive a benefit from social interactions during implementation of the connected learning opportunities. Where a learner suffers social exclusion from his or her own personal commitment structure this is of far more import -and is not the subject of this study. Such social exclusion (recognised by this study as social dislocation) matters in so far as it causes a reordering of priorities and therefore on the propensity to study. What also appears to be underappreciated by the Symposium is the temporal nature of Tinto's model and which is supported by this study. It is suggested here that Tinto's model is not without worth for the world of open and distance learning.

The literature has proved useful in providing two further concepts; temporal facilitation, where elements of the personal commitment structure 'give' time to the learner and social dislocation – a consequence of temporal integration. Data provided by the literature has been used to saturate categories of this theory.

Lastly, this theory has added to the literature by offering a theory with which to organise existing literature regarding learner continuation when undertaking connected learning and offered quantitative researchers a theory with which to separate the strands of temporal and academic matters when measuring success.



## Chapter Six: Designing and Managing for Persistence

In the previous chapter the theory was developed with the addition of a new concept 'temporal facilitation' and a new consequence of 'temporal integration' of 'social dislocation'. Recent papers were reviewed and discussed in relation to this theory. The main thrust of the review, however was to dismiss Kember's model of student progress; to show how this theory complemented and informed the work of Tinto's 'longitudinal model of institutional departure' and to present this theory as one of learner continuation emphasising the highly personal nature of a learner's decision to persist or depart.

Grounded Theory is argued to inform managed change (B. Glaser, 1992, p. 15). For this study, the opportunity is to inform stakeholders' understanding of the interaction between process and conditions to enable stakeholders either to change conditions or to manage the process. At the strategic and operational levels, the process of temporal integration of study happens within the context of institutional, national and international frameworks. Changing these frameworks will enable or prompt a change in the process. At the operational level giving protagonists the understanding with which to change their personal contexts and manage the process is likely to help them manage their experience of the process differently but not to fundamentally change the process. The following section will therefore review the implications of the theory for national policymakers, distance learning providers and connected distance learners and offer suggestions for designing and managing for learner persistence. The focus remains on temporal matters and the following is a typical example of the way in which the literature currently misses and confuses the issue of time.

“... just over one-half of respondents to the November 2002 Open University end-of-course survey found the time they spent studying was more than they expected, including 27% who responded a lot more. Time is clearly a major issue for OU students. The difficulty is in assessing whether high workload ratings are caused by course overload or other demands on students' time.” (Tait, 2004)

This grounded theory offers a different way of viewing the issues of workload and time and a different perspective from which to design a coherent strategy of interventions. The theory proposes that the main concern of online distance learners is the 'temporal integration of connected study into a structured life'. How do learners find, make or steal the time to study? In overview it is a problem of equilibrium. How do learners re-establish equilibrium as they accept new commitments? What are the implications for them and their families and their employers? Are these implications recognised by policy makers, distance learning providers and the learners themselves? Are these implications accommodated? The main proposition of this Grounded Theory is simply that in the context of connected learning, the greater the 'value of study' to the learner, the greater the learner's 'propensity to study'. Complexity is introduced with variations of context i.e. with different designs of connected learning and by the realisation that the 'propensity to study' is conditioned not only by the 'value of study' – which is itself a function of the learner's 'need for learning' and the 'degree to which study satisfies the need for learning' - but also by the learner's 'personal commitment structure' and his/her level of 'personal competencies'. Where the 'value of study' is low, the propensity to study is also conditioned by the 'cost of failure'. Understanding how these variables inter-relate is key and the following section will consider how stakeholders can use those understandings to promote the temporal integration of connected study.

## **Designing for Persistence**

### **Implications for National and International Policymakers**

Connected distance learners have made the decision that full-time study is not sustainable because of financial and or existing commitments principally to family and or work. The first question for policymakers is whether or not they wish to support connected distance learners in their efforts to learn? Given that distance learning enables employed learners to continue be productive contributors to the economy and given the national skills shortages and the imperative to upskill the nation's workforce, supporting and encouraging distance learning could be argued to be constructive. This study assumes all distance learners to be part-time

learners and national support for part-time learners is abysmal. Dearing (1997) labelled the “inequitable funding of part-time students as opposed to full-time students” as a “denial of opportunity”. McGivney (2006 p.3) notes that “part-time HE students are routinely ignored in policy” and further comments

“They are also discriminated against as they are obliged to pay fees upfront and are not entitled to the bursaries available to full-time students. The imposition of top-up fees in 2006 could therefore lead to a significant reduction in part-time enrolments, which could have a particularly negative impact on institutions such as Birkbeck and the Open University and other higher education institutions that attract a high number of mature part-time students. Research cited in section 4, showing that the majority of part-time students in higher education are studying for employment-related reasons – reflecting government priorities – makes this situation illogical as well as grossly inequitable.”

In its unequivocal respect for distance learners, this study urges policy makers to establish equity of opportunity irrespective of mode of study. Inequity being the case, the particular question for this study seems to be largely academic but is: how can government strategy be used to support people in restructuring their personal commitment structures such that they can find the time to learn? This study suggests that financial support such that learners can buy temporal facilitation would be helpful. For example, household grants or cheap loans to enable purchase of domestic help and or care for dependents might be considered. Since employers have the greatest opportunity to offer learners temporal facilitation then a system of grants or cheap loans to employers to enable the purchase of temporary labour to replace that of the learner, might also be helpful. Tax concessions to learners and or employers might be more appropriate than a system of payments. Whatever the method of support the aim would be to provide temporal facilitation for learners. Currently policymakers do not appear to be considering the issues of part-time learner support, yet with the increase in the apparent numbers of full-time students working part-time to fund their University

career, the distinction between full-time and part-time is blurring and the absence of any rationale for the different treatment yet harder to justify.

### **Implications for Providers of Distance Learning**

There is increasingly a pressure on institutions of higher education to increase retention rates since the Government has made explicit that funding will, in part, depend upon retention rates (Simpson, 2004). The Secretary of State for Education and Skills focused upon this relationship in 2004 when he wrote to the Higher Education Funding Council for England

“14. *Student Retention*. While I acknowledge that the national average student retention rates are amongst the best in the OECD, some institutions continue to record unacceptably high rates of non-completion. I want the Council to keep under review methods of funding institutions to help support those students most at risk, while ensuring that funding methodologies do not reward institutions that perform poorly in supporting and retaining students.” (Clarke, 2004)

In making students responsible for tuition fees, our national policy makers have recast students in the role of paying customer. As such, institutions can expect to experience a re-negotiation of the relationship between learner and institution perhaps developing relationships more similar to those between learners and commercial providers of education and training. There is thus a push from the Government and there will develop a pull from students to encourage state funded institutions to increase retention rates.

Given a time design, in identifying the intensely personal nature of an individual's propensity to study, this study suggests that retention rates are improved on a case-by-case basis, student retention thus becomes an individual matter of learner persistence. This study suggests that in order for learners to persist in their studies, institutions (public or private) will need to support the process of temporal integration and thus:

- support learners in establishing a sustainable equilibrium within their personal commitment structure that
- enables them to engage in learning opportunities which
- satisfies their need for learning

This can be viewed as a marketing issue where in order to design products to suit their consumers' (learners) and users' (employers) needs - where the need for competence and the need for certification of learning are different - institutions will need to answer the following questions:

- What are our learners' needs for learning?
- What learning opportunities will satisfy those needs?
- What time design will best suit our learners?

Strategically this means developing a view as to what courses are needed now and in the future and developing courses to satisfy that need. The learners of this study were principally concerned with learning in service to their employment. This means that providers will need to also develop a view of the needs of learners' working environments. None of this is new but it is of critical import to course designers whose responsibility it will be to design learning opportunities to satisfy those needs and who will require their institutions to provide them with relevant information.

For learners who withdraw, the answer to the question "What's in it for me?" is "Not enough". Concerning student withdrawal, McGivney (2004) writes of the research of Comfort Baker and Cairns (2002) "This research found that the wrong choice of course was a highly significant factor in early withdrawal from further and higher education programmes. Specific difficulties identified were:

- Course differing from that which was advertised: units changed or modules discontinued.
- Course content differing substantially from that which was expected
- Other qualification routes preferred with hindsight but not known about at the time."

Mismatches between student expectation and student experience caused by avoidable reasons such as those identified by Comfort *et al* above are irresponsible when viewed from the perspective of this Grounded Theory. This

study supports the view that best efforts must be made to match learners to their 'best fit' course where 'best fit' means offering learning opportunities that are relevant and useful, maximising the benefit to the learner and encouraging persistence through positive evaluation. This will involve a two-way exchange of information between learner and institution. The UCAS application system provides the means by which learners provide information for institutions, however, finding information from institutions about courses can be problematic. Jeffcote, Morice & Scott (2006) in reviewing the barriers to further and higher education in the Creative Industries in Hampshire and the Isle of Wight note "a lack of clear, explicit and comprehensive information on course provision at FE and HE level, from providers within the region" noting in particular that "potential students who independently search provider Internet based course directories face a dizzying array (and arrangement) of information." The online database (Morice & Maniar, 2006) developed to support the report offers an innovative prototype for organising and visualising such information. Jeffcote *et al* (2006) suggest that "there exists a need for coherence (or standardisation) of the provision of (at least) essential (basic) course level information comprising:

- Entry requirements
- Mode of delivery
- Mode of attendance
- Course duration
- Progression opportunities
- Career opportunities

This Grounded theory also suggests that in addition to the above and as well as being clear about the academic content of a course (V. McGivney, 2004), it is particularly important for marketing materials to be clear regarding the degree of temporal flexibility available. This is because a mismatch of expectations regarding the 'time design' of the course and whether the course flexes to the learner or whether the learner is expected to flex to the course can cause the learner to experience unpleasant levels of 'time tension'.

Widening participation amongst individuals who would not normally consider higher education, is an important strategy for this Government and much work has

been focused on identifying and removing barriers to education. One important barrier is entry requirements where qualifications act as an indicator of knowledge of the subject area and of learning skills acquired. Susan Tresman (2002) writes in respect of the U.K. Open University :

“The concept of open entry brings with it potential pitfalls, the most notable being that the University’s open door policy must be closely monitored so it does not become a “revolving door policy,” where students are admitted only to subsequently withdraw somewhere along their learning journey.

One strategy is that higher education institutions must ensure students are not pitched into a level of study in which they cannot possibly cope. By paying close attention to admissions policies (e.g., entry restrictions to higher level courses, the use of course prerequisites, preferred entry courses at the lowest/lower course level(s), providing bridging or preparatory work prior to commencing courses of study, adequate testing and guidance from the outset), institutions can help their students achieve their educational goals in a realistic, step-by-step manner.”

From the perspective of this study, the levels of personal competence regarding the knowledge domain and online learning skills interrelate with the design of the learning environment to waste time or use more or less of the learner’s time. Reducing the levels of personal competence required prior to entry renders the learner more vulnerable to the time design. This would indicate that a policy of pre-entry courses to help learners to achieve appropriate levels of competence in the knowledge domain and extended to include courses to develop integrating skills, online learning skills and technical skills would be beneficial in terms of learner persistence. This study views it as irresponsible to be flexible on the level of competence required in respect of the language of the course. Students insisting on taking part in a course with insufficient language skills should be warned of the pressures they are likely to place themselves under. Sample course materials will be useful in enabling the learner to assess his or her own competence in language.

The need to develop new and flexible (academic and temporal) progression routes through higher education which enable learners to achieve accredited qualifications at various time points has already been recognised by academia and the Government and is evidenced by the development of the vocational qualification of foundation degree achievable after two years full-time study with top up courses to undergraduate level. There is a growing realisation that accreditation and temporal frameworks have to be redesigned (e.g. Goodwin & Forsyth, 2003) whilst spatial frameworks have already been re-designed through the advent of online learning. The course designer operates within a framework of national accredited or institutional non-accredited qualifications and is constrained to the extent that the institution is willing and able to be innovative in its structures and in offering different models of attendance and assessment. For example, an institution's adherence to rigid timing of exam boards, the purpose of which is to validate achievement, will constrain the timing of assessments and the awarding of qualifications. Increasing the frequency of exam boards can free up the timing of start dates, end dates and assessment dates and thus also increases the designers ability to accommodate learners' personal commitment structures.

In terms of this study, it is critical that the designer is supported by the institution in understanding the learners' needs for learning in order to design learning opportunities which will satisfy those needs. The second critical point is that the designer should have an appreciation of learners' personal commitment structures and design to accommodate different learners' structures. Learners on vocational courses are likely to have common issues regarding the structure points relating to their work and the following is a good example of the tension caused where design ignores those issues:

"I seldom can submit my assignment punctually. Again, every December of the year is the busiest month for the garment business and unfortunately the exam usually falls in the following month, i.e. January. For big volume business companies, we find that it is very hard to find adequate time for revision before the exam."(Kember, 1995 p91)

In this case the designer of the course has not accommodated the 'time design' of the garment industry, in which the students of his vocational 'textiles' course work.



In planning assessment points which were in direct conflict with the demands of learners' work, the designer has not only failed to accommodate their 'personal commitment structures' but has also created conditions which encourage withdrawal.

In designing for persistence, the course designer should also render explicit the time design of the course - which for many remains latent - and be aware of the proposition that:

The greater the degree of structure of the 'time design' the less learners are able to be flexible which compromises their ability to temporally integrate studying into their 'personal commitment structures'.

To unpick this a little, 'time design' is latent in the design of an educational opportunity and refers to the pattern of time that is needed to achieve the work required by the designer. Since learners' personal commitment structures and personal competencies condition the way each learner achieves temporal integration', the time design is experienced in different ways. To the extent that designers of online courses consider time design, design will rely on an explicit and assumed or more dangerously, a latent and implied 'personal commitment structure' of a 'typical' student having assumed or implied 'personal competencies'. For example, in my work on the pilot unit for the SLONE project, I, unimaginatively and barely consciously, assumed an able-bodied student who works 9 a.m. – 5 p.m., 5 days a week, Monday to Friday, with a two-day weekend and who is competent in understanding and relating to a world expressed in English text, is able to load programs, use the internet, has good keyboard skills, and can work independently. Each of those assumptions has been challenged by learners with whom I have spoken or of whom I have read. For each assumption that a given learner contradicts, the time design I imposed will adversely affect that learner. For example learners in Dubai have a different week-end to those in the UK causing complications to the patterns of interaction; deaf students cannot hear videos, shift workers have been excluded from synchronous meetings, and the rate of work consumed by a non-native English speaker will be slower than that which I assumed.

In making explicit the assumptions on which timings are based, the designer can then accommodate learners having different levels of 'personal competencies' and different 'personal commitment structures'. For those having lower levels of 'personal competencies', introductory and enabling tasks can be designed to develop each of the core competencies of technical skills, online learning skills, knowledge of the learning domain and integration skills on the premise that increasing competence will cause less time to be wasted as the learner engages with the course.<sup>31</sup> For example Gilly Salmon (2000 p26) offers a normative model of the stages through which it is necessary to support online learners as they become online learners and introductory tasks can be designed guided by this model. To accommodate different levels of competence in the knowledge domain the designer can offer different levels of work perhaps by labelling activities and readings 'must do', 'should do', 'do ONLY if you have time' (King, 2002) such that the competent can do more and challenging work whilst novices develop.

Making explicit the time design also enables recognition by both learner and designer of any unevenness in work flow and undermines any assumption that – where there is an uneven pace - putting aside the same number of hours every week is sufficient strategy for the temporal integration of work. The assumption of an even pace, whilst it may not be accurate one, is probably a reasonable assumption given the type of information that is offered on web sites, if any is given at all. See for example Table 6.1.

Since it is possible that there will be peaks and troughs in terms of time demanded to complete the work, it is the designer's responsibility to make it explicit such that learners can take this into account when making their decisions as to whether to undertake that particular study. Yet timing of assessments is not routinely available and comments such as: "You should also expect to set aside 6 hours per week for course work commitments and then some extra time to complete assessments" (University\_of\_Portsmouth, 2006) are rare. Whether or not

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<sup>31</sup> Developing the core competency of 'language of the course' is beyond the scope of any learning opportunity whose principal purpose is not to study that language as a foreign language.

Table 6.1 How much time do you need – Open University

<b>How much time do you need:</b>			
<p>Our individual course descriptions give you the start and finish dates. To give you some idea of the time you need, bear in mind that, regardless of level, it takes approximately 10 hours of study for each credit point. Some courses are intensive - for example our 10 point, residential school courses. Some are less intensive - for example, studying 30 points over 9 months. Here are some examples of Level 1 courses:</p>			
<b>Course</b>	<b>Code</b>	<b>Points</b>	<b>Time needed</b>
Openings - Understanding Society	Y157	10	6-8 hours per week over 20 weeks
Practising Science	SXR103	10	week's residential plus time for preparation and the end of course assessment
Data, Computing and Information	M150	30	8 hours per week over 9 months
Introduction to Humanities	A103	60	16 hours per week over 9 months
<p>Most students study part-time, do 60 points a year, and take six years to complete a degree with honours (360 points) or five years without honours (300 points). Certificates and diplomas with fewer points, take proportionately less time (Open_University, 2007).</p>			

designers should design for an even pace will depend upon the needs of their learners. It could be argued that an even pace is less problematic to plan for, yet it might be helpful if important industry events could be planned around. This

requires an institutional shift in attitude such that the institution flexes to the learner rather than requiring the learner to flex to the structures of the institution.

