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Using a VLE for Adult Distance Learning: the Participant Experience

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Submitted to the University of Dublin, Trinity College,
June 2010

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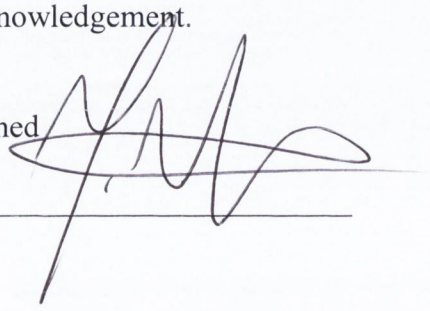
Signed 

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Thesis Summary

In relation to education provision e-learning in all its guises could be described as capturing the zeitgeist of the moment. Home computer ownership, internet connectivity and online use have increased exponentially (Central Statistics Office, 2007). Arguably, much of the debate surrounding e-learning has focussed on the increasing technological capabilities available to society in general and educational providers in particular – in effect we are told that we have entered the 'Information Age' and effectively have become a 'Knowledge Society'. However, one needs to adopt a critical stance and interrogate such claims, particularly from the learner's perspective to see if the reality matches the rhetoric. In exploring the use of e-learning a number of research strands are clearly identifiable. However,

> ...the overwhelming majority of e-learning research to date has focussed on establishing the value of particular e-learning course designs, teaching methods or tutor interventions (Sharpe et al., 2005, p. 3).

Sharpe et al. (2005, p. 1) found that there were very few studies that characterised their research as an expression of a "learner voice i.e. in which the learners' own expressions of their experiences are central to the study". In certain contexts of e-learning delivery this may not be very important. However, any effort to make greater use of e-learning in the delivery of adult learning must surely begin with an acknowledgement that this learner group are already living complex busy lives. In seeking to make the best use of all lifelong learning opportunities the aim of education providers might be better served by adopting a research approach that can 'capture' the way that lifelong learners use e-learning in the context of their lives. This study, adopting an interpretative approach primarily using the diary/interview method of data collection used a longitudinal case study design focussing on the experiences of a group of twelve participants who were part of a class of eighteen social care workers undertaking a part-time BA in social care through a blended learning programme.

The findings were presented into four themes each of them demonstrating the complexity and overlapping nature of the many factors that influence VLE usage by adult lifelong learners. The confluence between technology and the ways and means that the learners negotiated their use of the VLE was very evident. The importance of developing a system

of informal support and an ability to adapt and where necessary circumvent the VLE was evidence of a sophisticated adaptive response mechanism.

Arguably the most decisive finding from that data was the development of adaptive proactive strategies on the part of the OEL participants. While there were many technical issues to be resolved or at least managed these issues interestingly afforded the development of adaptive learning strategies rather than hinder them. In terms of institutional implications from this study the findings are discussed terms of the relationship and interplay between technology and pedagogy referred to as kairos, the need for the development of shared understandings for all stakeholders that acknowledge the complexity of lifelong learners and a change in planning and governance that reflect greater involvement by the learners in matters relating to design, delivery and implementation. In Ireland most if not all third level colleges have some form of VLE (Cosgrave et al. 2008) if they are to fully utilise VLEs to a greater extent to facilitate lifelong learning it is important that they adopt a more inclusive and in the end appropriate approach to the use of VLEs, one that aligns more closely with the learners needs.

The use of VLEs can certainly help with the facilitation of providing more opportunities for adult learning. However, one must be mindful of asking what type of lifelong learning it will be, simply a Transactive exercise and information exchange or a transformative process providing a vehicle for development. This should not imply that they are necessarily mutually exclusive but the reality is that the former is more likely to dominate the later if there is a failure to adopt a learner centred approach. The study concludes that VLEs can indeed facilitate adult learning but the degree to which it is a transformative learning remains unclear. The recommendations, while limited are rooted in the experiences of what was learnt from the learners as such it certainly adds to the validity and worth of the study.

Acknowledgements & Dedication

I would first and foremost like to thank my supervisor Mr. Keith Johnston for his guidance, patience, gentle chivvying and at times fortitude. I am quite sure that sometimes he was close to despair feeling that my chances of ever completing this thesis were as remote as The Arsenal ever winning the UEFA Champions League!

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The participants of the OEL programme who made this study possible and the coordinator of residential care for the area Ms. Maria O' Sullivan.

The senior management team of the Institute of Technology Tralee for their support and encouragement.

To my family in Dublin I would like to acknowledge all the help and support I got from my mother Eileen and my sisters. I would also like to say a special thank you to my Uncle Brian Farrelly and his wife Nuala who put up with me and treated me like a son on all the visits to Dublin. Although dead for nearly six years now I still think of my later father Tommy who helped make me what and who I am and that needs to be acknowledged.

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Fógra
Shortly after submitting this thesis for consideration my aforementioned Uncle, Brian Farrelly died unexpectedly; I would like to take this opportunity to wholeheartedly dedicate this thesis to his memory and our abiding friendship.

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List of Abbreviations

AONTAS	National Association of Irish Education
BA	Bachelor of Arts
BECTA	British Educational Communications and Technology
BTEI	Back to Education Initiative
CAQDAS	Computer Assisted Qualitative Data Software Analysis
CD	Compact Disc
CD-ROM	Compact Disc - Read Only Memory
CEC	Commission on Education and Communication
CEO	Chief Executive Officer
CINAHL	Cumulative Index to Nursing and Allied Health Literature
Cisco	Computer Information System Company Systems
CLA	Computer Literacy and Applications
CMC	Computer Mediated Communication
CMS	Content Management System
COM	Commission of the European Communities
COMETT	Community Programme in Education and Training for Technology (EU)
ComReg	Commission for Communications Regulation
CSO	Central Statistics Office
CSO	Central Statistics Office
C-TAM-TBP	Combined TAM and TBP
DELTA	Development of European Learning Through Technological Advance
DES	Department of Education and Science
eBooks	Electronic Books
Ebrary	Electronic Library
ECDL	European Computer Driving License
e-commerce	Electronic Commerce
EGFSN	Expert Group on Future Skills
E-Learning	Electronic Learning
e-mail	Electronic Mail
ERIC	Educational Resources Information Centre
ESRI	Economic and Social Research Institute
EU	European Union

EUROSTAT	Statistical Office of European Communities
EUROTECNET	European Technical Network
EYLL	European Year of Lifelong Learning
FAS	Foras Aiseanna Saothair (Training and Employment Authority)
FETAC	Further Education and Training Awards Council
GDP	Gross Domestic Product
HE	Higher Education
HEA	Higher Education Authority
HEI	Higher Education Institution
HSE	Health Service Executive
HTML	Hyper Text Markup Language
IALS	International Adult Literacy Survey
ICT	Information Communication Technology
IDC	International Data Corporation
IDT	Innovation Diffusion Theory
IFA	Irish Farmers Association
IRL	Irish Rural Link
ISC	Information Society Commission
ISDN	Integrated Services Digital Network
ISSC	Information Society Steering Committee
ISSC	Information Systems Support Centre
IT	Information Technology
ITT	Institute of Technology Tralee
JISC	Joint Information Systems Committee
JRE	Java Runtime Environment
LCMS	Learning Content Management System
LE	Lifelong Learning
LEX	Learners Experience of E-Learning
LMS	Learning Management System
LP	Learning Platform
LSS	Learning Support System
LTSU	Learning Technology Support Unit
MBA	Masters Business Administration