In offering part-time and full-time attendance modes, institutions assume a personal commitment structure where temporal space has been planned in by the learner. For distance learners, the most appropriate time design will be a function of

- learners' personal commitment structures
- learners' personal competencies, mediated in the second instance by
- learners' preferred pedagogical design i.e. solo or collaborative learning opportunities

Time designs which are most flexible may offer the learner the best chance to achieve *temporal integration* however temporal frameworks can be viewed as useful guidelines in helping learners to structure their work. The former suggests a strategy of enabling learners to negotiate an individual temporal framework and the latter suggests a strategy of learners accepting a pre-designed temporal framework mediated by a set of acceptable 'extenuating circumstances' that can accommodate the conditions that learners experience. The extent to which social integration is perceived to benefit the learner will affect his/her choice since negotiating a personal time design is likely to reduce the learner's opportunities for social interaction with any particular group of people and hence his/her social integration. The problem here for all stakeholders, is that a pedagogical design which requires collaboration between learners requires a complex and emergent connection design which is in direct conflict with the learner's need to have a time design of minimal structure. Since collaborative learning is seen as a significant opportunity of online learning the conflict is a significant problem

To explore this a little: A web-based, non-accredited, software learning programme for self study with no fixed end point provides no structure since even the start date is dependent on the learner. A course however, which is heavily structured may insist upon a 75% attendance requirement and for example comprise a course period of 10 weeks, requiring 80 study hours organised into core periods of one week and an assessment period of 3 weeks and will be littered with 'structure

points', viz: start, end, organising and assessment points. Further structure points in the form of connection points, will emerge during temporal integration in part in response to the connection design. That is, every time a learner logs onto the course and connects to the learning environment, he/she creates a connection point. A level of complexity is added when the connection design requires same time study, that is the simultaneous login of several students, or similar time study that is, asynchronous login where several learners have to log in within days and sometimes hours of each other. The timing of the emergence of the connection points will be heavily influenced by the assessment points and 'organising points'. The closer that an assessment or organising point becomes, the less time there is available in which to enable the connection point(s), the greater the resulting time tension. Conditions of whether the output is assessed or not and produced jointly or solo also impact. Since the positive or negative effects of collaborative learning are felt keenly by participants, they impact directly on the learner's calculation as to whether the additional constraints of collaborative working are worth it.

Two remaining properties of 'time design' which add significant complexity to same time and similar time working are the 'base time' of the course relative to Co-ordinated Universal Time (UTC) (U.S.\_Naval\_Observatory, 2003) and the 'focal time' of the group or local tutor relative to UTC. For example Table 6.2 shows a tutor based in the U.K. who is contactable during working hours of 9 a.m. to 6 p.m. and which hours are marked in green on the second line. Learners Bill, Rosie, Joe etc are situated in various time zones around the world and their time patterns are also shown, as are those of Rusty, Betty, Doug and Tim who work night shifts in various parts of the world. Each learner's period of availability is marked green, yellow areas indicate that the learner could be available if necessary. Amongst this group of nine people, the maximum number that could be available at any one time is five thus synchronous collaborative learning with this group is simply not possible. Since 'next-stepping' in groupwork is often more quickly achieved synchronously, this will disadvantage the group. Managing the composition of such work groups such that they achieve internal temporal consistency is likely to be helpful.

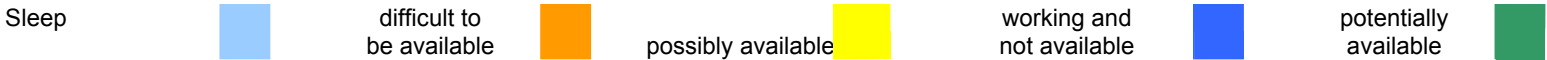
Conversely, any time study for solo learning (that is 'any time' within the core period) requires no connections between learners, only connections with the tutor. This design inflicts very little structure and has less impact on time tension.

The point here is that the degree of structure acceptable to learners will vary thus it is essential that the course designer understands the needs of those for whom he designs and the implications of his design. Further this theory demands of designers that they are parsimonious with learners' time adopting 'parsimony of time' as a design ethic. This means course designers should:

- Justify every activity requested of learners and
- The time necessary to achieve that activity
- Offer unambiguous instructions as to how to use the learning environment and how to undertake the work
- Provide sources of and recourse to interactive help

Table 6.2 The Time-matching problem

GMT	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	Noon	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Tutorial									Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green				
<b>Learners 9 a.m. - 5 p.m. working day</b>																								
Bill, London; GMT	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Rosie, San Francisco; GMT - 8 hrs	Blue	Orange	Green	Green	Green	Green	Green	Green	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Orange	Orange	Blue	Blue	Blue	Blue	Blue	Yellow	Blue	Blue
Joe, New York; GMT - 5 hours	Green	Green	Green	Green	Green	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Orange	Orange	Blue	Blue	Blue	Blue	Blue	Yellow	Blue	Blue	Blue	Blue	Orange
Kim; Kuala Lumpa - GMT + 8 hrs	Blue	Blue	Blue	Yellow	Blue	Blue	Blue	Blue	Orange	Green	Green	Green	Green	Green	Green	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Orange	Orange
Keith; Dubai; GMT + 4 hours	Light Blue	Light Blue	Light Blue	Light Blue	Orange	Orange	Blue	Blue	Blue	Blue	Blue	Yellow	Blue	Blue	Blue	Blue	Orange	Green	Green	Green	Green	Green	Green	Light Blue
<b>Learners shift working 3 a.m. start</b>																								
Rusty, London GMT	Orange	Orange	Blue	Blue	Blue	Blue	Blue	Yellow	Blue	Blue	Blue	Blue	Orange	Green	Green	Green	Green	Green	Green	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Betty, San Francisco; GMT - 8 hrs	Green	Green	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Orange	Orange	Blue	Blue	Blue	Blue	Blue	Yellow	Blue	Blue	Blue	Blue	Blue	Orange	Green	Green
<b>Learners shift working 11 p.m. start</b>																								
Doug, London; GMT	Blue	Blue	Yellow	Blue	Blue	Blue	Blue	Orange	Green	Green	Green	Green	Green	Green	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Orange	Orange	Blue
Tim, New York; GMT - 5 hours	Light Blue	Orange	Orange	Blue	Blue	Blue	Blue	Blue	Yellow	Blue	Blue	Blue	Blue	Orange	Green	Green	Green	Green	Green	Green	Light Blue	Light Blue	Light Blue	Light Blue



### **Implications for Technical Designers**

'Engaging' in 'study' has the implicit intention of using time and the explicit intention of developing the competencies of the learner. Different influences conspire to mean that studying 'takes more time' or 'wastes time' whilst other influences work to 'save time'. Technology co-varies with learners' personal competencies and with the 'time design' to impact upon 'time tension' and here 'technology', refers to all systems, processes and equipment that combined, connects the online learner – wherever he/she may be – to other online learners and which enables the learner to engage with the learning opportunity.

Malfunctioning technology wastes time. Where the connected learner has lower levels of technical competence, technology is likely to waste more time and where the connected learner has higher levels of technical competence; technology is likely to waste less time. This study suggests that technical designers of the virtual learning environment therefore arguably have a moral responsibility to provide a robust system that does not waste learners' time by malfunction. It also implies that unambiguous instructions on how to use the system should also be available. The interrelationship between the technical (environment) and the course (work) means that the course designer can design opportunities to explore the learning environment. This relationship also means that the designer should not design for more than the technical design can reliably deliver. For example, synchronous tutorial sessions using text-based chat is much less time efficient than verbal exchanges simply because it is quicker to speak than to type. However, text based chat is more reliably achieved over low bandwidth than is video. Responsibility for technical design however, extends only to the designed environment and whilst advice can be offered and appropriate software supplied, technical designers cannot be responsible for the non-designed environment of the student. This will vary from learner to learner principally according to learners' connection speeds and hardware capabilities. This raises a question of whether course designers should design for the lowest common denominator or for the lowest and the highest. For example should specific materials be designed for use on iPods so that learners can study in locations other than at a desk. Does this disadvantage the learner who only has access to a desktop? Should seminars be conducted only by text for the learner who has no microphone? Arguably in designing for the



lowest common denominator, the learner who has higher quality technology is having time stolen from him/her by the learner who has lower quality technology. What about the learner in Africa, with whom I spoke, who can only get access to a computer once a week? The implication for the technical designer is that it is essential to understand and design for your target learners.

Where a connected learner has low levels of competence in language skills, technology can save time e.g. translation tools. Technology through the seamless information searching can encourage learners to become independent and find their own 'answer now', saving time in locating relevant information. Where the time design creates noise through requiring learners to post notes in evidence of attendance, technology can avoid the connected learner wasting time on less useful posts, by offering for example a flagging system where postings could be labelled by the contributor according to type e.g. nodding in agreement, new information, question etc.<sup>32</sup>

Learners who do not consciously use the 'temporal integration' strategy of 'planning', 'scoping' and 'timetabling' time for study have more difficulty integrating their studies since they have to rely solely on 'operational integration' tactics and consequential behaviours. Some learners hope for the 'routinisation' of study to emerge from 'operational integration'. Learners who do plan will also have to use operational tactics to some extent since not only is the plan unlikely to be perfect in implementation but also because the 'connection design' will give rise to emergent 'connection points'. At the operational level temporal integration is a continual process of taking, finding or making time to study. The tactics available to achieve this are limited. Learners can 'take time' from time committed to other strands of his/her life either by agreement, 'negotiated time', or without agreement, 'stolen time'; they can 'find time' by 'juggling at the margins', i.e. by re-organising commitments in order to free up time; they can 'find time' by the 'opportunistic use of time' e.g. cancelled meeting or 'make time' by 'extending-the-day'.

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<sup>32</sup> Knowledge Forum offers a scaffolding system where contributions are labelled inside the posted note, these are pedagogical aids designed to aid the 'knowledge building' process as opposed to the suggestion above where notes are tagged externally and the aim is temporal facilitation.

This implies that the inclusion of temporal integration tools would be beneficial to learners. This means more than just a calendar but a dynamic tool that aids learners as they juggle. Technosocial, an emergent organisation which does not yet appear to be trading, come close to the type of software needed when they write of their work-in-progress on their website:

“Nassim is built on the belief that task management is in fact the primary application of the desktop, second only in usefulness to your email package. A proper task management system needs to do far more than manage lists. It needs to dynamically adjust what [sic] your schedule as the day progresses. It needs to learn from your behaviour. It needs to be available at your fingertips, yet never in your way. It needs to track and report on the progress of other people on the network. And of course, it needs to integrate into the rest of your life, both down to your calendar and portable devices and up to site wide project management packages..”  
(TechnoSocial, 2006)

Tools that could aid planning, scoping and timetabling and the dynamic interplay of life are likely to be invaluable to learners. This study suggests a temporal integration tool which would

- Accept and mark structure points,
  - each flagged as being more or less moveable and
  - associated with a strand of the ‘personal commitment structure’
- Accept and mark committed time
  - Associated with a strand of the ‘personal commitment structure’
- At the operational level be capable
  - of offering a timetable for the day based on ‘this is what I need to achieve today’
  - of working out the implications of ‘squeezing something in or out’
    - offering alternative timetables or
    - suggesting alternative solutions and concomitant timetables
- At the implementation level, be immediately and easily updateable as the day (time period) progresses
  - Offering solutions e.g. If you need to arrange for someone else to pick up your children then you need to do this now.

- At the strategic level be able to re structure the timetable as constraints in the personal commitment structure are changed. E.g. time released by employing domestic help
- Report on the effectiveness of the temporal integration strategies.
  - Identifying how much time is spent doing what
  - Deviations from planned timings
- Use data gleaned to suggest alternative timings or strategies where input timings and strategies have not previously happened as planned.
- Be capable of integrating with other portable devices.
- Be voice operated (typing is too slow)
- Be accessible by the technically poor
- Enable time matching between learners.
- Enable anonymous and voluntary feedback to enable patterns of attention to be identified both across the different tasks within e.g. a unit and across many units of the same course.

## **Managing for Persistence**

This section is concerned with the practical applications of the theory.

### **Implications for Connected Learners**

The main message for connected learners is ‘take control’.

- Be clear about your need for learning – why do you want to study and what do you want to study?
- Be rigorous in your search for a course to fulfil your needs and
- Enlist the support of the institution in helping you determine how well a selected course matches your temporal and academic needs. You will therefore need to:
  - Examine your commitments and prioritise them. Also:
  - Obtain best estimates of how much time a course should take over what period. Plan how you will restructure your commitments such that you can routinely integrate study.
- Having enrolled on a course, obtain detailed information regarding the timing of the course and plan these into your timetable together with important dates from the other strands of your life.

- Negotiate with your employers, colleagues and family and enlist their temporal facilitation.
- Develop your levels of personal competence regarding technology, online learning skills and integrating skills. Learn to
  - Scope, plan and timetable your study and
  - Protect your time so that you can
  - Engage with study maintaining discipline and focus.
  - Find your own answers
- Be flexible in your approach to finding solutions to the problem of how you find sufficient study time.
- Prioritise your study tasks and focus on the most important.
- Don't prevaricate. Don't allow study to be squeezed out. If that is inevitable, take steps to squeeze it back in again.
- If you have to be away, work ahead. And on your return ask your tutor for a catch up strategy (see below)
- If you are working in groups consider using the team charter in Appendix G and use the advice on proactive group working in Appendix H.
- Don't be a time imperialist. Do be time sensitive. Don't steal time from others by being late.

### **Implications for Tutors**

The role of the online tutor is that of academic, social and temporal facilitator. As temporal facilitator the Tutor has both proactive and reactive strategies available to him or her. First however, consider the commitment pattern the time design your course requires and compare this with the circumstances of your learners. To do this consider again the relationships expressed in Figure 5.2. The variables listed there directly impact on a learner's propensity to study are the learner's:

- Personal commitment structure – is it full or slack;
  - Are there dependents?
  - Does the learner work full-time, part-time, undertake shift work?
  - What is the learner's time zone relative to that of the course?
  - What routine social commitments does the learner have?
  - What are the potential sources of temporal facilitation? Friends, spouses, relatives?

- Personal Competencies – are they high or low;
  - Integrating skills: Have any re-structuring activities been carried out?
  - Online learning skills:
    - How is their focus/discipline – how will they manage or protect themselves from distractions emanating from their commitment structures?
- Need for learning – is it high or low;
- Cost of Failure – is it high or zero; and the learner's
- Degree of learner satisfaction with extent to which the learning opportunity satisfies the need for learning.

These variables can be used to predict the propensity to study of any one learner and to identify whether he or she is likely to be a juggler or struggler in the first instance and whether he or she is likely to persist or to turn into a fade-away in the second.

In proactive mode, the tutor might make the learners aware of this study early on in the course and ask each learner to consider his or her situation. Perhaps asking learners to estimate/calculate their propensity to study; to identify areas of temporal risk; to consider what steps they could take to improve their propensity to study or to reduce any negative consequences of engaging in study. The aim being to increase each learner's self awareness to enable him/her to be proactive in managing his/her structure.

In reactive mode, the tutor can monitor the learners for signs of a downward spiral of engagement, intervening as deemed appropriate. Where a juggler turns into a struggler ask why? What has changed? Have demands increased from other parts of the commitment structure? Is the learner not understanding and therefore not receiving value from studying? Is study proving a disappointment, not meeting expectations? If so what could be done to make things better? An example of a tutor and learner increasing the value of study is given in Text Box 6.1

Text Box 6.1: Increasing the value of the learning opportunity.

John was having great difficulty in starting his project. He and his supervisor, Iris, worked hard at trying to find out what was stopping him 'getting going' and established that the project just didn't inspire him. In order to do the project he needed to get out of bed at 4 or 5 a.m. in the morning and the project imposed on him just wasn't sufficiently motivating to make him take that first step of the day. John and his project supervisor took a risk in revisiting his project choice and defining a new one very late in the project year. The following is a quote from an email from John to Iris:

"I received official word yesterday that I have passed my project. I am quite elated about this. I know you will never forget me (for all the wrong reasons). I certainly will not forget you for all the right ones. You have been a major factor in my final success and I wish to thank you for your displaying high level professionalism and dedication to your job. There were some key moments when I just fell flat with my project and there seemed to be no way back. However your constructive suggestions and encouragement assisted in me clawing my way back from a position of desperate calamity. My eventual change of project type was a major [turning point], and I will never forget how you consulted with Mr ..... and went out of your way to give me the right advice and support that allowed me to progress successfully."