MIS	Management Information Systems
m-Learning	Mobile-Learning
MLS	Management Learning Systems
MM	Motivational Model
MPCU	Model of PC Usage
MPS Players	Media Players
NALA	National Adult Literacy Agency
NALC	National Adult Learning Council
NBS	National Broadband Scheme
NDP	National Development Plan
NESC	National Economic and Social Council
NGN	Next Generation Network
Nintendo DS	Nintendo Dual Screen
NUD*IST	Non-numerical Unstructured Data, Indexing, Searching and Theorizing
OCLC	Online Computer Library Centre Inc.
OECD	Organization for Economic Co-operation and Development
OEL	Outreach Electronic Learning
OEL	Outreach e-Learning
OLC	Online Learning Centre
OU	Open University
PDA	Personal Digital Assistant
PDF	Portable Document Format
PLC	Post-Leaving Certificate
SAI	Sociology Association of Ireland
SCORM	Shareable Content Object Reference Model
SCT	Social Cognitive Theory
SHA	Trent Strategic Health Authority
SMS	Short Message Service
SMT	Senior Management Team
SPSS	Statistical Programming for the Social Sciences
SRA	Social Research Association
SSI	Social Sciences Inspectorate
TAM	Technology Acceptance Model

TEL	Technology Enhanced Learning
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UBSP	Usage, Benefits, Social and Personal
UK	United Kingdom
VEC	Vocational Education Committee
VLE	Virtual Learning Environments
VTOS	Vocational Training Opportunities Scheme
W3C	World Wide Web Consortium

Abstract

Using a VLE for Adult Distance Learning: the Participant Experience

In the context of delivering adult learning opportunities, Virtual Learning Environments (VLEs) have increasingly been presented as being able to provide a greater range of innovative learning opportunities both for campus based and distance students. While VLEs may well offer campus based students an added dimension to the learning their use as an instrument of lifelong learning for adult distance students appears to be somewhat short of the rhetoric at times.

Using a triangulated approach to data collection the study adopted a longitudinal exploratory case study design covering time span of two academic years. Although a largely qualitative approach underpinned this study, the research where appropriate utilised quantitative data. Attempting to 'capture' the experiences of the learners and thus maintain ecological validity the principal data collection methods used were participant diaries in conjunction with subsequent semi-structured interviews utilising the diary/interview method.

The research findings indicated that the manner in which the VLE (in this case WebCT/Blackboard) was used varied due to a number of facilitating conditions or barriers. Technical and non-technical issues impacted heavily on the learner experience. However, another finding was that the adult learners were, through mutual support networks and the proactive strategic use of technology able to negotiate many of the issues and problems placed in the way.

For many colleges the relatively small number of non-standard distance students that they have can result in the marginalisation of these students due to the fact that the bulk of the services and pedagogical approaches within the colleges are principally designed with standard students in mind. Adult learning can be greatly facilitated by the use of VLEs providing the necessary commitment and infrastructure is in place.

VLEs can offer an innovative, interactive and meaningful learning environment. They can particularly for the distance adult learner also baffle, annoy and mystify. In the case of this particular study WebCT/Blackboard arguably achieved both ends of this spectrum. The adult learners in this study demonstrated great adaptability in negotiating their use of the VLE, consideration needs to be given to a planning and implementation process that recognises and harnesses this potential rather than corralling it.

Chapter 1 – Introduction and Thesis Outline

Background

As a strategy for the widening access to education, the concept of e-learning has become one of the central tenets of education provision and the so called 'knowledge society'. The proponents of e-learning argue that it can facilitate continuing education to a range of people who for varying reasons cannot access mainstream educational opportunities. Much has been written about the potential of e-learning to support continuing education, professional development, and to radically transform educational delivery, particularly for remote[1] based students. Conversely, others have highlighted

> ... e-learning's unfulfilled promises or its inability to deliver the expected learning experiences. In acknowledging the unfilled promise, it is vital to highlight that until recently the enabling infrastructure (i.e. ICT and broadband) to engage in innovative e-Learning was not fully in place (National College of Ireland, 2004, p.14).

In 2004, given the extremely buoyant state of the Irish economy at that time the target of full nationwide broadband coverage by 2007 seemed eminently possible. However, the planned rolling out of broadband to all corners of Ireland has as yet to reach fruition (ComReg, 2009). In addition to classifying different groups within society along socio-cultural, ethnic and socio-economic lines a new social division has emerged in recent years – the digital divide (McCaffrey, 2003). This division is characterised by access to an inability to access, possess or use information communication technology (ICT). The very e-learning opportunities that are intended to widen participation and combat social exclusion can in fact compound rather than ameliorate social inequalities (Warschauer, 2004). While national and international organisations and governments may make pronouncements about the democratisation and wider availability of learning

[1] Not living in close proximity to places of education- further, adult or third level

opportunities afforded by e-learning, the realities may not match the rhetoric. E-learning or more specifically in this instance virtual learning environments (VLEs) would seem to offer a way to create a meaningful learning environment to those who are unable to attend full-time campus based education but these opportunities as will be explored are not the same for different groups, particularly adult learners and even more pointedly in the context of this study, distance adult learners living in the South West of Ireland.

Context of the Programme:

The research undertaken was based on an examination of an outreach e-learning programme for social care workers engaged in childcare work. It could be argued that the genesis of the Outreach E-Learning (or OEL) programme that eventually came to be the case study which formed the basis of this study originated in a change of context wrought by legislative and cultural changes and made possible by technological improvements in information computer technology (ICT). In Ireland, social care work is a relatively new professional area. Residential childcare work, the forerunner of social care was historically an undervalued activity in Irish society. A momentum for change in the childcare system has gathered pace with the withdrawal of religious orders from the provision of such services.

The last number of years has seen a plethora of stories concerning institutional abuse come to the fore (Madonna House, Goldenbridge, and the Industrial School System). Whilst stories concerning the abuse of children tend to dominate, concerns around the mistreatment of elderly people in state provided institutions have also begun to enter the public arena. In no way meaning to minimise the seriousness of these incidents, there has been a tendency to sometimes focus on the assumed shortcomings of residential childcare staff by focusing on the lack of qualified staff in the unit involved.

One important initiative that has attempted to standardise the quality of care was the inception of the Social Services Inspectorate (SSI) in 1999. Since its first report in 2001, the SSI has consistently noted (SSI, 2001; 2002; 2003) that; over half the staff in child residential units are unqualified. However, one should be wary of attributing too much weight to these findings without first setting them in context. Many of the staff involved had vast experience, and whilst not having the belatedly sanctioned qualifications, many of the care workers were qualified teachers, nurses or social science graduates.

The publication of the Health & Social Care Professionals Bill, 2004[2] placed further responsibilities on state service providers to up skill existing professionally unqualified care staff. The bill allowed for the establishment of the Health and Social Care Professionals Council. The object -

> ...of the Council is to protect the public by promoting high standards of professional conduct and professional education, training and competence among registrants of the designated professions (Government of Ireland, 2004, p.11).

The bill specified that transitional[3] arrangements would apply to unqualified existing practitioners. Facilitation of these arrangements will undoubtedly impact on service providers who are faced with the probability of having to up skill quite a large number of care workers in a relatively short time, whilst at the same time maintaining high levels of care. The introduction of the Bill and its subsequent enactment[4] gave the project an added impetus. In early 2005 the Institute of Technology Tralee (ITT) were approached by the Health Service Executive (Southern Region) residential childcare services with a

---

[2] The Bill subsequently became enacted in 2005. The Bill/Act required the establishment of a Health and Social Care Professionals Council that was to oversee the formation of twelve registration bodies including a professional registration body for Social Care Workers.

[3] The exact nature of these arrangements were left unspecified as these would subsequently be designed by the desginated competent body.

[4] Under the terms of the Act, the Health and Social Care Professionals Council was formed in March 2007. However, as of mid 2010 the registration body for Social Care has yet to be implemented.

view to exploring the possibilities of designing and delivering a possible BA in Social Studies (Social Care) programme that would take account of their corporate needs and responsibilities in addition to proving a meaningful and achievable educational experience for the eventual students.

The Consultation Phase

The programme explored here had had two interlinked elements all of whom had to be consulted. These elements were: (1) The Institute of Technology Tralee – Development Office, the WebCT coordinator, Lecturing Staff and Department Head from the Department of Humanities and Social Studies (2) The HSE (South) -Residential Care Senior and Unit managers and care staff. The project team and the members of the Health Service Executive (HSE) were faced with the problems that many of those involved in adult learning are faced with, in short, trying to balance a number of considerations whilst at the same time trying to deliver a meaningful programme.