*Managing by Type*

Since a struggler is largely defined by low levels of personal competence and by a full personal commitment structure, this study recommends that the tutor pay early attention to supporting the struggler in increasing his competence levels and in negotiating temporal facilitation from his personal commitment structure.

Where a juggler turns into a fade-away, this is likely to be because of a lack of relevance or usefulness of the learning opportunity undertaken. It may be helpful to check whether this is because of a change in circumstances rendering study

less relevant, reducing its priority or because of a mismatch between the learner's expectations of the course academically or temporally. Herberto is offers a good example of a juggler effecting a strategy of partial withdrawal and begins to fade away.

In the beginning of (course name) last year (that is my major online learning experience) I was very motivated and eager to start. Had a very specific objective in mind (to get one of the courses I teach at a University here online) and started doing everything I was requested to do. My motivation waned as the weeks went by as I felt I was not going to be able to attain my objective - the content was more of a theoretical-pedagogical orientation than a "hands-on" approach. Also my other activities were starting to conflict with the time necessary to accomplish all (course name) tasks. I decided to drop the lengthier reading of all messages posted and later the required and recommended readings as I started switching my priorities around and attributing less and less importance to (course name).

(Herberto)

Where a juggler, struggler or fade-away turns into a leaver – leave the door open for a return to study. The learner quoted above left that year's course but returned to study with the same institution on a revised course the following year.

Where a struggler turns into a fade-away, ask the same questions as those asked of a juggler turning into a struggler. And take the general actions recommended to support strugglers, listed above. It might be that the pain of integration is just too high. Perhaps study just isn't worth the price paid. Or it might be that interventions and support make all the difference.

Some jugglers and strugglers use a strategy of 'partial withdrawal' actively selecting which tasks not to undertake. It may be helpful to find out why this is so and what can be done to resolve the problem. It might be the case that the most appropriate action for the learner is to continue at the level of partial withdrawal, achieving just enough. In other cases the learner may simply have been unwell or

tending to other commitments. As temporal facilitator the tutor's role is also to save the learner time or help him/her to avoid wasting time. This role is particularly helpful when learners have fallen behind. The problem for the online learner is the persistence of materials. If a campus based student misses a lecture, he/she only has to read the notes to *feel* that he/she has caught up whereas for the online learner the lecture is still there to be attended. In a collaborative pedagogical design, learners who are able to regularly attend, witness the growth of a discussion whereas the returning learner is faced with a plethora of postings each of which seems to have equal significance. Tutors can relieve learners of the burden of catch-up by offering a catch-up strategy which is tailored to each student, identifying the most relevant materials and suggesting a route through the postings. Since the strategy for one student is likely to be different for another, this is best communicated privately.<sup>33</sup>

Where the fade-away wishes to undertake a temporary withdrawal e.g. a study break, it is likely to be helpful to find out why. It may be a graceful way for the learner who doesn't understand to retire with dignity. On the other hand, support may enable that learner to continue. For the learner wishing to permanently withdraw, it is also likely to be helpful to find out why. The aim being to see if re-organising and temporal and academic facilitation will help. And if not, to leave the door open for a return to study in the future or to redirect the learner to a course having a better fit.

### **The crux of the matter.**

It is the course designer who has to determine the pedagogical design and in so doing draw together the academic, social and temporal threads of connected learning to provide the impossible: the perfect solution for all. I observed earlier that the difference between online learning and connected learning is pedagogy. All learners can and do connect to the Internet to find '*answers now*'. For example informal groups emerge - typically using MSN Chat software - and opportunistic connections arise allowing learners, to seek clarification of instructions and to discuss matters relating to the course. This is simply being online. Pedagogically

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<sup>33</sup> This study also commends to tutors, Bernard's Law: Judge not the validity of a learner's reason for absence but support that learner in achieving his learning goals.



driven connected learning is designed to enable the negotiation of meaning (Wenger, 1998). King and Scott's Integrated Pedagogical and Community Model recommends setting a problem to be solved by small teams of learners and providing human protocols to guide and facilitate interaction patterns and behaviours. The aim is to achieve interdependence between learners as they tussle with the issues, negotiate understandings and develop their solution. This is a demanding challenge both of the model and of the participants, academically and socially. This study explains the ways in which collaborative design is also demanding temporally.

The question is: in the interests of student persistence, should such powerful pedagogical designs be abandoned? The answer will depend on the extent to which the participants value the process and the outcome. This comes squarely back to a matter of design and knowing your learners and their needs.

### **Summary**

This chapter has offered practical suggestions as to how to make informed interventions into the structures within which connected learning happens and to the process of connected learning with the aim of improving learners' experiences of connected learning. In particular policymakers are encouraged to achieve temporal facilitation for learners by buying them time, through supporting their domestic arrangements or paying learners' employers for their time. Providers of connected learning are encouraged to make efforts to achieve the best fit between learners and the course of learning undertaken, also to consider learners' pre-entry competencies and their impact on best fit. Providers are asked to consider the time design of their frameworks e.g. validation frameworks; and the time design of their courses as they relate to the ebbs and flows of the working lives of learners. Technical design is encouraged to be responsible and appropriate to the learners' personal commitment structures. Specific advice is offered to learners and tutors for the management of the temporal integration process. Learners are particularly advised to restructure their personal commitment structures before starting a connected learning opportunity and to scope, plan and timetable their

study. Tutors are offered ideas for managing at the margins of learner type and how to identify and support each type.

The following chapter will summarise the contributions to knowledge that this thesis has made, will discuss the limitations of the study, the opportunities for future research ending with concluding remarks.

## **Chapter Seven: Contributions, Limitations, Opportunities and Conclusions**

This thesis has evidenced the development of a Grounded Theory which is based on a substantial collection of primary data, augmented by secondary data from the literature. The analysis of data has been careful and carried out strictly according to the tenets of the Classic Grounded Theory research method. The result is a theory of explanation thoroughly grounded in empirical data. In this final chapter, I summarise the contributions to knowledge which this thesis has made, review the strengths and limitations of the study, offer suggestions for further research and conclude.

### **Contributions to Knowledge**

The main contribution to knowledge of this study is the Grounded Theory: The Temporal Integration of Connected Study into a Structured Life. It is a substantial contribution to knowledge in the substantive area of connected learning, which contribution is summarised in Table 7.1 below.

The most significant contribution to knowledge is to the theoretical literature of persistence/departure. This Grounded Theory is a credible overarching theory pertaining to the persistence of part-time adult online learners. Whilst there is a wealth of work focused on campus-based learners, there is much less in respect of connected learners. One of the most respected models pertaining to the campus based learner is Tinto's model of institutional departure. This thesis has supported Tinto's work in accepting the temporal nature of his model; it challenges Tinto's contention of the centrality of the role of the integration of students into the social systems of the institution for part-time students and explains that the temporal integration of study is of greater significance to part-time learners.

This thesis has dismissed Kember's model for student persistence and replaced it with this Grounded Theory. Kember's model is based on Tinto's model but is criticised by this study for mistaking temporal integration as social integration and for misunderstanding the role of social integration in service of academic aims. Further Kember's claim to have conducted data analysis according to the

Grounded Theory research method is disputed since the explanation offered falls short of the coherent explanation of the relationships between variables expected of a Grounded Theory. Woodley *et al* (2001) dispute Kember's model from a quantitative perspective, which challenge is supported from a qualitative basis.

The professional literature on attrition and retention is extended by a conceptual framework with which to understand the relationships between variables which impact on a learner's propensity to study. As discussed on page 122 researchers using both qualitative and quantitative methods in this field have recognised the difficulty in capturing the complexity of the relationships between variable. This study offers a framework with which to organise future research efforts. In distinguishing between the temporal nature of persistence and academic success it becomes clear that academic success is dependent upon persistence. This has implications for the design of quantitative studies and supports Shin and Kim's approach of separating dropout (temporal) from success (academic). It also identifies the key variables which are likely to be useful to quantitative research designs. This study also supports Simpson's notion of a 'maximum possible increase in retention' where learners withdraw from a course because of a step change in their personal commitment structures. Lastly, in postulating that reducing the cost of integration and increasing the value of the learning opportunity will increase a learner's propensity to study, this study supports Yorke's contention that improving the conditions for students will increase persistence rates.

The most exciting contributions to knowledge of this research are those opportunities to inform practice. Different aspects of the theory are relevant to different stakeholders. Providers of connected learning will be most interested in the concept of 'Time Design'. As discussed on page 5 responsibility for the development of e-learning in the UK is invested with the institutions of higher education. These institutions rely on an age old time design fashioned around the farming year and harvest. Currently therefore providers are forcing an old design onto a new concept, to the detriment of today's connected learners, a position

which is increasingly untenable. A fundamental and strategic reassessment of the time design of connected learning is required.

The Leitch report on skills (2006) is calling for institutions of higher education to provide a flexible response to the needs of employers in the provision of demand-led vocational learning. This study supports Leitch's call for providers to change from a supply-sided approach to demand-led approach to provision of vocational learning. From the point of view of the vocational learners of this study, this means that providers need to offer learning opportunities which are relevant and useful and to design for persistence. In a fast changing, technology driven world and to the extent that the needs of employers and employees coincide, providers of connected learning will need to remain current and to be flexible in the sense of providing time designs which flex to the learners rather than vice versa.

Tutors are likely to find the typology of learners the most useful. In understanding the problems that learners are likely to face, tutors can use the typology to predict problems and to help learners manage the process of temporal integration. Learners are likely to find most useful that part of the theory which details the different stages of juggling, engaging and evaluation and the strategies that are open to them in managing the temporal integration process.

Table 7.1 Contributions to Knowledge

<b>Contributions</b>	<b>Supported</b>	<b>Added</b>	<b>Challenged</b>	<b>New</b>
<b>Theoretical Literature – persistence/ departure.</b>	Tinto's (1993) model of institutional departure; in particular the temporal nature of model	Understandings of relative significance of temporal integration and social integration for part-time learners.	The centrality of the role of social integration into the systems of the institution for part-time learners.	Grounded Theory of explanation of learner continuance. A conceptual framework by which to understand the process by which learners continue to engage in study.

<b>Contributions</b>	<b>Supported</b>	<b>Added</b>	<b>Challenged</b>	<b>New</b>
	Woodley <i>et al's</i> (2001) challenge of Kember's model of student persistence	Re-interpreted Kember's (1995) research from the perspective of this Grounded Theory.	Kember's (1995) model of student persistence.	
<b>Professional Literature – attrition/retention</b>	Simpson's (2004) 'maximum possible increase in retention'  Yorke's (2004) contention that improving the conditions for students will increase persistence rates.		Simpson's 'maximum (2004) possible increase in retention'	A conceptual framework by which to organise current understandings of issues of online distance learners  A theory directly addressed to learners and from the learner's perspective for the management of continuation of study.
<b>Quantitative research design.</b>	Shin and Kim's (1999) separation of the variables dropout from success	A conceptual framework which distinguishes temporal from academic issues.	The adequacy of principally deductive qualitative and quantitative methods to understand the complexity of the substantive area of connected learning.	A conceptual framework capturing the complexity of the interrelationships between variables
<b>Design Literature – connected learning</b>	Salmon's (2000) model of teaching and learning online through computer mediated communication.	A conceptual framework by which to understand the implications of technical design on connected learners.	The feasibility of a pedagogic design collaborative learning for connected learners	A theory explaining how learners determine their degree of engagement with a connected learning opportunity

<b>Contributions</b>	<b>Supported</b>	<b>Added</b>	<b>Challenged</b>	<b>New</b>
<b>Practice</b>	The Leitch review of skills (2006); in requiring a demand-led provision of vocational learning.			<p>A theory with which to inform the management of change of the structural conditions of connected learning.</p> <p>A conceptual framework by which to design for and manage for persistence viz:</p> <p>Introduction of the concept of 'time design' as a tool for designing for learner persistence.</p> <p>A conceptual framework for Tutors for managing for learner persistence.</p> <p>A conceptual framework for learners for managing for persistence</p>
<b>Method</b>	Classic Grounded Theory research method (e.g. Glaser, 1998) supported by illustrating that rigorous implementation of method reliably produces empirically grounded theories explaining patterns of social behaviour in a substantive area or population	To the literature on implementation of Classic Grounded Theory by discussion of development of theory and by provision of audit trail of effort and learning.	Classic Grounded Theory research method: whilst 'all is data' not all data may be used. Ethical considerations may restrict collection of some forms of data.	Developed new methods of online data collection according to the tenets of the Classic Grounded Theory research method

This theory extends the literature on design of connected learning by offering a theory developed from the learner's perspective, explaining how design impacts on the learner. It challenges designers to consider the feasibility of a pedagogic design of collaborative learning for connected learners. It adds to the literature on technical design by raising awareness of the impact of technical design on connected learners. It supports Salmon's model of teaching and learning through computer mediated communication in its consequences of coaching learners to develop their personal competence in online learning skills.

The literature on the Grounded Theory research method is extended by developing processes and techniques by which to engage in discussions with participants online in accordance with the tenets of Grounded Theory. It adds to the 'how to' literature on the implementation of the Grounded Theory research method by tracing the development of this Grounded Theory. Here it challenges the *unconsidered* adoption of the concept 'all is data'. This is not to dispute what constitutes data, it is to say that ethical considerations may require a researcher developing in praxis, to elect not to include the data by constant comparison. Finally it contributes to the Classic Grounded Theory literature evidencing that the rigorous implementation of the research method reliably produces empirically grounded theories explaining patterns of social behaviour in a substantive area or population.

### **Limitations**

Limitations of the theory are discussed in relation to an evaluation of whether or not this work satisfies the criteria for a Grounded Theory.

### **Criteria: Fit, Relevance, Workability and Modifiability**

In Chapter Three I discussed the issue of data theory which concerns the 'relevance and validity' (Phillips & Pugh, 2000, p. 61) of the data collected and concluded that the data I collected was both appropriate and reliable. I also discussed in detail the analysis of the data to evidence that I implemented the method according to the tenets of Grounded Theory. Glaser's criteria for judging a Grounded Theory are fit, workability, relevance and modifiability.



“Fit is another word for validity. Does the concept adequately express the pattern in the data which it purports to conceptualise? Fit is continually sharpened by constant comparisons.” (1998, p. 18).

Fit is achieved gradually. The researcher tries on one label and uses it until a better one comes along. The concepts I have used are the best fit to date but even as I write, I continue to refine the theory. Thus I now see the concept ‘propensity to learn’ as intention and ‘compliance’ as action whereas I had seen them as synonymous. It is my judgement that the concepts adequately express the data, it is likely that they could be improved. It is my judgement that this Grounded Theory has been carefully induced from the substantive area.

“Workability means do the concepts and the way they are related into hypotheses sufficiently account for how the main concern of participants in a substantive area is continually resolved?” (Glaser, 1998, p. 18)

My judgement is that they do. The comprehensive way in which this theory organised and explained the literature is offered as evidence of this. The concepts are not exhaustive, for instance I suspect that jugglers who decide to permanently withdraw because of a reducing value of study, are also those people who inform the institution of the fact of their withdrawal. This would mean that fade-aways would comprise only strugglers who experience a reducing value of study. My only evidence for this however, is from Herberto (quoted on page 156), thus theoretical sampling for a further category of disappointed jugglers is needed to see if there is a distinction between disappointed jugglers and disappointed strugglers. My final argument for claiming workability is that my understandings from this study have informed my own practice. The learner quoted in Text Box 6.1 was fading away. I recognised his problem, and formed the view that if he did not chose a project which he found worthwhile that he would literally not be able to get up in the very early morning and do the work. Confident in the theory, though not a little nervous, I took a risk with his qualification and my reputation in going against advice, and searched with him for a new project which was more relevant and useful to him. The theory suggested that his propensity to study would rise and so

it did such that he completed his course, achieving temporal success, also achieving academic success by passing the final course unit.

“Relevance makes the research important because it deals with the main concerns of the participants involved. To study something that interests no one really or just a few academics or funders is probably to focus on non-relevance or even trivia for the participants. Relevance, like good concepts, evokes instant grab.”(Glaser, 1998, p. 18).

It is my judgment that this research deals with the main concern of the participants involved. Time as a problem is mentioned in study after study and in interview after interview. *Everybody knows that time is a problem for distance learners*. But interestingly, using time as a reason for not doing something is a form of vaguing out. For example saying: “I don’t have time to do ‘x’” is a throw away line - it is short for: “I have many priorities and this is not one of them, therefore I do not intend to spend my time on ‘x’”. Thus whilst time is a problem for online learners the problem is better defined as one concerning the temporal integration of study into a structured life.