Walking a fine line between implementing a very specific 'training' course and maintaining an 'academic' tradition is no easy task - arising from the collaborative review of the course content some of the material was re-aligned to take account of the theory and practice[5] needs of the service providers. However, the core academic structure and content was maintained in order to ensure that the course's integrity was not compromised. Major re-alignment of the existing BA in Social Studies (Social Care) course would have necessitated academic council approval for what would essentially have been a new course, which would have necessitated greater use of resources and

[5] Understandably the focus of HSE childcare residential care services was on young people. However, Social Care practicioners also work in in such areas as physical and intellectual disability, older persons, refugees and asylum seekers. Consequently, while the course case could be somewhat tailored towards working with young people it also retained content relevant to working with other target groups.

concomitantly delayed the process. Understandably, those who are faced with the day-to-day management of the residential units at the coalface so to speak were concerned with the possibility of losing a large number of staff on a regular basis. A collaborative review of the course content took place to ascertain the areas of the current course that unit management staff felt could be further emphasised or reduced. In addition to the existing course – new topics for inclusion were also suggested; where these topics could not be easily accommodated within the course structure, provision was made for specific seminars and/or workshops.

Whilst a number of discussions had previously taken place with senior management, convincing hard-pressed unit managers and hesitant staff that this programme would be of benefit to them was not a straightforward task. This is not to suggest that unit management staff did not see merit in the upskilling of care staff; rather they were understandably fearful that the burden for the facilitation of staff being released would rest with them. The Institute's (Tralee IT) management were concerned that the programme would contain sufficient content and student effort[6] to (a) meet the student's academic needs and (b) to satisfy academic criteria that the resultant qualification would meet the required standards. For example, while the potential students had extensive experience in the field of social care and consequently certain elements of some of the modules would be familiar to them. For example, some of the modules focus on residential care; care planning, legal aspects of care, report writing, personal and interpersonal skills and consequently less time had to be allocated than might otherwise be allocated in the case of full-time students. However, even with these considerations the OEL students would still be required to undertake a programme that met the same

[6] The full time version of the BA in Social Studies (Social Care) entails approximately twenty two hours per week college attendance in year one and approximately eighteen to twenty hours per week in years two and three.

learning outcomes and was comparable in terms of academic effort to the full-time BA in Social Studies (Social care) course. The suggested use of a substantial e-learning element in conjunction with an element of face-to-face classroom teaching helped alleviate these concerns provided that the course still maintained sufficient robustness in terms of effort, content and learning outcomes being met. The fact that the Institute already utilised a virtual learning environment (VLE) WebCT[7] meant that no significant outlay was required in terms of software acquisition.

Notwithstanding the availability of an existing VLE, academic staffing commitments were raised as a concern with regard to two main issues although they both related to time as a resource. Firstly, there was varying levels of ability[8] and familiarity amongst the lecturing team in terms of online pedagogy and general computer skill levels. This situation could only be resolved by allocating the necessary time and training resources to upskill the course team. Secondly, in order to maintain an interactive engaging learning environment the course site needed to be maintained in terms of such tasks as: putting up new course content, facilitating communication (both synchronous and asynchronous), setting and administering assessments to list just a few. Given that the social care course was premised[9] on the development of 'the reflective practitioner', interaction was deemed to be an important component in the course's approach and philosophy. In this sense it is important to note that the e-learning element was not simply chosen to facilitate the student effort requirements. The choice to maintain a

[7] WebCT was the system that the college was using (and continues to use) in 2005, the company was subsequently taken over by Blackboard in 2006. However, the phrase that was embraced by all the participants remained WebCT consequently the term WebCT is used throughout the thesis.

[8] The ability to use general software packages such as Microsoft Word and Powerpoint varied between the staff team , however all had some degree of familiarity with these packages. The use of e-mail has become an integral part of the working day in ITT so the use and familiarity with e-mail as a fom of communication presented no issues. However, the level of knowledge and ability to utilise WebCT ranged from non-existent levels of prior use to an intermediate level of use that concentrated on using WebCT as a remote content repository and some asynchronous communication (discussion boards and/or e-mail).

[9] Regardless of the form of delivery i.e. full-time attending or OEL.

strong interactive nature also reflected the course team's vision and understanding of the role that the education process plays in the development of the learner in general and the reflective social care worker in particular. In this instance the need to allocate sufficient lecturer time to maintain the module point was particularly relevant to low technology-constructivist courses (such as the OEL) where interaction relies on educator input as much as technology - consequently this category "probably represent[s] the greatest workload for educators" (Weller, 2002, p.152). As part of the design phase and given the centrality of ICT to the course, potential students were surveyed (see appendix A) with regard to their knowledge levels of the three most commonly used Microsoft applications - Word, Excel and PowerPoint. The survey also sought to ascertain their ability to use the Internet with reference to use of search engines, retrieval and saving of web content, e-mail, using attachments with e-mails and prior participation in online discussions. On the basis of the information supplied, a number of students were facilitated by the HSE in undertaking a basic computer skills course prior to commencement of the programme.

The Resultant Programme

Similar to the full-time (table one) version of the course the second and third years of the course were split between one semester of academic work and one semester of work placement. In both versions of the programmes the course structure was thus:

	Semester 1 (September – December)	**Semester 2 (January – May)**
Year One	Academic Course Work	Academic Course Work
Year Two	Academic Course Work	Work Placement
Year Three	Work Placement	Academic Course Work

Table 1 BA in Social Studies (Social Care) Course Structure

Endeavouring to meet the needs of all the stakeholders, and maintain academic credibility for the programme it was decided to offer the existing BA in Applied Social Studies (Social Care) through a blended learning approach. This approach incorporated face-to-face class contact that was offered in a mix of college and outreach locations combined with utilisation of an e-learning element. The college face-to-face sessions were only delivered at the start of each year; primarily the class based sessions were held on an outreach basis – hence the name of the programme the Outreach E-Learning or OEL for short.

The resultant OEL programme[10] therefore incorporated the following elements:

Year		Class Contact	VLE Element
1st year	September 2005 – May 2006	Induction week Nine face-to-face blocks of 4 days per block	A self-directed learning element facilitated through the Internet – nominal student effort calculated at 56[11] hours per month
2nd Year	September 2006 – December 2006 (Academic Component) January 07- May 07 (Work Placement Element)	Induction session Four face-to-face blocks of 3 or 4 days per block	A self-directed learning element facilitated through the Internet – nominal student effort calculated at 52 hours per month
3rd Year	September 2007 – December 07 (Work Placement) January 2008 – May 08 (Academic Component)	Induction session Four face-to-face blocks of 3 or 4 days per block	A self-directed learning element facilitated through the Internet – nominal student effort calculated at 46 hours per month

Table 2 Outline of OEL Structure

[10] A detailed outline of the monthly module work requirements is provided in tables ten ,eleven and twelve in chapter four.

[11] Nominal student effort intended to approxiamte to class the contact time/effort of full-time attending students.

Overview of the research

The Research Approach

The 'conceptual[12] map of the e-learner's experience' (Joint Information Systems Committee (JISC), 2006) provided a most informative starting point both for subject matter and methodology readings that subsequently informed the rationale and the research approach for the study. The provision and use of e-learning in general and VLEs in particular has a relatively short history. Consequently, there remains (in Ireland at least) many areas that are under-researched (National College of Ireland, 2004; Beetham 2005). The JISC's 'e-Learning and Pedagogy' strand incorporates two distinct but interrelated areas of interest.

> Designing for Learning' explores the design of learning activities and programmes to make effective use of e-learning systems. 'Understanding my Learning' explores learner participation in and experience of e-learning, taking into account activities such as planning and reflection that cut across individual programmes, as well as participation in learning tasks and assessments (Beetham, 2005, p. 84).

The 'understanding my learning' is a strand of research that has gained increased prominence in recent tears shifting the interest from functionalist evaluation studies to understanding the manner in which learners utilise technology particularly in the context of an already busy life (National College of Ireland, 2004). Aside from the research agenda shifting, the participant centred approach is something of interest to the author and philosophically the author would generally adopt an interpretative approach to research.