“Modifiability is very significant. The theory is not being verified as in verification studies, and thus never right or wrong. ....it just gets modified by new data to compare it to.... New data never provides a disproof, just an analytic challenge.” (Glaser, 1998, p. 19).

I am ceasing my research study at this point for pragmatic reasons of funding and time and because I believe the study is sufficiently workable and relevant to be useful. I could continue to theoretically sample as suggested above. I could extend the study by interviewing comparison groups on non-vocational courses. I am particularly interested in how people decide whether or not to undertake a course of study. This study is therefore left at a point at which it is recognised that modifications can be made to it, suggesting where those modifications might start.

The Grounded Theory presented here is limited by my expertise as a novice Grounded Theorist. Whilst I have made every effort to produce a coherent Grounded Theory, my inexperience will have impacted. Indeed the experiential nature of Grounded Theory is highlighted as I begin my second Grounded Theory study. I notice now that I am much more aware of scoping the substantive population and the substantive area, something which I did less well in this study. The substantive population changed as the study progressed and my lack of clarity impacted upon the theoretical sampling stage. The literature rescued me at this point and provided the data I needed. However, I believe this knowledge will help me pay better attention to the role of comparative groups and their purpose of defining distinctions, in my next study.

My study was also limited by my slow realisation of the purpose of memos which meant that I carried too many ideas in my mind. This may have led to the loss of useful ideas.

I also intend to be less intense and more light-foot when coding. The intensity of my effort in the open coding stage of this study slowed me down – and since when I revisited the data in the theoretical sampling stage, relevant data had been passed over, moving slowly is not necessarily, more effective. As I progress with the development of this second study, I expect to learn more.

## **Opportunities**

### **Future Research**

The substantive area of this study is that of adult, part-time, connected learners. The initial focus was on adult postgraduate learners studying online at distance. The bulk of the data came from

- discussions using email and
- discussions and observations from my work as an online tutor with online distance learners and learners attending campus based courses with face to face and online learning opportunities.

The literature review extended this to include undergraduates and correspondence distance learners. The focus of this thesis is on adult part-time connected learners

(as opposed to correspondence learners) however, because it is the nature of the online context coupled with constructivist pedagogy that causes particular pressures for learners. The theory does have relevance for correspondence distance learners.

This theory could be developed in several ways.

### **Research Opportunity One**

The substantive area could be extended to include full-time learners on blended courses (see Table 2.1) since in the UK at least, revisions in funding appear to be causing full-time students to work many hours in part-time jobs, with anecdotal evidence of students routinely missing lectures, seminars and tutorials through work commitments.

### **Research Opportunity Two**

“A Formal Grounded Theory is a theory of a SGT [Substantive Grounded Theory] core category’s general implications generated from, as wide as possible, other data and studies in the same substantive area and in other substantive areas” (Glaser, 2006).

A formal theory of temporal integration might be attempted which addresses how adults initially develop their personal commitment structures and how once established, adults achieve temporal integration of any type of additional commitment into their lives.

### **Research Opportunity Three**

This study is concerned with re-establishing equilibrium following change - as are the following three Grounded Theories:

- Balancing Cancer from a primary care perspective. Diagnosis, posttraumatic stress and end-of-life care (Thulesius, 2003)
- Keeping My Ways of Being; Middle-aged women and menopause (Ekstrom, 2005)
- Moral Reckoning in Nursing (Nathaniel, 2006)

The learners of this study seek to re-establish equilibrium in their Personal Commitment Structures following commitment to a course of study. Cancer sufferers, supported by their primary carers, seek to re-establish equilibrium following a negative change in the progress of the disease (Thulesius, 2003). Women seek to re-establish equilibrium in their perceptions of themselves during and following menopause (Ekstrom, 2005). Nurses seek to re-establish equilibrium to their reasoning processes following a dramatic challenge to their core values where a nurse's professional values have been developed during the processes of 'Becoming, Professionalising, Institutionalising and Working' (Nathaniel, 2006).

Three of the studies, implicitly or explicitly refer to a set of core values to which individuals refer when making decisions, three involve a mathematical type decision-making process and two of which present these as algorithms. The learners of this study have a set of needs from which they (reason and) determine their priorities. The women of Ekstrom's study use a "personal calculation process" and "seemed to balance both their experienced need and the probability of benefit with a certain measure against their own beliefs and values" (2005 p 142,143). Concerning algorithms: Ekstrom writes further that the 'personal calculation' "encompassed both an evaluation and a more mathematical assessment of the situation" and it is possible to see how the propositions of the 'personal calculation process' could be expressed as an algorithm. This study is indebted to that of Thulesius for providing the model for the balancing algorithm of this study. Thulesius in turn writes of his algorithm as

"an example of the grounded theory concept "qualitative math", defined by Lazarsfeld (1958) who claimed that any qualitative hypothesis could be presented as a mathematical formula, and a mathematical formula could be established qualitatively." (2003 p166)

There are tantalising links between these four grounded theories which I commend as worthy of examination.

### **Research Opportunity Four**

According to Wenger (1998), practice emerges in response to the designed environment and designed work. Change these designs and practice will change. Giving learners the tools by which to change their personal contexts and manage the process is likely to help them to manage differently but not to change the process. If however, the recommendations to policymakers and providers of connected learning offered in Chapter Six are acted upon, in Grounded Theory terms, the conditions under which the process of temporal integration takes place will change, and therefore the process will change. This will provide an opportunity for a research study to assess the effect of change and also an opportunity to modify this theory of temporal integration.

### **Conclusions**

This is principally a theory of continuation of study. Learners will continue to study until either a step change forces a decision as to whether to persist with or depart from the connected learning opportunity; alternatively learners will continue until the degree of satisfaction with the learning opportunity as a means of satisfying their need for learning falls to a point where they passively and quietly withdraw from the course over time. The literature in this area is focused at the institutional level on the professional concern of how to reduce attrition rates or increase retention rates. It lists many contributing factors but does not explain how those factors interrelate thus effort aimed towards increasing retention rates whilst purposeful are directionless. Effort is not expended on the variables - and the relationships between them - which will have the most effect. These variables are a learner's need for learning, the degree to which the connected learning opportunity satisfies the need for learning, the learner's personal commitment structure, the learner's level of personal competencies and the cost of failure.

The institution directly impacts on a learner's personal commitment structure through the time design of the learning opportunity, imposing structure points in the form of organising points, connection points, start and end points and assessment points. The literature on the design and implementation of online learning opportunities has not previously considered the issue of time design.

Time design has been unrecognised and implicit. Much of the student distress reported in the literature has been as a result of frustrating experiences and wasted time decreasing the value of study and thus learners' propensity to study. This thesis offers designers a new way of looking at workload and insights as to how to design for persistence.

The literature has also described the growing adoption of a pedagogical approach of collaborative learning. This thesis suggests that where collaborative learning is carried out successfully, it has both a high value and a high cost to learners. The high value will increase the learner's propensity to study; the high cost will reduce it. Where implementation is unsuccessful it will have low value and high cost, reducing the learner's propensity to study. Responsible design of connected learning opportunities will therefore involve consideration of the types of personal commitment structures of learners, including an appreciation of work patterns, seasonal work flows and time zones and an assessment as to whether the benefit of connected learning will outweigh the costs for this particular group of connected learners. Responsible design will require parsimonious time design where the costs to learners are minimised and support offered for the processes of connected learning and in particular for virtual group working.

Student retention is an important issue for the economy, individual institutions, and for individual learners. The literature talks about connected learning and about connected learners. None of the literature addresses the learner directly. In focusing on the student experience, this thesis identifies the highly personal nature of learner continuation and directly addresses online learners offering practical guidance on how to remain connected. The literature is also extended by providing tutors with a new way of understanding their learners and their situations. Some of the literature discusses absent learners in pejorative terms and this theory offers another way of understanding absence. More importantly the theory offers tutors way of supporting learners as they strive for the temporal integration of their studies.

This thesis is a significant contribution to the substantive area of connected learning, offering learners a conceptual framework by which to be strategic and pro-active in their management of the temporal integration process; and offering policymakers and connected learning providers the conceptual framework with which to build a coherent strategy of informed interventions aimed at achieving the continuation of connected learning and by association, increasing retention rates.



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## **Appendix A: Connections**

### **Creating a Network**

Rutter (2005) starts his analysis in 1970. At this point the personal computer has yet to be invented and Intel's first microprocessor – a vital component - is a year away from being marketed. Mainframe computers are the province of big business, the military and academia. In the USA, the Department of Defence's Advanced Research Projects Agency Network (ARPANET) has four computers connected which are 'fully operational and working reliably'.(Campbell-Kelly & Aspray, 2004 p263). ARPANET is important because it is from this network that the Internet evolved. Rutter argues that whilst the Internet is now the predominant network, this was by no means inevitable and "the Internet was only one of several potential outcomes." (Rutter, 2005 p244). What defines the Internet is the TCP/IP internetworking protocols which govern the way computers communicate with each other. There were alternative protocols in use and to prove his thesis, Rutter examines the growth of computer networks in the UK which in the early years was driven by the academic networks and which used different protocols (2005, p. 244). Rutter describes the arrival of early mainframe computers at Universities and the gradual recognition of their potential through time sharing activities where Universities sold computer access to industrial organisations, receiving jobs and returning output through the Royal Mail. Rutter writes:

“As more and more universities obtained computers during this period and became aware of the resource sharing services offered by the national centres, they started to use Remote Job Entry (RJE) terminals. RJE's consisted of a card reader and line printer, enabling people at universities to submit batch jobs to the mainframes at the centres, with their terminals printing the results. The combination of powerful computers accessed throughout a region by universities led to the formation of an innovation: academic computer networks. These were networks used by academic staff at universities and research council funded sites to conduct teaching and research activities such as remote job submission and early forms of communication using computers.” (2005, p. 14)

As networks emerged using proprietary networking protocols, problems of incompatibility between protocols and thus problems of interconnection between networks became apparent. In an attempt to overcome this problem, in 1976 networked institutions agreed to adopt the International Telecommunication Union's international networking standard X.25. Rutter observes:

“The decision to adopt X.25 occurred during a period when the International Organization for Standardization (ISO) was proposing a new standard for internetworking. The ISO protocols and X.25 both advocated an open systems approach which meant that companies could adopt non-proprietary network standards to form systems composed of hardware and software from different manufacturers. Known as Open Systems Interconnection (OSI), the British Standards Institute had originally begun work on the architecture during 1976.” (2005, p. 30)

Thus in 1976 at least, there is a potential alternative to what evolves to be the TCP/IP networking protocols of ARPANET and subsequently the Internet. Networks are however, still very much the preserve of academia, main frames and remote terminals since the first personal computers did not become commercially available until 1977.

### **Personal Computers**

The development of the personal computer depended on the development of the microprocessor of which Intel famously became the major producer. The commercial availability of microprocessors gave rise to the first 'home' computer, the Altair 8800 in 1975. Campbell-Kelly and Aspray (2004) describe the Altair 8800 which retailed at \$397:

“The computer consisted of a single box containing the central processor, with a panel of switches and lights on the front; it had no display, no keyboard and not enough memory to do anything useful”.

Campbell-Kelly and Aspray also document the introduction of the first three personal computers; the Apple II, The Commodore PET (complete with modem), and the Tandy TRS-80 in 1977, and the introduction in 1979, of the highly successful software programmes of Visicalc (a spreadsheet) and Wordstar (a word processor). They note:

“During 1980, with dozens of spreadsheet and word-processing packages on the market and the launch of the first database products, the potential of the personal computer as an office machine became clearly recognisable”;

thus paving the way for the production and release of the IBM PC in August, 1981. Campbell-Kelly and Aspray argue that such was the positive reputation of IBM that their product became an instant success and which success also underpinned the growth of the software firm Microsoft. Microsoft had written software for the Altair 8800 and when approached by IBM to develop an operating system for their new personal computer, bought, re-worked and supplied an adapted operating system, to IBM as MS-DOS, and for which it received a royalty for each IBM PC sold.

### **Connecting People**

The first networks for home computer users started to emerge in 1979. Campbell-Kelly and Aspray (2004 p249 ) note that CompuServe in an attempt to improve productivity extended their core business (of selling time on their time-share computers to business customers) by making those computers available to domestic users in the USA during the evenings and week-ends. By the end of 1979, CompuServe had enrolled 1,000 domestic users (Rutter, 2005 p204) on their closed network, rising to 130,000 users by 1984 (Campbell-Kelly & Aspray, 2004 p 250). Also in 1979 the hugely successful ‘Usenet’ network was developed, connecting computers having Linux operating systems. In the UK, in 1984, Rutter (2005 p39) notes that users of the academic network JANET were transferring files, accessing library catalogues and communicating with other users; also that America Online (AOL) launched a proprietary, closed network for home users in 1989. Thus at the end of the 1980s there were a growing number of networked home computer users in large but largely closed and separate systems. Such gateways as there are between networks, were limited.



It was Tim Berners-Lee's vision to create a universal network and he writes:

“When I proposed the Web in 1989, the driving force I had in mind was communication through shared knowledge and the driving market for it was collaboration among people at work and at home. By building a hypertext Web, a group of people of whatever size could easily express themselves, quickly acquire and convey knowledge, overcome misunderstandings and reduce duplication of effort. This would give people in a group a new power to build something together.” (1999, p. 174)

The social implications of this are breathtaking. How this is achieved technically is also fascinating. Networking architectures are described in layers, (see Table 2.1 below), and whilst it is not appropriate to describe the entire process of how networks are achieved it might be helpful to understand the main functions of the layers and examples of associated international protocols which enable interoperability. When an individual accesses the Internet from home, a common method is to access using the ordinary copper telephone wire. The copper wire equates to the physical layer in Table 2.1 below. If the user is using an ordinary telephone line, he will use a telephone modem and dial-up his Internet Service Provider and connect to the ISP's network. The ISP will use the Point-to-Point (PPP) protocol to regulate the connection speed, the speed at which data transfers between the individual's telephone wire and the ISP's network. This is the data link layer. The Internet uses the Internetwork layers and the associated Internet Protocol (IP) and the Transmission Control Protocol (TCP) to send packets of data through the Internet over the data and physical layers. The way that the packets are formed is governed by the software of the Applications layer. Dennis explains:

“The Internet is the most-used network in the world, but is also one of the least understood. There is no one network that is *the* Internet. Instead, the Internet is a network of networks – a set of separate and distinct networks operated by various national and state government agencies, nonprofit organisations, and for-profit corporations. The Internet exists only to the

extent that these thousands of separate networks agree to use Internet protocols (TCP/IP) and to exchange data packets among one another.” (2002 p217)

**Table A.1 Networking Layers and Example Associated Standards**

Layer		Common Standards
Application Layers – the user’s connection to the Internet e.g. web browser	7. Application Layer (Also 5. Session and 6.Presentation used mainly for security purposes e.g. encryption, passwords)	HTTP, HTML (Web) MPEG
Internetwork Layers – connects applications to the network and determines best route through network	4. Transport Layer	TCP (Internet)
	3. Network Layer	IP (Internet)
Hardware Layers – moves messages from one computer or device to another computer or device	2. Data Link Layer	PPP (dial-up via modem, DSL modem)
	1. Physical layer	V.92 (56-Kbps modem)

Adapted from Dennis (2002 p23)

Berners-Lee chose to focus on developing the Web over the Internet for several reasons, one of which was that computer users at his employing organisation, CERN used Unix or VMS operating systems. Unix already used TCP/IP and ‘TCP was starting to become available for the VMS, too.’ Thus the Web would be accessible to users having the two most popular operating systems at that time (the late 1980s) (1999, p. 21). Of designing the World Wide Web Berners-Lee writes:

“The art was to define the few basic, common rules of ‘protocol’ that would allow one computer to talk to another, in such a way that when all computers everywhere did it, the system would thrive, not break down. For the Web, those elements were, in decreasing order of importance, Universal Resource Identifiers (URIs)<sup>34</sup>, the Hypertext Transfer Protocol (HTTP) and the Hypertext Markup Language (HTML) (1999, p. 39).