Due to the holistic nature of qualitative/interpretive research, investigations related to this methodology are often connected with methods such as in-depth interviewing, and the collection of relevant documents. Ernest (1994, p.25) explains that 'the interpretative

[12] Map based on Entwistle (2002) available from: http://www.ed.ac.uk/etl/docs/ETLreport1.pdf

research paradigm starts from an opposite position (bottom-up), and explores the unique features and circumstances surrounding a particular case'. This feature of the interpretive paradigm is useful as it allows the participants to have an input into the research process.

Research Question/s

The adoption of one paradigm in comparison to another influences and shapes the manner and type of research questions that a study adopts (Crotty, 2005). As previously outlined, this research was underpinned by the interpretative approach to research with a concomitant commitment to placing the learners at the centre of the research process. Unlike the quantitative objective approach where the use of a testable hypothesis influences the type and nature of the research questions the interpretative approach adopts exploratory type questions. From an exploratory viewpoint the OEL programme offered the opportunity to "ask how do participants 'manage', 'deal with' or 'cope with' situations" (O' Donoghue, 2007, p. 33). In comparison to other programmes where the use of VLEs is often used as an adjunct or support to the main face-to-face contact the VLE in this programme occupied a central component of the teaching and learning delivery mechanism accounting for approximately seventy percent of the expected student effort. As such, the extensive use of the VLE in such a blended learning programme offered a very useful opportunity to explore how adult learners used VLEs as part of a formalised learning programme over a period of time.

If VLEs are to be used to greater effect in facilitating a wider range of learning opportunities to a wider range of people it is very important that those who design and deliver education programmes should have a well developed understanding of the ways that adult learners actually use VLEs. While the research process (including a review of

the literature) has informed and guided the study this study was aimed at exploring (without prejudice) how the learners themselves understood and negotiated their use of the VLE. Whilst acknowledging that from an interpretative research approach the framing of questions should not preclude the researcher from subsequently amending (in the light of developments) their question/s the primary aim was to answer this question: *In the context of a blended learning programme what were the experiences of adult learners using a VLE?* Focussing on such a broad question was made easier by employing a number of sub-questions:

1. What beliefs & intentions do adult e-learners display?
2. What learning strategies do adult e-learners display and/or utilise?
3. What coping/management strategies do adult e-learners display and/or utilise? – How do they negotiate the course requirements? – Do the learners utilise and engage with the course in the way that was envisaged by course designers?
4. What are the efficacious characteristics of an adult learning programme using a VLE?

Initially the questions were framed within the context of the participants being lifelong learners as opposed to being adult learners. In this sense the term lifelong learning (although the term itself is certainly open to debate and is discussed in greater depth in chapter two) was taken to imply that learners engaged in learning primarily for their own sense of personal fulfilment being driven by intrinsic rather than external factors such as monetary reward or promotion. However, while the concept of lifelong learning certainly provided part of the context to the study and thus needs to be explored, the primary intention of the study was not to ascertain if the participants were truly lifelong learners (although the issue is subsequently discussed in chapter five in light of the data generated). First and foremost the study's aim was to explore how a group of adult

learners used a VLE as an integral component of a blended learning degree programme. Therefore, the term adult learner is used in preference to lifelong learner. Notwithstanding this debate it is important to note that in this study the term adult learner is used in the context of an adult undertaking a sustained formal accredited programme rather than an adult undertaking shorter adult education courses such as hobby classes, basic computer classes and so on. However, it is also important to note that the blanket term 'adult learner' should not necessarily homogeneity; this particular group comprised a wide range of people with different abilities and motivations some of whom could be described (as discussed in chapter five) as lifelong learners.

Research Design and Methods

As this study was primarily interested in exploring the lived experienced of one specific group of learners, a number of the benefits of the exploratory case study approach as identified by Burns (1990, p. 366) were especially relevant. Amongst the relevant benefits he identified are:

- "case studies can generate anecdotal evidence, which may be used for illustrative purposes"
- "They can refute generalisations" and
- "The case study is the preferred option when 'pertinent behaviours cannot be manipulated"

As the course was delivered over a period of three years the case study was able to incorporate a longitudinal aspect to the study thus enabling an ongoing exploration of their experiences rather than a more limited cross-sectional approach.

The study adopted a triangulated approach to the collection of data using different methods and from different sources (Bryman, 2004). The author's diary/log was used as an element of the triangulated approach to data collection however the primary research

methods chosen for this study was solicited participant diaries in conjunction with a series of semi-structured interviews. In this manner the study adopted an approach similar to the 'diary/interview' method employed by Zimmerman and Wieder (1977) and to a lesser extent the 'interview plus' employed in the LEX study (Creanor et al., 2006) where the diaries are a source of data in their own right but also provides a stimulus that encourages further discussion and reflection.

The Research Process

The author's role in the process (initially this role owed more to accident than design) was effectively one of joint course designer and coordinator although there was no such formal designation. The close proximity to the course and the participants offered an excellent opportunity to explore the learner's perceptions of using a VLE over a prolonged period of time. The participants had completed the first year of the programme when the research phase began; nonetheless this still offered the opportunity to investigate their use of the VLE over a sustained period of two years. Although VLEs have been used to support students on placement (McGugan and Peacock, 2005) as well as supporting them in class based activities, in the case of the OEL programme the VLE was not used as a support or teaching aid while the students were undertaking their work placements. Consequently, the actual periods of the research occurred over two distinct semesters. The first semester that was researched as indicated in table one occurred in the first semester of the second year of the OEL programme covering the months September 2006 to December 2006, this period is hereafter referred to as semester one. The second period of investigation was the second semester of the third year covering the months January 2008 to May 2008 hereafter referred to as semester two. The interim period of one year while on work placements gave the author an opportunity to process

the data and begin to draw some tentative findings which could be used to articulate and structure the subsequent period of research in semester two.

Thesis Outline

Chapter Two – Review of the literature

This chapter explores a number of issues as they relate to adult and lifelong learning, the knowledge society and e-learning and in turn VLEs. Understating that there are different perspectives is important as one needs to appreciate that the acceptance or rejection of one educational perspective in preference to another can result in a different approach to the delivery and hence a different rationale or purpose to education. The important issue of technology acceptance by the learner is also discussed as a propensity to accept or reject technology is highly contextualised dependent as it is on such issues as prior experience, physical access and provision and availability of technology.

Chapter Three – Research Design and Implementation

The third chapter describes and provides a rationale for the chosen research methods and procedures employed. The methodological approach utilised a longitudinal exploratory case-study design spread over a two-year period involving initially twelve participants for the first year of the study but eventually finishing with eight participants. The large-scale use of diaries in social research while not uncommon is still a relatively underused research method especially when as argued in this chapter they can offer a great deal of ecological validity especially in comparison to other research methods. The diaries were used in conjunction with semi-structured interview in a method referred to as the 'diary/interview method (Zimmerman and Wieder, 1977). In generating such a large data

set the storage, management and analysis of data was greatly assisted using the computer assisted qualitative data analysis software package commonly referred to as NVivo was employed. While NVivo proved to be very useful in this study the use of computerised qualitative data analysis packages is not without its detractors therefore a large discussion section on its uses is incorporated into this chapter. Whilst the role of the teacher/researcher is a well established approach in educational research one cannot ignore that there is an imbalance in power relations between teacher and student (Lichtman, 2006). Although this situation may be less polemic in terms of the relationship between an adult lecturer and an adult learner, this ethical issue needs to be acknowledged and addressed, and consequently this issue is discussed at some length in the chapter.

Chapter Four– Data Presentation

As this study adopted a case study design it is important to first contextualise the data (Sarantakos, 2005) and thus this chapter begins with a detailed outline of the various stakeholders and the OEL programme. Research findings are often divided into qualitative and quantitative sections. However, the author believes that, for this study, the most appropriate presentation of the material is to present the findings in a thematic manner. Using the flexible qualitative model of coding, an approach that while drawing from elements of grounded theory also acknowledges that it does not enter into the coding process without some preconceived ideas. The themes addressed in this study arise from the issues highlighted in both the literature review and the data generated from the study. The findings were thematically presented under the headings of: (i) Background & antecedents (ii) Difficulties & Issues (iii) Activities & Usage and (iv) Adaptation.