Berners-Lee was at this stage principally concerned with the applications layers. New software was required; client software of a web browser/editor to read and write to the Web; server software to store and send out web pages when requested and also a protocol – at the applications level - governing how the two communicate. The latter was achieved through the Hypertext Transfer Protocol. The URI, now known as the URL or Uniform Resource Locator, is the link between the applications layer of the Web and the network layer of the Internet. Each Web address or URL (applications layer) is linked to the IP address (network layer) of the serving computer. All computers attached to the Internet have a numeric IP address, for example 148.197.254.16 is the IP address of the University of Portsmouth’s Web server. The University’s URI/URL associated with that number is <http://www.port.ac.uk> A central organisation known as The Internet Corporation For Assigned Names and Numbers (ICANN) manages the system and is:

“responsible for the global coordination of the Internet’s system of unique identifiers. These include domain names (like .org, .museum and country codes like .UK), as well as the addresses used in a variety of Internet protocols. Computers use these identifiers to reach each other over the Internet” (ICANN, 2007)

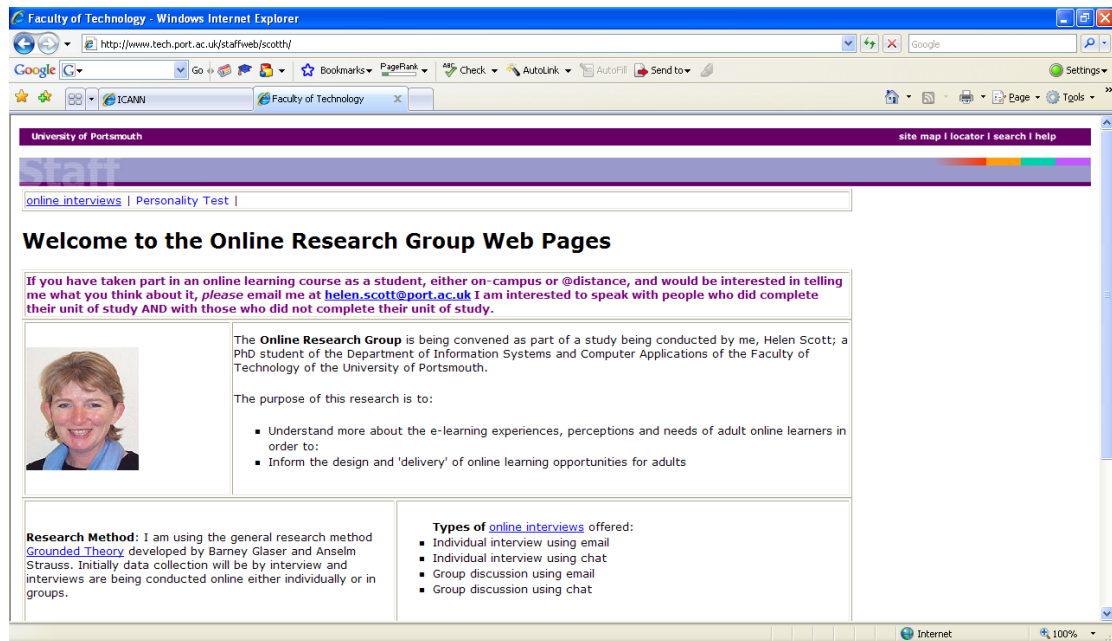
### **Creating the Content of the World Wide Web**

A web page is written using HTML code. It is saved as an .html file e.g. index.html. This file is uploaded to the serving computer. My web page (index.html) is uploaded to an area of the University of Portsmouth’s <http://www.tech.port.ac.uk/staffweb/scotth> (See figure A.1 below)

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<sup>34</sup> The URIs later became known by the rest-of-the-world as Uniform Resource Locators.

Figure A.1 Example Web Page



Someone wishing to view this webpage would open their browser and enter that URL and connect to the Internet. The browser would send out an HTTP request for that web page. The corresponding IP address for that URL (82.101.8.47) is stored on the Internet and is retrieved and used by the network layer to route the request to the serving computer. The serving computer receives the request and returns or serves the web page to the client – the requesting computer. The web browser opens the HTML file and displays the file according to the HTML code written.

The first web page<sup>35</sup> was served at the end of 1990 (Berners-Lee, 2006). By 1991 there were 500,000 Internet users.

## Synergy

In 1990 we have personal computers which are usable by lay people and which are increasingly connected to networks. The improvement in usability was largely achieved through the development of the graphical user interface (GUI) which made the capabilities of the computer accessible to ordinary people in a way which was not possible with the user unfriendly, time consuming, line by line input

<sup>35</sup> <http://nxc01.cern.ch/hypertext/WWW/TheProject.html>

of the first computer screens. However uptake of the operating system Windows 1, launched in 1985, was slow because the microprocessors available (e.g. Intel 80286) were not powerful enough to run the GUI. The Intel 80386 and 80486 microprocessors of the late 1980s, however, provided sufficient power for Windows version 3.0 released in 1990. (Campbell-Kelly & Aspray, 2004 p243-247). The networks which existed were stand alone networks with tiny gateways (access points) to other networks.

The closed networks of CompuServe and AOL – having respectively 1.35 million and 500,000 subscribers in 1993 – thus largely precluded access to the Internet. The content of the Internet demanded attention however, and dedicated Internet Service Providers began to emerge in the USA. In 1992 Demon Internet, one of the earliest Internet Service Providers in the UK was set up with less than 200 subscribers, rising to 180,000 by the end of 1994 (Rutter, 2005 p222 - 225). In 1993 Berners-Lee, having witnessed how the threat of licensing can kill a budding technology, succeeded in receiving permission from his employing organisation CERN, to have “the Web technology put in the general public domain, with no strings attached” (1999 p80). *All may create content, all may access content.* In 1994 Navipress and Mosaic browsers were launched, the latter free of charge thus making the Internet accessible to anyone who could download and install the program and in 1995 the Internet became fully commercial and thus accessible to all who *could* pay for it. The final coup de grace for other aspiring universal network protocols was delivered when Microsoft launched its new operating system Windows 95 in August of that year complete with the infant web browser Internet Explorer. The phenomenal success of the operating system vicariously ensured widespread access to the web for individual and business users. Rutter writes:

“The rise of TCP/IP occurred in association with the increasing popularity of the Internet. In a period of about 5 years, from 1990 to 1995, TCP/IP became the de facto protocol for internetworking and networking in general. It also became the protocol of choice on most computer networks in the UK. For example, by the mid 1990s, both JANET and SuperJANET used TCP/IP and other protocols such as SMTP”. (2005 p237)

By the end of 1995 there were 26 million Internet users (2005, p. 225).

## Appendix B: Memo on Ethical matters

This memo concerns itself with the practical issues of designing and conducting an ethical research study which involves human subjects, out of the Faculty of Technology of the University of Portsmouth; that is identifying the issues which need to be considered and accommodated in the research design; the ethics review of that design and issues of ethics arising during the study. It does not consider the philosophy of ethics nor the responsibility of researchers to the wider community.

### Context

Ethical review of research projects involving human subjects is becoming an important topic in disciplines which have previously been untouched by formal ethical review. Technology is one such discipline. In the United Kingdom (UK) the impetus to provide ethical review comes from a defensive need to protect researchers and their organisations from being sued by damaged human subjects; a proactive intention to improve research design through consideration of matters ethical (see Text Box B.1); a pragmatic need to satisfy the demands of sponsoring institutions such as the Department of Health and a legal need to fulfil the requirements specified in the 1995 European Directive on Data Protection and encoded in the Data Protection Act of 1998 (Europa.eu, 1995)

### Text Box B.1 Vignette

**A vignette:** I attended a Conference in September 2004. A paper was presented by an undergraduate student of a North American university. The presenter had been encouraged by her supervisor to give this paper, though the supervisor was not present.

Briefly the presentation described an experiment where the author had placed 5 adverts in the 'women seeking men' section of craig's list (e.g.<http://www.craigslist.org/> ) Each advert purported to be from either a Chinese, Japanese, Korean, Vietnamese or Thai woman. Each of these five adverts was placed in Craig's list website of 5 different North American cities. There were over 1,000 responses. During the presentation the author explained that one advert said: 'No white men need apply' and another: 'no asian men need apply'. She described how she received mail from men who were upset by the adverts, how there was a discussion on one of the Craig's list discussion forum about the adverts, and how users flagged and had delisted one of the 'no white men need apply' adverts. The author did not respond to any of the 1,000 emails she received.

The paper was not well received by audience though they were anxious not to 'flatten' the undergraduate who had clearly been let down by her supervisor and co-author. When asked if she had undertaken 'ethical review', she responded that she had talked about it with her friends. One member of the audience, said that the paper should not be published and should not

have been presented at this conference. The paper was brought up at the Ethics session which followed and where discussion highlighted that the author had misrepresented herself and that the research design had not allowed for consideration for the feelings and hurt done to not only those who replied to the advert but also those who read it; one of two abstracts about the study talks of a "substantial presence of multiracial children, who are a significantly small minority that represented themselves more aggressively in these responses". (References withheld).

In 1999 the University Ethics Committee of the University of Portsmouth acknowledged in its Terms of Reference a duty to develop:

"University Codes of Practice in relation to ethical matters, including investigations into human subjects; and in so doing to draw upon: published codes of relevant bodies; the existing codified practice of departments, faculties and other University committees; and the outcomes of consultative processes within the University".

Plus a duty to ensure that

"the ethical implications of individual proposals involving human subjects have been considered by an appropriate forum at faculty or departmental level" (ref).

By mid 2004, neither the Department of Information Systems and Computer Applications nor the Faculty of Technology of the University of Portsmouth had any formal process for ethical review of research designs for studies involving human subjects.

British professional bodies in computing and information systems offered very limited advice on ethics in research involving human subjects, most confined themselves to offering codes of conduct. The British Computing Society proffered in September 2004, 38 words (See Text Box B.2) (BCS, 2004) and in September 2003, the Association of Information Systems offered 203 words (AIS, 2003).

Hence I developed the ethical approach for this study from first principles and from associated disciplines. I also determined to contribute to the development of guidance on and procedures for ethical review of research proposals involving human subjects within the Faculty of Technology and became the student representative on the departmental ISCA Research and Consultancy Committee in 2002/2003, the University Ethics Committee in 2004 and the Faculty of Technology Ethics Committee in September 2004.

#### Text Box B.2 BCS

- "Avoid providing IT support of research on human subjects and animals, where such research is not legal, consensual or (in humans) authorised by the subject.
- Strive to safeguard the confidentiality and anonymity of private data used in research" (BCS, 2004).



**Developing guidelines specific to this study: Issues to be considered**

Much work on ethics in research has come from the medical profession. The World Medical Association (WMA) was formed in 1947 as a response to the shocking and inhuman medical experiments conducted during World War II. In 1964 the WMA published a comprehensive set of basic principles for ethical medical research, including a requirement for ethical review of research protocols. These principles are embodied in The Declaration of Helsinki most recently amended in 2000 and noted in 2002. (WMA, 2002) and which informs the approach of the U.K. National Health Service (NHS). ). The NHS has well established procedures for ethical review of research protocols and in 2004 once again serves as an exemplar to other research organisations. Scandalous research practices in hospitals in Bristol in 1997 and in Liverpool in 2000 having raised the profile of ethics in medical research with particular reference to the issue of 'informed consent'. As a response to the crisis in confidence in the NHS, the Department of Health was moved to develop the 'Research Governance Framework for Health and Social Care' in 2001 and which now governs all research 'within the health and social systems' of England (DHS, 2001). Current work on ethical review in the Department of Health focuses on the establishment of processes for research in social care, comparable to that of the NHS Research Ethics Committee (REC) structure. A proposed system is currently in review stage until December 2004 (DHS, 2004). Implementation of a new ethical review structure for social care must increase the incidence of ethical review and hence raise further the profile of ethical conduct of research.

Inspection of the NHS Research Ethics Application Form (version 3) (COREC, 2004b) – which is submitted to a REC - revealed the form to be too detailed and too specific to the medical profession to be helpful in this study. In January 2004 the 'Working Group on Ethical Review of Student Research in the NHS' published 'The Ethical Governance and Regulation of Student Projects: a Draft Proposal' which examines how student projects in the NHS can contravene the principles of the Declaration of Helsinki. The working group suggests a structure of 'Student Project Ethics Committee' (SPEC) where "their overall goal would be the implementation of the substance and spirit of Helsinki, as regards the protection and respect of participants in student projects" the main difference between a REC and a SPEC "would be their relative emphasis on scientific or educational goals rather than any compromise in the rigour of ethical review" (COREC, 2004a). I therefore determined to review the Declaration of Helsinki (WMA, 2002) in order to abstract useful principles for this study and these are listed in Table B.3

Text Box B.3: Personal guidelines abstracted from the Declaration of Helsinki

1. My duty is to protect the privacy and dignity of the human subject.
2. I must use a recognised research method and must become competent in its application.

3. The ethical review process for our University devolves the responsibility for ethical review to each Faculty. As of June 2004, there is no process established in our Faculty. I must work with the University to establish an ethical review process. I must identify my needs for ethical review and use them to guide how I work to influence the development of ethical review in the Faculty. I must ensure that my work is ethical by studying the issues of other organisations and disciplines and applying them to my own. I must seek “consideration, comment, guidance, and where appropriate, approval” of my research protocol. (ref WMA) . I must be aware of potential conflicts of interest and consider the issues of incentives for subjects.
4. I must identify the ethical considerations involved. I must make an “assessment of predictable risks and burdens in comparison with foreseeable benefits”
5. My research is only justified if there is a reasonable likelihood that I develop my competence as a researcher and so achieve my educational objective and/or “the population in which the research is carried out stand to benefit from the results of the research.”
6. “The subjects must be volunteers and informed participants in the research project”.
7. I must respect “The right of research subjects to safeguard their integrity”. I must take every precaution “to respect the privacy of the subject, the confidentiality of the” subject’s “information and to minimize the impact of the study..... on the personality of the subject”.
8. I must adequately inform each potential subject “of the aims, methods, sources of funding, any possible conflicts of interest, institutional affiliations of the researcher, the anticipated benefits and potential risks of the study and the discomfort it may entail.” I must ensure that the subject has understood the information and then “obtain the subject's freely-given informed consent, preferably in writing”.
9. I must be “particularly cautious if the subject is in a dependent relationship with me”.
10. “Both authors and publishers have ethical obligations. In publication of the results of research” I must preserve the integrity of my theory.

The Economic and Social Research Council (ESRC) funded a project for the development of a framework for research ethics in September 2003. As at October 2004 the proposed framework was still being considered by the Council (Webster, Lewis, Brown, & Boulton, 2004).

The British Education Research Association (BERA) published its ‘Revised Ethical Guidelines for Education Research’ in April, 2004 (BERA, 2004). These lacked stature and did not persuade me of the competence of the authors to offer guidance. For example the sentence: “The confidential and anonymous treatment of a participant’s data” betrayed a lack of clarity on the distinctions between the two concepts i.e. it is the communications which are confidential and the individual who remain anonymous. Hence issues regarding anonymity, where a participant’s identity is known to the researcher but not made known to others and absolute

anonymity where a participant's identity is not known to the researcher were not able to be addressed. Nor the relation of anonymity to confidentiality, where communications revealed, should not reveal the identity of the participant to others, regardless of whether the researcher knows or does not know of a participant's identity. Additionally it is not made clear that it is a requirement not only of the guidelines but also of the Data Protection Act (1998) that data be kept secure. In addition to the personal principles of Text Box B.3 above I add the personal principles of Text Box B.4

Text Box B.4 Personal guidelines abstracted from the Revised Ethical Guidelines for Educational Research.

11. I will ensure that participants "understand the process in which they are to be engaged" including
  - a. why their participation is necessary
  - b. how the research will be used
  - c. how and to whom the findings will be reported
12. I will inform participants of their right to withdraw at any time and for any or no reason.
13. I will offer access to my final theory via a website

The Data Protection Act 1998 (ICO, 2004a) also requires that data must be:

1. fairly and lawfully processed;
2. processed for limited purposes;
3. adequate, relevant and not excessive;
4. accurate;
5. not kept for longer than is necessary;
6. processed in line with your [an individual's] rights;
7. secure; and,
8. not transferred to countries without adequate protection.

The Act also requires that where a person or an organisation is controlling personal data, then the individual or organisation must register as a Data Controller and also register

- the purpose for which the data is held e.g. research
- the types or categories of data subjects e.g. suppliers and
- the data classes e.g. personal details

The form available from the Information Commissioner's Office (ICO, 2004b) confirms that the University of Portsmouth is registered as a Data Controller and has registered that data is held in regard to research activities. The University is legally obliged to ensure that the eight principles of data protection are adhered to throughout the University. The implication for this study are shown in Text Box B.5.

Text Box B.5 Implications of DPA 1998 for my personal guidelines

14. The data I collect must
  - a. only be used in relation to this research study and
  - b. be adequate relevant and not excessive
  - c. be accurate
15. I must determine
  - a. when the data will be destroyed and
  - b. how I will keep the data secure and in so doing
16. I will ensure that the data are fairly and lawfully processed according to the rights of data subjects, in particular the rights of
  - a. access to information
  - b. the right to prevent processing of information

The Association of Internet Researchers (AoIR) published their “Ethical Guidelines for Educational Research accessed (Ess, 2002) in 2002 offering practical guidance on the issues to be considered. See Text Box B.6

Text Box B.6 AoIR Issues specific to Internet Research and this study

- Who are the subjects/posters/authors/creators of the material and or interactions under study?
- What are the ethical traditions of researchers and subjects’ culture and country?
- Email or post invitations to participate
- What ethically significant risks does the research entail for the subject? If content became known what harm may result? Shame, job loss, harassment, embarrassment

Since all is data may collect data from other online sources in which case may need to consider:

- What ethical expectations are established by the venue?
- What is the most appropriate timing for informed consent as this can be context-dependent
- Where groups are large and turnover of participants is fast, is it sufficient to ask the list-owner for informed consent?

**Implications for research design**

This discussion concerning ethical issues is mostly of significance in developing me as a researcher. An assessment of the risks and benefits of the study reveal the risks to participants to be minimal (Text Box B.6) and most of the guidelines manifest themselves as an attitude of mind. No potential conflicts of interest have been identified. No incentives are being offered. People are invited to participate and since the participants are online learners, I consider it reasonable to assume

that they are competent in online communications and contend that a combination of using email and web site as a means of communicating the information is appropriate. See Text Boxes B.8 and B.9 and Figures B.1, B.2 and B.3. People are not approached until any dependent relationship with me has ended. As at September 2004, I need to be more explicit in explaining how the research will be reported and to whom. The data will be destroyed in December 2007. Electronic communications are kept on a password protected computer, the email and chat communications software is also password protected. Print outs of emails and index cards are kept in my home study and do not leave the study. Electronic back-up is kept on a CD-ROM in my home study. Adhering to the stringent requirements of the European Directive on Data Protection of 1995, means that I am likely to be adhering to the legal requirements of the European countries in which some of the participants reside BUT NEED TO CONFIRM THIS. Those participants residing in the United Arab Emirates (UAE) operate in a 'legal void' and adhering to the European Directive on Data Protection 1995 is more than sufficient to adhere to the protections offered by the UAE (Beydoun, 2004).

Text Box B.7 Assessment of risks and benefits

The data collected is not sensitive in the legal sense i.e. there are no data relating to "racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, data concerning health or sexual preference". Though data collection may be sensitive to the participant and in a very few cases disclosure could lead to embarrassment or to vulnerability in a dependent relationship e.g. student – tutor relationship.

Personal data are being collected e.g. name, email address, country of residence; which is permissible provided the participant "has agreed freely and specifically after being adequately informed" (EC, 2004)

I acknowledge the possibility of risk to personality through the uncovering of hidden or issues sensitive to the participant during interview. Given the nature of this study I consider the risk to be minimal. Nevertheless I will act with great sensitivity towards my subjects in order to protect them from me and themselves! I cannot foresee how damage might manifest itself and will therefore take advice and make decisions as to how to resolve any problems as they arise. The focus of my ethical considerations pertain to my subjects' privacy and will intertwine with the legal requirements of data protection.

I assess the risk of harm to participants as minimal and commensurate with the benefit of improved understanding of the issues facing adult, distance learners, learning online.

Text Box B.8 Invitation to participate

Dear Named person,

I was one of the ..... tutors on the ..... course on which you enrolled. I am also a PhD student at the University of Portsmouth and I am writing to ask you, if you would be prepared to take part in an online interview with me, concerning your experiences of learning online?

The purpose of my research is to understand more about the issues for online learners in order to inform the design and 'delivery' of online learning opportunities for adults.

My web site <http://www.tech.port.ac.uk/staffweb/scotth/> gives more details about the types of interviews, the questions asked and my assurances to you. I also list these assurances at the end of this email.

I hope that this will be a useful piece of research which will inform our work as online educators. I would very much appreciate your help.

Regards  
Helen Scott

Dept. Information Systems and Computer Applications  
University of Portsmouth  
1-8 Burnaby Terrace  
Portsmouth,  
Hants PO1 3AE  
United Kingdom

Tel: +44(0)23 9284 8484

**Assurances to online interviewees:**

If you agree to an individual interview anything you tell me will be treated in confidence.

If you prefer a group interview, anything the group tells me, will be treated in confidence by me. I will ask all members to treat all group communications as confidential.

In all instances:

- \* I respect your right to decide not to answer any questions which I may ask you, and without explanation
- \* I respect your right to withdraw from the interview at any time
- \* I may wish to use quotes, but I would only quote you under a pseudonym and with your express permission

Text Box B.9 First questions

Dear Named person,

Thank you very much for your reply and for agreeing to be interviewed.

I am using the Grounded Theory Research Method which means that I am looking for patterns in the data from across many interviews. It also means that there are no right or wrong answers!

My broad research question is: What are the e-learning experiences, perceptions and needs of adult online learners? I have four very general questions and I would like to start the interview by asking the first two:

\*\* What do you feel about your experiences of online learning?

\*\* What are the issues for you when working/learning online?

Please respond with your thoughts, feelings and experiences and write as little or as much as you would like and I promise to read and value every word !!

To satisfy the ethical requirements of my university, I would be grateful if you could read the paragraph 'Informed Consent' below - and if you agree with it - to copy and paste it into your next reply. This only need be done once and I am sorry for the inconvenience but the University want to make sure that I have explained the interview process clearly and that you confirm that you have understood.

Thank you very much [named person] and I look forward to hearing from you when you are able.

Kind regards

Helen

Informed Consent: I understand that by agreeing to participate in this research I am giving my consent for the information provided by me to be used in the ways described in Helen Scott's email of [Date]. My name and personal information (including my email address and online personas) will remain confidential and will not be communicated further or published in the research.

Figure B.1 Welcome page of study website

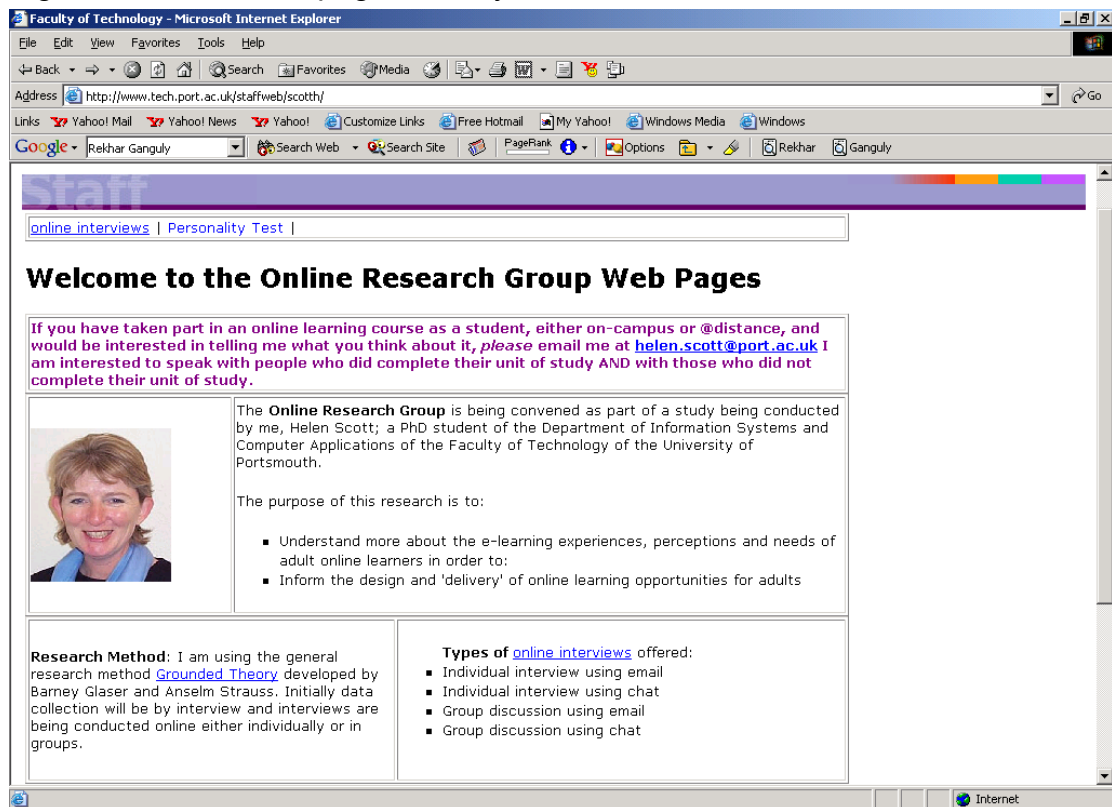


Figure B.2 Pages detailing interview process

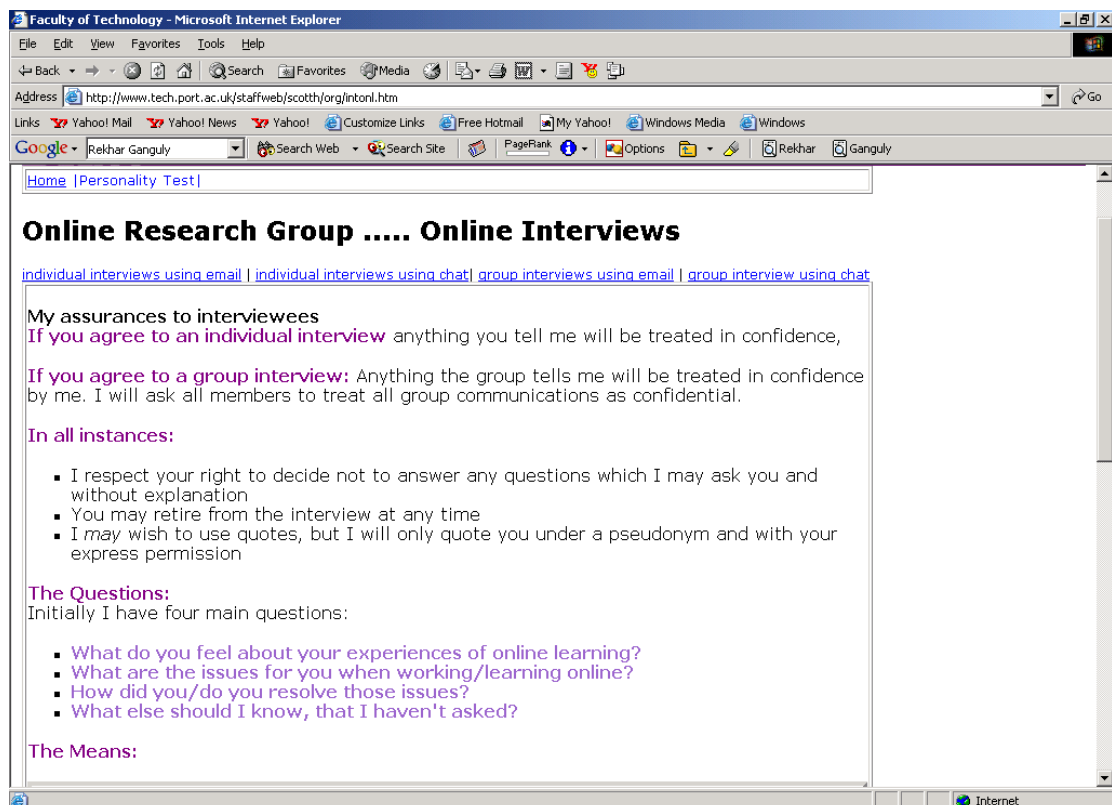




Figure B.3 pages detailing interview process cont'd

**Individual interviews using email**  
Typically this will be a series of emails, where I ask the first two questions first! And ask for clarifications and the remaining questions in subsequent emails.

**Individual interviews using chat**  
I am happy to use any freely available software and have i.d.s with:

<a href="#">MSN</a>	hmppscott@hotmail.com
<a href="#">Yahoo</a>	Helens_d
<a href="#">AIM</a>	iHelenSD
<a href="#">ICQ</a>	256644988
<a href="#">Paltalk</a>	HelenS_D
<a href="#">iVisit</a>	HelenS_D

I would be delighted to chat with you about your online learning experiences. Please [email me](#) first, so that I know to accept your invitation to chat. Or to let me know your id and preferred chat provider, so that I can invite you.

**Group Interviews using email**  
Yahoo's group service is easy to use and I guide you through the process of sending and receiving group email. The group has a web presence at <http://groups.yahoo.com/onlinelearninggroup> **You do not need** a Yahoo id to take part in the group interview by email. **You do need** a Yahoo id to visit the group web pages. This is interesting but not necessary. **N.B. You will not see the group pages unless you are a member AND you are logged in. Otherwise a 'not found' message is returned**

**Group interviews using chat**  
By default I plan to hold group chats using the group web pages at <http://groups.yahoo.com/onlinelearninggroupchat> **You will need** speakers or headphones and a Yahoo id. A microphone would be helpful if you wish to speak as well as type. **N.B. You will not see the group pages unless you are a member AND you are logged in. Otherwise a 'not found' message is returned**

If there are sufficient numbers of people using the same chat software (e.g. MSN or AIM or ICQ or Paltalk or iVisit) then we can use one of these.

If you have taken part in an online learning course as a student, either on-campus or @distance, and would be interested in telling me what you think about it, *please* email me at [helen.scott@port.ac.uk](mailto:helen.scott@port.ac.uk) I am interested to speak with people who did complete their unit of study AND with those who did not complete their unit of study.

In this memo, I have explained how I developed the ethical approach of this study.

## **Appendix C: Working Paper/Notes for Grounded Theory Seminar SF March 2005**

### **Integrating Connected Learning into a Structured Life.**

**GROUNDING THEORY Summary:** The issue for part time adult online learners – or CONNECTED LEARNERS - is DEVELOPING COMPETENCE in the context of CONNECTED LEARNING ONLINE. The main concern that protagonists are constantly working to resolve is the INTEGRATION of the TIME DESIGN of the learning opportunity into their PERSONAL COMMITMENT STRUCTURES. INTEGRATION causes TIME TENSION and for some learners TIME TYRANNY.

### **Overview**

Individuals identify a NEED FOR LEARNING where the need is to develop PERSONAL COMPETENCE in a particular KNOWLEDGE DOMAIN for professional or work-based reasons rather than for a love of learning. Established commitments principally to work and family mean that face-to-face study is precluded since the individual cannot find the large chunks of time required for same time/same place learning.

The advantages of CONNECTED LEARNING are commonly, interchangeably and confusingly referred to as flexibility and availability. Flexibility in the sense that the learners are able to *be* flexible – are able to chunk solid blocks of work into smaller pieces and thus INTEGRATE them more easily into the pockets of fractured time available to them to study. This INTEGRATION is facilitated by combined forms of TECHNOLOGY enabling both the 24/7 AVAILABILITY of the learning environment and SCATTERED ACCESS across many computers.

Doing the work of studying uses time; time that under a previous PERSONAL COMMITMENT STRUCTURE may have been spare time or devoted to pre-existing commitments. As time is used and integrating behaviours exhibited, tension arises between a learner's current commitments, which the learner experiences as a state of being. This is TIME TENSION and may be experienced either positively or negatively. Where commitments are too great, demand too much time, tension will be too tight and will be indicated by the CONNECTED LEARNER dropping commitments and experiencing negative emotions. Extreme cases of too tight a TIME TENSION result in a form of TIME TYRANNY which is endured because of the negative consequences of failure and likely future hardships. Where the TIME TENSION is too slack, this may be indicated by under achievement and negative emotions. The state of perfect or near perfect tension is likely to be motivational and highly individual. The state or degree of TIME TENSION experienced changes under different conditions.

### **TIME DESIGN.**

The greater the degree of structure of the TIME DESIGN the less the ONLINE LEARNERS are able to be flexible which compromises their ability to INTEGRATE studying into their PERSONAL COMMITMENT STRUCTURES.

TIME DESIGN is latent in the design of an educational opportunity. It is the time that is needed to achieve the work required by the designer. To the extent that designers of online courses consider TIME DESIGN, design will rely on an explicit and ASSUMED or a latent and IMPLIED PERSONAL COMMITMENT STRUCTURE of a 'typical' student having ASSUMED or IMPLIED PERSONAL COMPETENCIES. For example a student who works 9 a.m. – 5 p.m., 5 days a week, Monday to Friday, with a two-day weekend and who is competent in understanding and relating to a world expressed in English text, is able to load programs, use the internet, has good keyboard skills, and can work independently.