Chapter Five – Discussion

As previously noted the management and analysis of the data set was aided through the use of NVivo. Nonetheless, while the computer can take much of the drudgery out of coding it is still a time-consuming and iterative process. The discussion chapter in bringing the study towards a conclusion attempts to draw out the significant lessons that emerged from the data. The sub-questions as outlined earlier in this chapter provide the overall framework for this chapter focussing as they do the beliefs, intentions, strategies and activities that the adult learners displayed. Of particular importance is the discussion that builds upon the theme of adaptation highlighted in chapter four. The chapter concludes with a discussion regarding what characteristics e-learning course designers, providers and educators might incorporate into future provision with regard to the following: the relationship between pedagogy and technology referred to as kairos; planning and governance as it pertains to course planning, support and delivery and the development of a deeper and more responsive understanding of the complexities faced by adult learners.

Chapter Six – Conclusions and Recommendations

It is the responsibility of a researcher to take ownership of his/her research. Merely presenting material as if it exists in vacuum, devoid of context and possible implications are to complete only half the research process (Blaxter, 2001). This chapter pulls together the various threads running through the thesis in terms of learning from the experiences of the OEL learners. The use of a VLE in this course afforded a group of adult learners the opportunity to form a community of learners, acquire new skills, acquire a qualification and along the way develop as both professionally and personally. Utilisation of a learner centred approach afforded the opportunity to view the use of

VLEs from another perspective which ultimately led to a number of recommendations that whilst relatively modest are rooted in reality. Three of the four recommendations (based on the experiences of the OEL learners) focus on providing practical responses to the practical issues and problems faced by adult distance learners: (i) incorporation of mobile communications technology into VLE course delivery, (ii) greater integration of online library facilities into the course and the adoption of the concept of the embedded librarian and (iii) the provision of dedicated VLE support teams. The fourth recommendation calls for the continued and expanded case study approach to exploring the utilisation of e-learning in general and VLEs in particular by adult distance learners so that the online learning experience might be further improved.

Chapter 2 – Review of the Literature

Chapter Outline

In such an extensive piece of work it is very helpful to provide the reader with a framework or structure, thus each section has a brief summary of the main points before proceeding onto the next section. Although the terms adult learner most accurately describes the group there is no denying that in terms of providing the policy and cultural context to adult and continuing education lifelong learning has in the past twenty five years provided an important backdrop and rationale to all education programmes. As such it is very important to describe the macro educational context to the OEL programme and thus the chapter begins with an examination of the debates surrounding the nature and purpose of lifelong learning. Clearly the focus of this reserach is how adult learners utilised a VLE in their study and therefore it is also important to visit the policies and debates surrounding the provision and realisation of widespread information technology infrastructure and in particular the provision of e-learning opportunities. The chapter finishes with an examination of the provision of e –learning through the use of VLEs as either stand alone online platforms and as part of blended learning programmes such as the OEL programme which forms the basis of this study.

Context

The use of technology in education does not occur in a contextual vacuum. Its conception, design, implementation and usage both drive and reflect the wider social, cultural, economic and technological debates of the day. Both as concepts and as policies, lifelong learning and the e-learning have become closely associated with modern understandings of what, when, how and where learning opportunities can be

provided. However, their widespread use should not imply that there is universal acceptance or a common shared understanding of what either concept incorporates.

For example, the underpinning rationale of lifelong learning occupies a continuum ranging from the view that lifelong learning is a transformative activity where the development of the learner and in turn society is the primary aim of education (Mezirow, 1991; 2000). At the other end of the continuum is the argument that education serves a function: the training citizens and workers in order that the state and the economy flourish. Clearly the acceptance of either position will result in very different education systems each with their own aims, objectives, expectations and responsibilities. Likewise, the term e-learning encompasses a diversity of meanings: e-learning is not a single methodology, technology or technique; rather it can take a wide variety of forms depending on the context of the learning (Universities Ireland, 2004).

Lifelong, by definition implies a timeframe across the whole lifespan including young children it is more often associated more closely with the educational participation of adults. The 2000 White Paper on Adult Education (Government of Ireland, 2000, p. 32) envisages lifelong learning being part of a "continuum of education from the cradle to the grave". Whilst acknowledging that lifelong learning does of course incorporate young people, this chapter will concentrate on mature participation in education.

Lifelong Learning – Who's needs?

A liberal or humanist education is usually taken to mean what Cardinal Newman embodied in his *The Idea of a University*—an education that cultivates and disciplines the mind and is to be pursued as an end in itself; this is in contrast to a 'mechanical' education whose purpose is to be practical or useful, that is to serve some other end

(Newman, 1982, as cited in Miller, 2007, p.184). Perhaps somewhat loftily, Oakeshott argues that the value of a classical-humanist education is that it initiates students into "an intellectual, imaginative, moral and emotional inheritance", the final result being the development of self-knowledge and understanding of the human condition (Oakeshott, 2000 p. 69).

Conversely the Managerialist/Functionalist agenda, which may be driven by industry and the economy, is to guarantee the survival, growth/profitability of an organization and to satisfy the immediate demands of customers. The functionalist understanding of education envisages a Parsonian role for education as social process for the transmission of societal norms and values. This process is inherently beneficial for the individual and for society as both benefits from a stable framework within which each element knows their place and should act accordingly and be rewarded accordingly.

However, this perspective is not without its detractors, least of all those theorists from the various hues of the Marxist perspective. Theorists such as Louis Althusser, Samuel Bowles and Herbert Gintis argue that far from being universally and inherently beneficial, the modern education system acts in such a manner so as to benefit and maintain capitalist economies and as such the resultant curricula and forms of delivery are tailored to economic and not individual needs. From Bowles and Gintis' (1976) perspective there is a 'correspondence' between the way education is delivered and the needs of capitalism, thus "education is treated as an agency of supply of appropriately trained manpower, and the needs of the economy feed back to organise the structure of the education system" (Demaine, 2003, p.128). The subsequent analysis of lifelong learning's underpinning rationale acknowledges that lifelong learning is a contested

terrain along a continuum ranging from humanist to functionalist understandings of the role of education in general and lifelong learning in particular.

The EU Employment and Labour Market Committee's definition of Lifelong Learning was adopted by the National Economic and Social Council (NESC): "all purposeful learning activity, whether formal or informal, undertaken on an ongoing basis with the aim of improving knowledge, skills and competence" (NESC, 1999, p. 170). It goes on to extend the definition beyond concerns with employability by further stating that "it considers Lifelong Learning to be essential for personal fulfilment outside the labour market as well" (NESC, 1999, p. 210). This is not to imply that definitions of lifelong learning are not problematic, in fact as Coffield (1999, p.487) notes: "lifelong learning appears in the literature and in political discourse in a bewildering number of different guises". Some of these guises can include: (a) an agent for change, (b) a buffer against change, (c) a means of increasing economic competitiveness, (d) an arm of social policy as a means of combating social exclusion and (e) a vehicle for personal development (Coffield, 1999). As can be seen from Collfield's list, the five guises can be said to fit into different junctures along the aforementioned continuum of the roles and rationale/s for lifelong learning. As such it provided a useful reference point with which to gauge the extent to which the OEL participant's experiences constituted adult learning or lifelong learning which is subsequently discussed in chapter five.

Politicians, policy makers and opinion formers constantly refer to the need for the development of a culture of Lifelong Learning, often without a clear understanding of what it is they are actually referring to. Oliver notes that

> ...educational concepts which are in widespread use during any particular period are often of interest from a philosophical point of view because they tend to be used rather

> uncritically, and without the precision of thought which may accompany the use of a more uncommon word (Oliver, 1999, p.1).

As Oliver (1999, p.1) argues: because of the "frequently uncritical use of the term there is a risk that it will lose any sense of significance ...thence to be judicious in its employment". The development of any policy at national and supranational level rarely follows a neat sequential pattern. It is frequently characterised by a series (of sometimes seemingly disjointed) reports, task forces commissions, investigative committees and government white papers with lifelong learning being no different.