A learning opportunity may be more or less structured. For instance a web based, non-accredited, software learning programme for self study with no fixed end point provides very little structure. A course which is heavily structured may insist upon a 75% ATTENDANCE REQUIREMENT and comprise a COURSE PERIOD e.g. 10 weeks, requiring e.g. 80 STUDY HOURS organised into CORE PERIODS e.g. one week and an ASSESSMENT PERIOD of 3 weeks and will be littered with STRUCTURE POINTS, viz: start, end, organising and assessment points. The structure inherent in the TIME DESIGN will be further affected by connection points which emerge during integration in part in response to the CONNECTION DESIGN. The CONNECTION DESIGN will add more or less structure to the course by requiring SAME TIME study (i.e. group work requiring simultaneous login) and SIMILAR TIME study (i.e. group work requiring asynchronous login but within days and sometimes hours of each other). The timing of the emergence of the CONNECTION POINTS will be heavily influenced by the ASSESSMENT and ORGANISING POINTS. The closer that an Assessment or organising point becomes, the less time there is available in which to enable the CONNECTION POINT(s), the greater the resulting TIME TENSION. Conditions of whether the output is assessed or not and produced jointly or solo impacts. ANY TIME study for solo working (that is ANY TIME within the CORE period) requires no connections between learners, only connections with the tutor and thus inflicts much less structure and either reduces or has little impact on TIME TENSION.

Two remaining properties of TIME DESIGN which add significant complexity to SAME TIME and SIMILAR TIME working are BASE TIME of the course relative to Co-ordinated Universal Time (UTC) and the FOCAL TIME of the group or local tutor relative to UTC.

## **ONLINE LEARNERS**

The NEED of the CONNECTED LEARNER to DEVELOP COMPETENCE in the knowledge domain leads to EXPECTATIONS that the course of study chosen will satisfy that NEED where satisfaction is indicated by the judgement that what is being studied is relevant and useful. Separate EXPECTATIONS which may be conscious or unconscious relate to the degree of structure which is acceptable and which depends upon the degree of tension already present in the CONNECTED LEARNER's PERSONAL COMMITMENT STRUCTURE. The greater the tension, the less is structure tolerable.

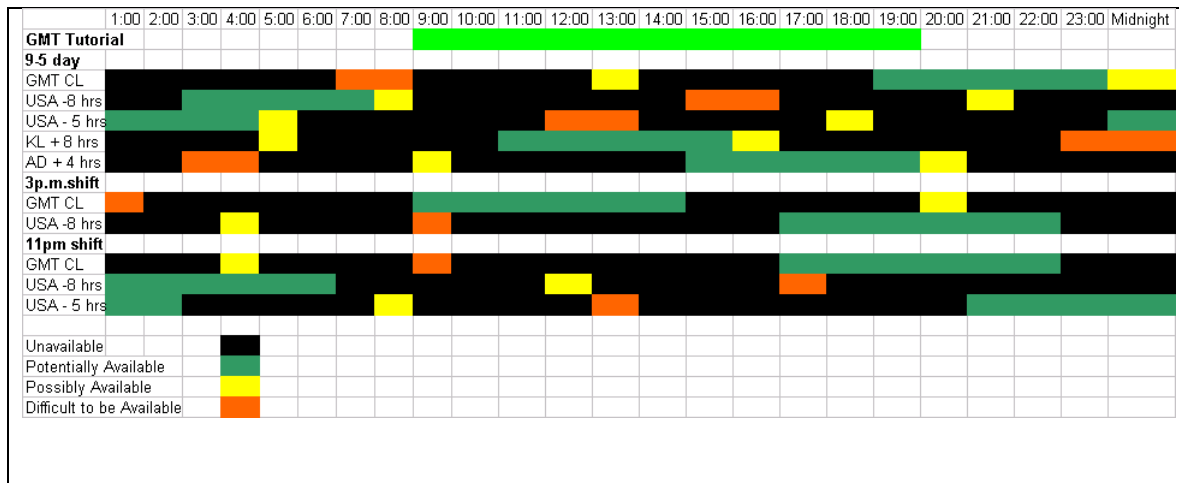
Whilst the primary aim of the CONNECTED LEARNER is to DEVELOP COMPETENCE in the knowledge domain, developing those competencies and skills exhibited by competent online learners is likely to benefit the novice CONNECTED LEARNER. The degree of TECHNICAL COMPETENCE, LANGUAGE COMPETENCE, INTEGRATION SKILLS AND CONNECTED LEARNING SKILLS impact upon the TIME TENSION experienced by the CONNECTED LEARNER. The greater the COMPETENCIES held by the CONNECTED LEARNER, the greater the likely reduction in TIME TENSION and vice versa

A CONNECTED LEARNER will commonly have commitments to, for example, family and employment and perhaps to other social commitments e.g. Church or sport. A PERSONAL COMMITMENT STRUCTURE will therefore comprise COMMITTED TIME to work, family, social organisations, self, sleep and to timetabled study time. Any time left over is 'spare' time. Thus Committed time plus spare time = Wake time. Wake time plus sleep time = All time.

A WORK/REST pattern relates to days, takes into account shift working (e.g. one month on, six weeks off) and an example of which is the 5 day Saturday to Wednesday working week and the 2 day Thursday/Friday weekend of the United Arab Emirates. A learner working with such a pattern will find it harder to work and connect within a CORE period designed around a 5 day Monday to Friday working week and the 2 day Saturday/Sunday weekend where work for the core is released on Saturday.

A WAKE/SLEEP pattern is over 24 hours, takes into account shift working and is relative to BASE TIME of the CONNECTED LEARNING OPPORTUNITY and the FOCAL TIME of a group of learners. A CONNECTION DESIGN which requires SAME TIME working e.g. tutorials or next-stepping group organisation sessions can either effectively exclude some learners or add to the TIME TENSION experienced. Figure C.1 shows how day time workers in the USA attending UK based courses are effectively excluded from synchronous sessions by their WAKE/SLEEP pattern relative to BASE TIME because most UK chat sessions are held when they are asleep. Similarly, night shift workers in the UK can only easily attend chat sessions held during their evening.

**Figure C.1: Possible Patterns of Availability of Connected Learners (need to check accuracy but use the idea).**



The TIME DESIGN and the PERSONAL COMMITMENT STRUCTURE will covary and impact on TIME TENSION. Specifically, The ASSESSMENT POINTS, ORGANISATION POINTS and the CONNECTION DESIGN of the TIME DESIGN and the WORK/REST WAKE/SLEEP patterns of the CONNECTED LEARNER will covary to determine the emergence of CONNECTION POINTS and will impact on TIME TENSION. The greater the differences between the PERSONAL COMMITMENT STRUCTURES of group members, the greater the number of ASSESSMENT or ORGANISATION points and the greater the degree of connection required between learners, the lower the probability that learners will be able to create useful CONNECTION POINTS, potentially leading to integration failure.

Step changes to a PERSONAL COMMITMENT STRUCTURE such as the birth of a child, the death or illness of a close family member, changing jobs or committing to a course of study impact on both the INTEGRATION strategies used and the degree of TIME TENSION experienced as the ONLINE LEARNER seeks to integrate the change into his her life.

## INTEGRATION

INTEGRATION is the dynamic process of ADAPTING, DOING WORK/STUDYING and EVALUATING. ADAPTING is about taking, finding, making and or stealing time in order to DO the WORK of the course i.e. to study and DEVELOP COMPETENCE. EVALUATION assesses the value of work in terms of whether it is useful or relevant and terminates with a judgement as to whether to withdraw from the course or continue to study. This is not a linear process of actions, more an omnipresent state of mind.

**Strategic Integration/Adaption** happens when there is a step change in the PERSONAL COMMITMENT STRUCTURE of a CONNECTED LEARNER, COMMITMENT PATTERNS may have to be changed and there is a reappraisal of

COMMITTED TIME. Strategic integration of a TIME DESIGN involves CONNECTED LEARNERS reappraising TIME COMMITMENTS and TIMETABLING TIME for study which involves NEGOTIATED TIME taken from other COMMITTED TIMES. That is family, colleagues or self agree to forgo some of the CONNECTED LEARNERS COMMITTED TIME and allow this to become TIMETABLED TIME for study. A step change in a CONNECTED LEARNERS PERSONAL COMMITMENT STRUCTURE is a time of great risk regarding the withdraw/continue judgement.

CONNECTED LEARNERS who do not consciously use the INTEGRATION strategy of planning, scoping and TIMETABLING TIME for study have more difficulty integrating their studies since they have to rely solely on OPERATIONAL INTEGRATION tactics and consequential behaviours. Some learners hope for the ROUTINISATION of study to emerge from operational adaption. CONNECTED LEARNERS who do plan will also have to use operational tactics to some extent since not only is the plan unlikely to be perfect in implementation but also because the CONNECTION DESIGN will require emergent CONNECTION POINTS.

**Operational Integration or Adaption is a continual process of taking, finding or making time to study.**

The tactics available to achieve this are limited. CONNECTED LEARNERS can TAKE TIME from other sections of COMMITTED TIME either by agreement, NEGOTIATED TIME, or without agreement, STOLEN TIME; they can FIND TIME by JUGGLING AT THE MARGINS, i.e. by re-organising commitments in order to free up time; they can find time by the OPPORTUNISTIC USE OF TIME e.g. cancelled meeting or MAKE TIME by extending-the-day.

Doing the work of the CONNECTED LEARNING opportunity has designed consequences: to USE time and to DEVELOP the COMPETENCIES of the CONNECTED LEARNER. Different influences conspire to mean that studying 'takes more time' or wastes time whilst others influences work to save time.

TECHNOLOGY covaries with PERSONAL COMPETENCIES and with TIME DESIGN to impact upon TIME TENSION and here Technology, refers to all systems, processes and equipment that combined, connects the online learner – wherever he she may be – to other online learners and which enables the learner to engage with the learning opportunity. Malfunctioning TECHNOLOGY wastes time. Where the CONNECTED LEARNER has lower levels technical competence, technology is likely to waste more time and where the CONNECTED LEARNER has higher levels technical competence, technology is likely to waste less time. Where a CONNECTED LEARNER has low levels of competence in language skills, technology can save time e.g. translation tools. TECHNOLOGY through the seamless information search encourages learners to become independent and find their own 'answer now', saving time in locating relevant information. Where the TIME DESIGN creates noise through requiring CONNECTED LEARNERS to post notes in evidence of attendance, TECHNOLOGY can avoid the CONNECTED LEARNER wasting time on less useful posts, through for example a flagging system\* (footnote: where postings are labelled by the contributor

according to type e.g. nodding in agreement, new information, question etc.). Inappropriate use of technology can waste time, for example using asynchronous communication facilities for next-stepping where next-stepping is a useful technique to organise groupworking and is best carried out synchronously. Inadequate facilities can waste time e.g. chat systems which only enable many-to-many communications using text where speech is quicker though the same chat system can save time by enabling opportunistic meetings to take place, facilitating integration where there is a same time/similar time CONNECTION DESIGN.

Developed Competencies help reduce time wasted. Where competencies are not developed each level of difficulty adds to the TIME TENSION experienced. For example where a learner has low competence in the knowledge domain relative to the course work, it may take that learner more time to complete the work than a learner who has some grounding in the work. Where a learner has a low level of competence in the language of the course, the translation of materials means that it will take more time for the learner to do the work of the course than for someone who does not need to translate materials. Where a learner has low levels online learning skills a learner will: waste time if he/she lacks discipline and or focus; waste time if he/she is not independent learner and able to find his/her own answers; take more time to do work if he/she is unable to cherry-pick and find relevant or useful postings especially where the TIME DESIGN creates noise though an attendance requirement and take more time to type messages if he/she has poor keyboard skills. Where a learner has low levels of technical competence it is likely that he/she will take more time to use the technology and more time to solve any technical problems which may arise. Where a learner has low levels of integration skills he/she will be unable to find, make or take sufficient time in which to complete the required work.

PERSONAL COMPETENCE levels will directly impact upon TIME TENSION. A learner with a slack personal commitment structure and low competence levels in all areas, may be able to absorb the extra time that it takes to do the work of the unit and still maintain a comfortable degree of time tension. A learner with a fully committed PERSONAL COMMITMENT STRUCTURE and who has low levels of competence in one or more areas is likely to feel degrees of imperfect time tension. Those who are over-committed and who have low levels of competence in any one area are likely to feel extreme levels time tension. Those learners who experience TIME TYRANNY are likely to have PERSONAL COMMITMENT STRUCTURES with very little or no slack prior to undertaking the CONNECTED LEARNING OPPORTUNITY and who have lower levels of competence in the language of the course.

## **FAILED INTEGRATION**

Failed integration to whatever degree means that - within the core - some work did not get done. Where there is planned absenteeism and failed integration, the TIME DESIGN can prevent learners from a proactive – work ahead – strategy by using RELEASE POINTS such that work and or discussion areas are not available

until a specified date. This forces learners on their return, into a defensive catch-up strategy.

The persistence of materials means that not only are all the missed lectures still available but in addition there all the postings made over the period. These re-connecting learners ask for help in finding a way in, other learners may offer signposts, Tutors may save the learner time by offering a catch-up strategy.

Those learners who are unable to do sufficient work are in a perpetual state of catch-up.

For all learners who have failed to integrate study into their PERSONAL COMMITMENT STRUCTURES to a satisfactory degree, then the degree of time tension experienced increases.

All learners assess the value of the work – whether what is being learnt is relevant and or useful – in relation to the degree of time tension experienced, the need for learning and the cost of failure. The question is: Is it worth it? The learner may make the judgement that it is worth it and comply with the requests of the learning opportunity and continue to study. The learner might judge that the value gained is worth some further effort but not worth the time tension experienced and make a partial withdrawal and do less work. A negative judgement may lead to a temporary withdrawal (where changes in PERSONAL COMMITMENT STRUCTURE are expected in the future) or a permanent withdrawal.

For those learners who successfully integrate, connected learning is cool.



**Appendix D: Kember's Distance Education Student Progress Inventory (DESP)**

(Kember, 1995, pp. 231 - 236)

<b>Construct</b>	<b>Sub-scale</b>	<b>Statement</b>	<b>Scott's Grounded Theory Concept</b>
Social Integration	Enrolment Encouragement	My spouse encouraged me to enrol in this course	Mental facilitation
		My family encouraged me to enrol on this course	Mental facilitation
		My employer encouraged me to enrol on this course	Mental facilitation
		My friends encouraged me to enrol on this course	Mental facilitation
	Study Encouragement	My employer was supportive while I was studying	Mental or temporal facilitation
		My spouse offered support while I was studying	Mental or temporal facilitation
		My workmates encouraged me to study	Mental or temporal facilitation
		My family encouraged me to study because they thought the qualification was important	Mental or temporal facilitation
	Family Support	I usually spend a lot of time with my family	Personal Commitment Structure
		I don't need the support of my family to succeed in this course	Personal Commitment Structure
		The support of my family means a lot to me	Personal Commitment Structure
External Attribution	Insufficient time	As I work long hours it is difficult to find time to study	Temporal Integration
		Long hours at work left little time for study	Temporal Integration
		I seem to have so many other things to do there is never enough time for study	Temporal Integration

<b>Construct</b>	<b>Subscale</b>	<b>Statement</b>	<b>Scott's Grounded Theory Concept</b>
		A change in my work left me without enough time for study.	Step change to Personal Commitment Structure
	Events hinder study	A change to my work situation made it difficult to complete the course	Step change to Personal Commitment Structure
		I was ill during the course, so find it difficult to keep up	Step change to Personal Commitment Structure
		Personal/family circumstances, unseen at the time of enrolment, hindered my studies	Step change to Personal Commitment Structure
	Distractions	I prefer to spend time doing things other than studying	Prioritising
		I have a busy social life	Personal Commitment Structure
		I went out a lot, rather than studying	Prioritising
		My spouse became annoyed because I spent so much time studying	Prioritising
		My children interfered with my studies	Distractions
		I do not let anything interfere with my studies	Discipline
		My friends wanted me to go out rather than study	Distractions
	Potential Drop-out	I am very determined to finish the course	Need for learning
		I often consider dropping out from the course	Evaluation
		I often wonder whether all the study is worth the effort	Evaluation
Academic Integration	Deep Approach	I generally put a lot of effort into trying to understand things which seem difficult at first	Engagement

<b>Construct</b>	<b>Sub-scale</b>	<b>Statement</b>	<b>Scott's Grounded Theory Concept</b>
		I usually set out to understand thoroughly the meaning of what I am asked to read	Engagement
		When I'm tackling a new concept, I often ask myself questions about it which the information should answer	Personal Competence – learning skills
		I often find myself questioning things that I read in books or study materials	Engagement
	Intrinsic Motivation	My main reason for doing this course is so that I can learn more about the subjects which really interest me	Need for learning
		I find that studying academic topics can often be really exciting	Consequence – positive benefit
		I spend a good deal of my spare time in finding out more about interesting topics in the course	Engagement
		I find academic topics so interesting, I should like to continue with them after I finish this course	None
	Positive Course Evaluation	I find the study guide useful in preparing for the course	None
		The activities/self assessment questions have helped me to learn	None
		The study booklets are easy to learn from	Possibly positive benefit
		The tutor's comments on my assignments have helped me to study	None
		The course was administered efficiently	None
	Positive Telephone Counselling	The telephone counselling service is useful	Answer now/saves time

<b>Construct</b>	<b>Sub-scale</b>	<b>Statement</b>	<b>Scott's Grounded Theory concept</b>
		The telephone counselling service provided help when I needed it	Answer now/saves time
		The telephone answering service is a waste of time	Answer now/wastes time
		I use the telephone counselling service often	Answer now
	Reading Habit	I enjoy reading so I am suited to distance learning courses	Personal Competence – language
		I read other books as well as the study materials and set texts	Personal Competence – language
		I read widely	Personal Competence - language
Academic Incompatibility	Surface Approach	Lecturers seem to delight in making the simple truth unnecessarily complicated	None
		The best way for me to understand what technical terms mean is to remember text-book definitions	Personal Competence – knowledge domain/learning skills
		I find I have to concentrate on memorising a good deal of what I have to learn	Personal Competence; knowledge domain/learning skills
		When I'm reading I try to memorise important facts which may come in useful later	Personal Competence; knowledge domain/learning skills
		I usually don't have time to think about the implications of what I have read	Temporal Integration
		Often I find I have read things without having a chance to really understand them	Personal Competence; learning skills: focus/discipline?