Lifelong Learning – Europe

The EU Commission, as part of its Year of Lifelong Learning in 1996, published its Strategy for Lifelong Learning where is outlined the case for the creation of a learning society. The same year the Organisation for Economic Co-operation & Development (OECD) published Lifelong Learning for All. To a great extent, Lifelong Learning has gained prominence in European policy "... not least through the advocacy of the OECD and the European Commission to become, by the turn of the century, almost ubiquitous in the developed world" (Green, 2002, p. 612). The 1996 European Year of Lifelong Learning (EYLL) demonstrated "how much interest and commitment exists at all levels for lifelong learning, and this helped to influence policy thinking in Member States" (COM, 2000, p.6).

At the Lisbon European Council, March 2000, the role of education as an instrument for social cohesion and improved economic power was recognised with the Council's adoption of the following mission: "to become the most competitive and dynamic knowledge-based economy in the world, capable of sustained economic growth with

more and better jobs and greater social cohesion". As such, the Lisbon Declaration makes explicit the link between education and the personal and economic development of the union, its member states and its citizens. This commitment was further enshrined when the Stockholm European Council, in March 2001 agreed three strategic objectives and thirteen associated objectives, one of which was to "facilitate the access to Lifelong Learning to all Europeans at all ages".

In February 2002, the EU Council of Ministers of Education agreed a joint detailed work programme for implementing the objectives of education and training in Europe by 2010. In March 2002, the Barcelona European Council endorsed the European Commission's overall strategy to guide member states' lifelong policies with the aim of producing a community that possessed a world quality reference by 2010. This strategy included a total of 13 specific objectives in the field of education policy within the framework of the three major goals:

- To improve the quality of the education systems
- To ensure that they are accessible to all
- To open up the European education systems to the world

(Barcelona European Council, 2002)

This resolution established Lifelong Learning as a guiding principle for the development of training and education policies of the EU. As such, it should inform and underpin any education initiatives undertaken by any member state.

Lifelong Learning – Ireland

In Ireland, Lifelong Learning 'emerged' as a central theme in the Report of the Commission on Adult Education (Government of Ireland, 1984). However, given the financial constraints on the economy in the 1980s, this document remained little more

than an aspirational statement. No doubt, the startling results in the OECD's Adult Literacy Survey (1997) influenced policy makers to take action. This notable publication advanced the cause of lifelong learning in Ireland, highlighting that the Irish data showed 25% of the Irish adult population scoring at level[13] one (the lowest level on the scale). This concern was echoed by the International Adult Literacy Survey (IALS) report itself when it stated: "it is a matter of great concern that those people involved whose literacy skills were weakest were least likely to be involved in any education and training" (Morgan et al., 1997. pp. 99-100). For a country that had long prided itself on possessing a well-educated workforce, and in fact, had used this as a strong selling point to potential investors, the impact of these findings cannot be overstated.

The White Paper on Education, Charting Our Education Future (1995), referred to the need to promote "Lifelong Learning and continuous retraining and updating of skills" (p. 79). The theme of Lifelong Learning was further advanced by the 1998 Green Paper (Adult Education in an Era of Lifelong Learning) and reached fruition as full government policy with the publication in 2000 of the White Paper on Lifelong Education. The White Paper on Adult Education (2000) sets out very clear objectives to promote education for life. These objectives aim to improve learning, from basic literacy ability to improved access to third level education. The 2000 White paper advocated a programme of adult education within an overall framework of lifelong learning, a framework that consisted

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[13] Level 1: People who score this level can perform only at the most rudimentary literacy tasks, that is; those that require the reader to locate a single piece of information in a text, where there is no distracting information and where material is laid out in a manner which facilitates selection of specific information. (Corridan 2002:60)

of six priority areas: Consciousness Raising, Citizenship, Cohesion, Competitiveness, Cultural Development and Community Building.

The shift in thinking at European level was reflected in Irish education policy. The lifelong learning perspective allowed Adult Education to take on a new role and since early 2000 there has been a sea change in terms of Adult Education policy. In response to EU objectives for lifelong learning and social exclusion, and the "imperatives of the government in preparing a workforce and educated citizenry to sustain such high levels of economic performance" (Murphy and Coughlan, 2003, p. 242) the Irish Government undertook a number of immediate initiatives. Murphy and Coughlan (2003, p. 242) provide a useful outline of these initiatives:

- Opportunities, Challenges and Capacities for Choice (Department of Taoiseach - NESC, 1999): 'This report, produced by the National Economic and Social Council, also places emphasis on lifelong learning and makes a number of relevant recommendations ...improved system of certification and accreditation ... expansion of pathways for education and training progression'.
- Qualifications (Education and Training Act (1999): 'established a National Qualifications Authority ... responsible for establishing a national qualifications framework... Fostering appropriate progression pathways and establishing a diversity of delivery mechanisms'.
- National Development Plan 2000-2006 (Government of Ireland, 1999): This 'plan reflects the Irish Government's and the European Commission's twin objectives of economic competitiveness and social inclusion'. An important tenet of this plan was the allocation of £95 million (approximately €121 million) to the 'Third-Level Access Initiative, which is geared towards the development of outreach and support programmes for students from disadvantaged backgrounds and mature students'.
- National Employment Action Plan (Government of Ireland, 2000a): 'The plan has a particular focus on assisting the unemployed to return to work and increasing labour force participation in general. Emphasis is placed on the promotion of lifelong learning opportunities'.
- The Programme for Prosperity and Fairness (Government of Ireland, 2000b): As with the previous programmes, this plan 'also makes a firm commitment to access for mature students and 'adult-friendly' policies, with the development of part-time and distance learning initiatives viewed as key measures to support this plan'.
- Report of the Action Group on Access to Third Level Education (2001): This report, undertaken by the Department of Education & Science examined the participation rates of under-represented groups[14], offering a number of strategies that aimed at improving

[14] Students from Socio-economically disadvantaged backgrounds, Students with a disability, Mature students and Disadvantaged communities

> access and retention rates for under-represented groups at tertiary level. (Murphy and Coughlan, 2003, pp. 242-3)

What is clear from this wide though by no means exhaustive list is that whilst the various reports and initiatives all advocate for the wider participation of adults in education they generally belie a functionalist approach. What appears to be missing or at least latent is the provision of lifelong learning as an inherent right.

Notwithstanding Murphy and Coughlan's outline, there have been a range of other initiatives and policies, these include: the previously referred to White Paper, Learning for Life, published in August 2000, and the establishment in 2002 of the National Adult Learning Council (NALC) which apparently heralded in an era where adult and community education would be supported and represented to a hitherto unparalleled degree. However, its suspension a year later raised and continues to raise doubts about the degree of seriousness that adult learning is regarded by the government and thus adult education lacks cohesion and coordination (AONTAS, 2006).

Another initiative, the Task-Force on Lifelong Learning was established under the terms of the Irish government's Programme for Prosperity & Fairness in 2000. The Task Force involved two government departments, the Department of Education & Science and the Department of Enterprise, Trade & Employment. The taskforce report, published in 2002, identified a need to commit to the Lifelong Learning agenda for a number of reasons; however, these reasons can be reduced to two primary imperatives. The first imperative was the need for the Republic of Ireland to retain a competitive edge in the global economy. In order to do this, one of the pre-requisites is that the national workforce constantly updates its skills base. It argued that while Lifelong Learning might have been previously seen as the sole province "of the professionals or knowledge

workers, the need to continuously adapt and upgrade knowledge skills and competencies is now seen to apply across the gamut of jobs and workplaces" (Department of Trade & Enterprise, 2002, p.5). The report also noted that "there has been little subsidisation of lifelong learning, and adult learning in particular" (Department of Trade & Enterprise, 2002, p. 33). In relation to fees and funding the report also noted that because of the abolition of fees for full time undergraduate education in the academic year 1996/7 there "is now a significant discrepancy between the costs of learning for full time students and part time students, with the latter paying[15] full fees" (Department of Trade & Enterprise, 2002, p.33).

The second imperative was seen as responding to a number of social concerns. "Foremost amongst these is the interrelationship between employability and social exclusion and the view that access to more and better jobs is a fundamental underpinning of an inclusive society" (Department of Trade & Enterprise, 2002, p.33). The report went on to argue that Lifelong Learning should be seen as a tool to encourage and facilitate active citizenship, "whereby people are empowered to contribute proactively to the development of society" (Department of Trade & Enterprise, 2002, p.33). Finally, it argued that Lifelong Learning "brings the issue of individual personal development to the forefront and supports the individual's right to grow and develop intellectually and holistically" (Department of Trade & Enterprise, 2002, p.33).

The Government's ten-year social partnership plan: 'Towards 2016' (Government of Ireland, 2006) incorporated a number of objectives with reference to lifelong learning. These objectives included a commitment to "foster the continual acquisition of the

[15] Given that the OEL participants were not required by the HSE to pay for their fees this represented a significant savings on the part of the participants in the region of approxiamately €2,000-€2,500 per year.

knowledge, skills and competencies required to meet the demands of an economic environment of constant change" (Government of Ireland, 2006, p. 191). Recognising the diverse needs of the population, the plan encourages the provision of "a greater flexibility of course offerings to meet diverse student population needs in a lifelong learning context" (Government of Ireland, 2006, p. 201). On the matter of college fees, the plan contained a promise of €10m to pay for part-time third level courses for those at work with no previous third level qualification.

The National Development Plan 2007-2013 (Government of Ireland, 2007) which as of January 2009 became the victim of government cutbacks nonetheless provided a blueprint for change and gave an insight into the priorities and emphasis of the government. There were a number of references to the need for greater flexibility and innovative use of ICT to meet diverse student needs in the context of lifelong learning. However, time and again the plan refers to lifelong learning in the context of up-skilling the workforce. Thus the aim of the policy was to produce an adaptable workforce with the "skills and competencies required to meet the demands of an economic environment of constant change" (Government of Ireland, 2007, p. 191).

The 'National Plan for Equity of Access to Higher Education 2008-2013' (Higher Education Authority (HEA), 2008) is the latest[16] in a series of plans aimed at improving access to third level across all sections of Irish society. Relating to the advancement of the lifelong learning agenda, the plan calls for the development of a broader range of entry routes and a significant expansion of part-time/flexible courses and through distance and blended learning. The plan recognised the problems faced by adults who

[16] The *2005-2007 Action Plan on Equity of Access to Higher Education* and the *2001 Report of the Action Group on Access to Third Level Education* (HEA 2001 & 2005)

want to participate in higher education but cannot afford to leave work and cannot afford to pay the fees that part-time courses attract.

Adult Learners

Discerning the nature and extent of adult learning activity is somewhat problematic; defining exactly what activity constitutes adult learning is at the heart of this problem. In relation to adults, education can incorporate any activity from a hobby class at the local evening school to a PhD in a university. Statistics need to be culled from a wide range of sources including adult, continuing, community, literacy, further and higher education providers. While there is no comprehensive adult education database, AONTAS seeks to collect figures on an ongoing basis from a range of sources. Notwithstanding methodological difficulties, it is possible to identity sufficient sources of data to present a broad albeit incomplete picture of lifelong learning in Ireland. AONTAS's most recent large scale figures (2007) drawn from various sources in the years 2000 to 2005, show that there were: 147,000 adults on night time and evening courses and approximately 34,000 adults participating in adult literacy schemes (AONTAS, 2007).

In terms of further education there are a range of other education routes available that are central components in the government's lifelong learning strategy, these include Post-Leaving Certificate (PLC) courses, Youthreach[17] and the Vocational Training Opportunities Scheme (VTOS[18]). The most recent set of statistics available from the Department of Education and Science refer to 2006 and 2007 - in 2006 the numbers attending Post-Leaving Certificate (PLC) courses was 30,191 (DES, 2008b); the numbers

[17] Youthreach is funded by the Exchequer under the National Development Plan. It is a joint programme between two Government Departments - Education & Science and Enterprise, Trade and Employment. Management is through an Inter-Departmental Committee.

[18] VTOS is funded by the Department of Education and Science under the National Development Plan 2007 - 2013 and it is delivered in over 100 locations throughout the country by the thirty-three VECs (Vocational Education Committees).

attending VTOS in 2007 was 5,377 (DES, 2008b) whilst the numbers attending Youthreach programmes in 2007 was 2,863 (DES, 2008b). In 2007, the Further Education and Training Awards Council (FETAC) presented a wide range of further education awards to 126,624 recipients (FETAC, 2008) up from 68,262 in 2002 (FETAC, 2006) representing a significant increase in lifelong learning activity.

Set against a background of steadily increased student numbers attending Higher Education Authority (HEA) funded institutions; the number of mature students (23+ years) full-time new entrants increased from 1,689 in 2005/2006 to 1,991 in 2006/2007, an increase of 18% (HEA, 2008a). The numbers attending part-time third level courses in 2006 was 31, 354 (DES, 2008).

Published by the educational publisher Learning Ireland, the 2006 and 2007 Lifelong Learning Indices provide a useful source of empirical data regarding trends and attitudes within the student body of adult education. The study was carried out via the company's website and surveyed 1,106 adults in 2006 and 2,278 in 2007 on such topics such as funding, prior experience and levels of education, reasons for attending classes, experiences and preferences of learning situations and access issues. Due to its reliance on a web-based data collection method its findings must be treated with a certain degree of caution, there is after all an inherent bias against those who neither use nor access computers. The other source of bias in this study is that it draws on the existing student body of adult education; as such it is surveying those already engaged and/or consciously accessing information about lifelong learning. Nonetheless it still provides a useful source of data regarding an area that is generally under-researched, and given the

relatively large sample sizes these two studies must be considered important. The studies are summarised thus[19] (Learning Ireland. 2006; 2007):

- Job status: Employed 80% (2007) & 92.5% (2006)
- Working situation: Office/Services/Professional/Managerial combined 79% (2007) & 92.5% (2006). Manual work 4% (2007) & 0.9% (2006)
- The stage respondents left full-time education: Secondary 26% (2007) & 18.8% (2006). Third level degree and Postgraduate qualification 43% (2007) & 57.5% (2006)
- From a distance learning perspective, the figures make interesting reading. In the 2007 study, 56% of respondents said that their preferred method of learning was 'hands-on' & practical experience with the least popular method (7%) being e-learning. However, 81% would consider enrolling in a distance learning/e-learning course if necessary.
- It would appear that the majority of respondents had quite functional reasons for attending their courses: Employer requirement 1% (2006) 3% (2007); Promotion 16% (both studies); Learn new skills 36% (2006) 48% (2007); Change career 14% 2006) 12% (2007) and Social factors/social life 1% in both studies

It can be easily appreciated that this cohort of respondents are somewhat limited in their representativeness of the general public as they include a large percentage of higher grade occupations and generally higher levels of educational attainment. However, the studies certainly bear out Conboy's (2002) contention that those most in need of education and training are frequently the least likely to engage in lifelong learning. The collection of adult education statistics also seemed to indicate a preponderance of traditional face-to-face modes of delivery as opposed to the different forms of alternative delivery.

Issues faced by Adult Learners

The needs of part-time adult learners are not neccessarily the same as school leavers entering full-time third level education. The trouble is that many educational institutions are, despite their protestations fundamentally organised around the delivery of traditional programmes to younger full-time students. However, if more potential adult learners are

[19] For presentation purposes some of the figures have been rounded

to become actual learners then more of the same is not enough (Skilbeck, 2001). Yum et al. (2005) of the Open University of Hong Kong recognize that one of the most common problems with being an adult learner is reconciling the considerable demands made on the student's time. As a result, some students can sometimes find it difficult

> ... to cope with challenging jobs, demanding families and social obligations. On top of all of these demands, part-time students have to fit in time for reading, attending classes, doing assignments, revising for examinations and the other obligations of the course they are enrolled on. (Yum et al., 2005, p. 303-4)

While there has been some recent debate about the continued abolition of third level tuition fees there remains broadly speaking agreement that taxpayers largely finance initial education at school and college, the responsibility for funding adult learning tends to be divided between employers, government and individuals. However, for the majority of adult learners the balance weighs heavily against them as it is they generally must pay fees (Fleming, 2008).