<b>Construct</b>	<b>Sub-scale</b>	<b>Statement</b>	<b>Scott's Grounded Theory Concept</b>
	Extrinsic Motivation	I suppose I am more interested in the qualifications I'll get than in the course I'm taking	Need for learning
		I chose the present course mainly to give me a chance of a really good job afterwards	Need for learning
		I generally choose what I study more from the way it fits in with career plans than from my own interests	Need for learning
		My main reason (for) doing this course is that it will help me to get a better job	Need for learning
	Negative Course Evaluation	The learning materials are presented in a confusing way	Wastes time – negative value
		I do not understand a lot of English words in the study materials	Personal Competence – language
		The type of work required by assignments is very different from what I expected	Expectations
		The course is not run at the most suitable time of year	Time Design
		The assignments are too difficult	Personal Competence
		The time allowed for completing the course is too short	Time Design
	English Ability	What grade were you awarded in English Language in the (appropriate) examination	Personal Competence – language
		Please grade your English ability: Writing: Reading: Speaking	Personal Competence – language

**Appendix E: Further Coding Kember's Quotes (Kember, 1999)**

<b>Quote</b>	<b>Scott's Grounded Theory Concept</b>
The kids and I get stressed before exams--I'm separated. (Roberts <i>et al.</i> , 1991,p. 78)	Tension. May be time tension?
Study has priority over my landscaping business, hence income has dropped, which in turn affects my family. (Roberts <i>et al.</i> , 1991, p. 78)	Priorities..
My study doesn't affect them much except when I have to attend tutorials, the other family members will have to take care of my child. Distance learning is better than part-time study for which I would have to ask other family members to take care of the child regularly as the part-time classes used to be held at least one to two times a week. (Hong Kong--Taxation)	Take time from Temporal space
When I am studying at home, my husband has to put on the headphones when watching TV. (Hong Kong--Law)	Managing distractions.
I affect them if I want to study at midnight with the light on when everyone is sleeping. However, this effect is only a minor one as they get used to it. (Hong Kong--Textiles)	Extend-the-day
Oh yes, my husband has to do extra housework for me. (Hong Kong--Student Guidance)	Take time from
School or home. They are good places to study but it is a bit harsh to my children because I won't allow them to come in my room while I am studying. (Hong Kong--Student Guidance)	Managing distractions
I study at home which is the only place I can use. It is difficult to concentrate at home, so I only study when my family members are all asleep. (Hong Kong—Open Learning Institute of Hong Kong (OLIHK))	Extend-the-day

Quote	Scott's Grounded Theory Concept
I used to study in the self-study rooms which are set up by the Regional Urban Council. I do not have other choice of study place because my home is too small for study. (Hong Kong--OLIHK)	
I usually study in the library or in the public study centre. I can't concentrate on my study at home due to my daughter's disturbances, As a matter of fact, I am easily influenced by the surrounding environment. The library environment makes it easier to concentrate. (Hong Kong--Law)	Managing distractions
I study in the office in the early morning time or after working hours. My home is a good place for study but there are a lot of temptations such as TV programmes. (Hong Kong--OLIHK)	Extend-the day. Distractions
Since my home is small and noisy all the time, I always study in the fast food restaurant while having my dinner. (Hong Kong--OLIHK)	Find time
Because it is quiet in the afternoon. This place is good for our group meeting as well because there are four of us living in Shatin. (Hong Kong--Education)	
I study at the canteen in Jubilee Sports Centre. It is in fact a good place for study	
There are also students who allocate both a place and a time-slot for study purposes. I go to the library once or twice a week, usually Saturday or Sunday. I study at home at other times. It is a good place to study at home. (Hong Kong--OLIHK)	Routinise.
I am only able to spare time to study when I am taking the MTR train in the morning and evening, or during the lunch hour break. It is impossible to study at home because I have to take care of my 2-year-old little child. (Hong Kong—Taxation)	Routinise. Priorities

Quote	Scott's Grounded Theory Concept
I study during weekdays so we still can have family days during weekends. (Hong Kong--OLIHK)	Routinise. Plan.
Study plays hell with my sex life! (Roberts <i>et al.</i> , 1991, p. 78)	Social dislocation
Yes, I have a husband only. He tolerates my study--often he says I'm spending more times with my books than him. (Roberts <i>et al.</i> , 1991, p. 78)	Take time from
I used to go out with them for morning tea on Saturday mornings. When there is any class to be held on Saturday, I then have less time to spend with them since I am busy during the weekdays. (Hong Kong--Student Guidance)	Take time from
When I have to work on my assignment, I have to ask them to keep away from me. Sometimes, I feel sorry for my husband because I spend too much time on my work and study. (Hong Kong--Student Guidance)	Take time from. Protect temporal space
I seldom can submit my assignment punctually. Again, every December of the year is the busiest month for the garment business and unfortunately the exam usually falls in the following month, i.e. January. For big volume business companies, we find that it is very hard to find adequate time for revision before the exam. (Hong Kong----Textiles)	Assessment point. Time Design. Structure points. Work takes time from
We usually get all the analyses completed in the morning. If there are problems with the plant we work on those in the afternoon. But if the plant is running smoothly there is often little work in the afternoon. The boss directs the other technicians to do the jobs which need doing, leaving the students free to work on their studies.	Given time



Quote	Scott's Grounded Theory Concept
I also go into work on Saturdays to study. If I stay at home someone always comes round to invite me out for a beer or to play snooker. I also have two children at home who interfere with work. (PNG student)	Distractions. Routinise.
The boss wouldn't even know I'm studying--I use my sick leave to come to residential schools. Roberts <i>et al.</i> (1991)	Steal time
I had to resign from my hospital in ... because they refused to grant me leave to come to residential schools. (Roberts <i>et al.</i> , 1991, p. 77)	Prioritise. Restructuring PCS
Luckily my course is related to my job. My senior colleague always distributes useful counseling handouts to me and keeps me informed of certain useful workshops to attend. I also have my spare time to go over the course materials. (Hong Kong--Student Guidance)	Take time from (self .. spare time)
Most of the time I put the school work in the first priority. Looking at the viewpoint of our school administration, I realise that it is difficult to release me from the heavy workload because it won't be fair to other teachers who have to take over part of my workload. (Hong Kong--Student Guidance)	Prioritise.
I now work for P .... They will not sponsor me. They sponsor sporting events but not education for their staff. I now work 7 days a week which does not leave much time for study. (PNG student)	PCS - full
I didn't get much help from my employer. The work involves traveling round to repair equipment and it's difficult to study when traveling, especially if you have to go into the bush. (PNG student)	PCS – structure points of work.

Quote	Scott's Grounded Theory Concept
My friends do affect my study because they like to invite me to play mah-jong. (Hong Kong--Taxation)	distractions
Yes. I can't reject my friends' invitation to go out as it is rather difficult and childish if I give them the reason that I can't go out because I have to study at home. (Hong Kong--OLHK)	distractions
I have to sacrifice my football time on Sunday mornings because that is now becoming the tutorial time. (Hong Kong--OLHK)	Take time from (self, social)
At first I thought I would be able to keep my social life unchanged, but now I know I have to sacrifice a lot in my social life. (Hong Kong--Education)	Take time from (self, social)
My friends do affect my study in the sense that we can interchange new ideas in the garment field. Therefore, with wider knowledge, we definitely improve our point of view. (Hong Kong--Textiles)	Positive benefit
So far, I feel lucky because I have many friends who are working in the same field as mine. Whenever I encounter any difficulty dealing with taxation, I can always get it solved easily through discussion with my friends. (Hong Kong--Taxation)	Positive benefit
Yes, I felt discouraged and frustrated and often came close to giving it up when I worked on my first assignment. Luckily the support from my group kept me to stay in the course. I knew that I wasn't the only person to have problems in the first assignment, there were the same problems faced by my group mates as well. Now, I do not have the feeling of giving it up since I understand its learning approach ~free thinking. (Hong Kong--Education)	Negative. Positive. Personal Competence – online learning skill

<b>Quote</b>	<b>Scott's Grounded Theory Concept</b>
In fact there are some friends studying the same course with me. (Hong Kong - Education)	
In my social life, to some extent, I will increase meeting with the present classmates but decrease meeting with ordinary friends. I will try to avoid any unnecessary entertainment which is not related to my study. (Hong Kong--Textiles)	Prioritise. Positive

**Appendix F: Coding of Kember's Quotes (Kember, Ying, Wan, & Yung, 2005)**

<b>Quote</b>	<b>Scott's Grounded Theory Concept</b>
<p>As I had four days off last week, I tried to allocate my timeslots so as to satisfy every domain. I attended a forum (for work) last Saturday, visited my old class-mates on Sunday (social), had a meeting with the colleagues in this course to discuss the teaching project on Monday (for study), and treated my family to a big buffet to celebrate the Moon Festival on Monday night (family), and took my driving lesson on Tuesday (self). I think I had a well spent holiday. Honestly, I was a bit exhausted. But I think that's the way I should live my life.</p>	<p>Take time from (self) Juggling</p>
<p>Work is a very important domain to consider before deciding to enrol in a part-time course. However, once the student gets enrolled, this becomes the least important one.</p>	<p>Planning</p>
<p>I had consulted my supervisor before I enrolled in the programme, who gave me positive and encouraging feedback. Study is quite related to my current job, the knowledge learnt or experience obtained could help me reflect and enhance my professionalism in the workplace. My supervisor also commented that I got more insights and my horizon seems broadened to contribute more and better ideas at work. In addition to support in the initial stage, the continuous advice I got from my supervisor further motivated me to integrate work with study in harmony</p>	<p>Positive value</p>
<p>Since I worked on shift duty for the past few years, my boss needed to arrange my duty roster in order to help me to attend all the lectures. It increased the workload for him and caused inconvenience for my colleagues. Although I like that post very much, I have changed to a non-shift post minimize inconvenience for them</p>	<p>Structure points, Take time from (work) - negotiated</p>
<p>Since she had spent only a little time with her daughter, the mother-and-child relationship was not as close as the father-and-child relationship. Sometimes the little girl preferred spending time with her father rather than her mother.</p>	<p>Priorities Social dislocation</p>

Quote	Scott's Grounded Theory Concept
<p>My husband needs to work three evenings per week and I ma teaching an evening course on Friday. Moreover we have a six-year-old daughter who requires much of our attention. My husband and I have to take turns to take care of her activities, homework, etc. It is difficult to fit any more in my timetable. Fortunately, the adult learning classes are scheduled on Tuesday; I can still squeeze myself a bit for the classes</p>	<p>Structure points (family, work) Commitment – family Juggling Full PCS Study – squeezed in</p>
<p>I am very lucky that I have a lovely mother. She supports me very much in my study. Since I am released from all the housework with her help, I can concentrate on my study at home. When I am busy doing my assignments and preparing for my examinations, she always cooks my favourite food to release pressure and turns off television and radio for me to have a silent environment to study. I am sure that my study life would be much harder without her.</p>	<p>Take time from (family) Engaged (with study) Tension Distractions</p>
<p>I have been scheduled to play badminton with seven colleagues from 5.00 to 6.00 p.m. every Tuesday and Friday over the past eight years. We can keep fit and also have a chance to chat and share the pleasant or unpleasant experiences in school. However, my classes are usually conducted on Tuesday. So I have to sacrifice an enjoyable weekly social gathering during my period of study.</p>	<p>Structure points (social, study) Positive benefit (of social interactions) Priorities Take time from (social life)</p>
<p>I must admit the fact that social life is more difficult to maintain after graduation, especially when the largest portion of time and energy of the day is devoted to work. However, most of my friends are engaging in the various modes of self-development or lifelong learning activities. They understand the difficulties to arrange gatherings and are used to the long planning and negotiating period, before any socialising activities can be successfully organised. I am glad that I could also make friends with the colleagues in the course, which I believe, is built by strong group coherence, through collaborative and co-operative modes of learning, which should always be encouraged in part-time study.</p>	<p>Structure points (work) Juggling Positive benefit</p>
<p>To study part-time means you have to sacrifice much time with your family, your social life and even your hobbies. It may be a very high opportunity cost.</p>	<p>Take time from (family, social, self) Cost</p>

Quote	Scott's Grounded Theory Concept
<p>I take months to adapt since I have to adjust my life by going out for more evening, leaving my children for my husband. It is because of interest and motivation is an intrinsic one. Sometimes, when I reflect on my objectives of studying on this course, I become more relaxed and encouraged.</p>	<p>Juggling Take time from (family) Social dislocation Evaluation</p>
<p>It seems besides ... not many classmates talk about the effect of the 'self domain'. I would see it as a very important factor. One has to take the initiative to re-arrange one's life to accommodate the extra workload and demand from the part-time study. It may mean putting aside one's hobbies, sacrifice sleeping and leisure time etc. Without self-motivation (internally, not attributed) even if all other sectors are in a positive status, one may still fail the study. My profession and my major interests have always been about making and watching films. Normally, this has taken up lot of my time. Now I have decided to pursue this course hoping to improve my teaching skills, I have to negotiate with myself the priority between the two different things. I need to give up watching films on Tuesday evening in order to attend classes. I need to postpone some filming projects in order to gain time to study. However, I can't give up everything or I will become out of touch with my profession and also with the industry which will in turn affect my teaching. And this will need a self-negotiation process to maintain the right balance.</p>	<p>Self Restructure PCS, Take time from (self; hobbies and extend-the-day, social,) Propensity to study Prioritise Find time Evaluation Equilibrium</p>

**Appendix G: Team Charter****TEAM CHARTER:**

**I will take an active role in the development of the group knowledge base**

**1. I will communicate regularly and:**

- a. Reply to emails within 24 hours
- b. Inform other team members when I am unavailable for more than 24 hours due to holidays, exams etc

**2. I will communicate constructively and:**

- a. Acknowledge the work done
- b. Focus on the work
- c. Aim to move the work forward
- d. Be optimistic and encouraging
- e. Be respectful and sensitive to the feelings of others

**We will take collective responsibility for the development of the group knowledge base**

**3. We will be self managing and:**

- a. Volunteer for work
- b. Ensure that each note in KF gets at least one constructive response within 24 hours of the note being posted
- c. Hold weekly synchronous meetings to review progress and establish next steps using e.g. WebCT chat/net meeting
- d. Elect a co-ordinator (leader) and rotate the leadership role amongst volunteers (as necessary or every ?? weeks).

**4. The leader will**

- a. Run the synchronous meetings
- b. Send copies of the chat to team members who are unable to attend the weekly meeting.

## Appendix H Best Teams Did This

### BEST TEAMS DID THIS.....

75 virtual teams of learners were analysed for what made them successful and unsuccessful. The best teams were:

#### **Action oriented** – Team members:

- Volunteered for work.
- Acted to avoid/minimise problems. E.g. The time lag of CMC was minimised by a message format of: Do you think 'a' or 'b' is better, I think 'b' is better, because ....

#### **Regular communicators** – Team members:

- Aimed to reply to any message within 24 hours.
- Kept other team members informed of
  - Progress
  - Unavailability (holidays, breaks etc.)

#### **Providers of Feedback** – Team members:

- Acknowledged the work done and gave detailed feedback.

#### **Positive and Focused** - Messages were:

- Focused on the work,
- Optimistic and encouraging,
- Aimed at moving the work forward
- Respectful and sensitive to the feelings of others

**Clear on their Goals** –The team were crystal clear as to what they were trying to achieve.

**Time Managers** – teams planned what needed to be done by when and monitored their progress. Teams

**Rotated the Leadership Role** - whoever could do the job best at the time, became the leader.

Please think about this. **What can you do to help make your group successful?**

Reference: Jarvenpaa, S.L., Knoll, K. and Leidner, D.E. (1998) Is Anybody Out There? Antecedents of Trust in Global Virtual Teams, *Journal of Management Information Systems*, 14, 4, 29-64.



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