As previously noted, the issue of student fees remains problematic for adult learners; but it should also be noted that fees are only a small component of the overall issue of money and cost associated with being a lifelong learner. One of the major advantages of distance learning is that regular physical attendance is not necessarily[20] a pre-requisite. Clearly, this is an important factor as learners do not have to resign from work in order to attend classes thus saving on lost earnings; as such attendance at full-time classes represents opportunity costs. The parents of young children may face very high costs of participation in terms of childcare and transport costs can be significant for people living considerable distances from higher education institutions (Higher Education Authority (HEA), 2008). Adult learners are frequently in their 'sandwich years' in relation to their

[20] Obviously depending upon the nature and requirements of the course e.g. fully online or blended delivery

caring responsibilities. They may well be old enough to have elderly parents, yet at the same time have children who still require varying levels of supervision and care. However, it is important to note that the burden of caring is frequently shared unequally. Commenting on the dual responsibilities often faced by women adult learners, Evans (1994, p.58) notes:

> In the gendered worlds of study, women are typically much more dependent than men on the support of their partners in order to complete their courses... Women are more likely to be trying to balance a much heavier burden of study, work and home responsibilities

Albertini's (2009) experience in community based education has been that the women who are at the greatest risk of a low level of participation in community and adult education programmes are those with limited access to child care. Despite the frequently stated commitment expressed by the Irish Government to the concept of lifelong learning, the practical difficulties faced by lifelong learners in terms of time management, course fees and general costs and the cost and provision of appropriate childcare, lifelong learners face a number of issues that represent a significant challenge.

Work based Learners

As the previous sections have repeatedly noted, the driving force behind lifelong learning has to a large degree been based on notions of economic and industrial competitiveness. Clearly lifelong learning means the recognition that learning opportunities extend beyond one's early twenties and extend into a wide range of locations. One notable sub-set of adult learners to emerge in the last ten to fifteen years is work-based learners. The aim and aspiration of work-based education initiatives such as Skills for Work[21] aim to

[21] Administered by FÁS; *Skills for Work* is a national programme under the One Step Up initiative, aimed at providing training opportunities to help employees deal with the basic skills demands of the workplace. All programmes are aimed at employees with basic education needs including literacy and numeracy, in particular employees with, or less than, junior cycle qualifications.

provide employees with the opportunity to learn new skills and gain qualifications whilst working.

However, there remains the issue of balancing aspiration with realities; this balancing act is often quite pronounced in the delivery of work based programmes. No matter how committed an employer is to facilitating an education programme, they will be faced with a number of issues that have to be addressed. The provision of training by an employer necessarily entails some degree of difficulty, for example staff may have to be released from work duties and thus productivity may be lost, or other employees may have to cover for colleagues.

Regardless of the means by which an education programme is delivered; via the Internet, face-to-face, postal or a combination, all programmes present their own challenges particularly for the lifelong learner. Work based programmes may impose an added degree of stress, as learners may fear that their job is at stake if they fail to complete the course and/or pressure to complete a course if their fees have been paid. Moreover, if one decides that true lifelong learners derive their motivation to participate and succeed from within without recourse to extrinsic factors it would be difficult that work based learners are 'true lifelong learners'.

The role and purpose of education – the polemic positions

Adult and continuing education has secured a strong position in public, institutional and political consciousness although it is quite clear that there is a great deal of debate as to its exact nature and extent. Returning briefly to Coffield's (1999) typology, it can be viewed as: an agent for change; a vehicle for improving economic competitiveness, a means of personal development and for some it represents an opportunity and a means to

combat social exclusion and marginalisation. Thus at one end of the spectrum we can see a humanist understanding of education wherein it can become the practical embodiment of all that is good about a modern society that offers hitherto unavailable opportunities to a wide swath of its populace. Conversely, if one adopts functionalist/manageralist approach it can be seen as a tool supporting a capitalist economy that constantly needs workers to be up-skilled in order to maximise its competitive advantage. This is not to imply that these positions are mutually exclusive, nonetheless it needs to be appreciated that the employers, the state, education providers and learners occupy differential positions in relation to the dominant philosophy that underpins lifelong learning as a concept. These differential positions therefore results in differing levels of expectation – this can encompass such matters as responsibility for the payment of course fees, cost of fees, format of course delivery, course aims and course content.

The past twenty to twenty-five years has certainly seen a transformation in Irish society and the education system is not exempt from these changes. The idea "of being trained as youth for the same job for life … is becoming less tenable" (Bates, 2005, p. 10). Walther and Stauber (1998) argue that the concept of lifelong learning affords the opportunity to break away from the restrictive nature of the standard educational trajectory generally undertaken: "lifelong learning as a new educational concept accords to a new understanding of life courses that doesn't presume any longer a clear cut sequence of life phases" (Walther and Stauber, 1998, p.16). The emergence and development of networked technologies has expanded the range of delivery mechanism for education and, in so doing, changes the way students have traditionally experienced the learning environment (Howland & Moore, 2002). Given the range of new technologies that have become available coupled with rapidly changing economic needs this conception of

education as a discreet segment of one's life that is undertaken prior to beginning the work phase has by and large become redundant. Rowntree (2000) notes that "forty years ago, it was possible to greet the fresh concept of 'lifelong education' as a lifestyle option for an age of increased leisure. Now it is becoming a necessity for survival".

Finally, while this review explored the debate regarding the role and purpose of education in the adult and lifelong sector it is important to note that these debates are not confined to this particular sector. The role and purpose of education as either a vehicle for emancipation and transformation or as tool that helps capitalist economies prosper can be found in all sections of the education spectrum from primary school to graduate education.

Lifelong & Adult Learning – A Summary

- At the conceptual and policy making and implementation level lifelong learning has become intimately associated with modernity. At both national and international level it has been adopted as a vehicle for the development of both human and economic capital. As such lifelong learning has provided both the rationale and impetus for individuals to engage with the education system in a manner that can potentially transform their lives, the economy and society.
- However, there is some disquiet as to the primary role and purpose of lifelong learning – the question essentially centres on the debate between those who view lifelong learning as a vehicle for personal transformation and those who view lifelong learning as a vehicle that drives economic competiveness.
- While the Irish government has produces a plethora of policies and initiatives regarding lifelong learning it would appear that the economic drive side of the

debate would appear to have gained the upper hand, particularly in light of the economic downturn.

- Adult and lifelong learners face a number of difficulties and trials, not least the not insignificant task of juggling life, study and work demands and consequently those with the fewest resources find it difficult to engage with adult learning. While the level of provision of adult learning opportunities has greatly increased over the past twenty years, it is noteworthy that those who possess the lowest level of qualifications are still least likely to engage in continuing education.
- The debate on the nature and purpose of lifelong learning and which approach (humanist or functionalist) comes to dominate is important as the ensuing adult and continuing education system in terms of type and form of delivery, funding and level of provision is hugely influenced by whichever approach is adopted.

Distance & E-Learning

Sumner (2000) is somewhat suspicious of claims that distance learning can act as a driver for educational empowerment, on the contrary she argues that distance education simply provides a source of instant financing for cash strapped universities. Stout and Dominey (2006) provide a strong rebuttal or 'counterblast' as they refer to their defence of distance education. They argue that just as traditional campus-based learning can be stimulating it can also be dull and uninteresting if it is poorly planned and delivered; distance learning too has the same potential to be interesting and challenging or dull and uninteresting. In effect, programmes regardless of delivery platforms are only as good as the staff team who plan, design and deliver the programme.

Distance learning, unlike open learning "is less a philosophy and more a method of education" (Bates, 2005, p. 5). Anderson and Elloumi (2004) identify the evolution[22] of four distinct generations of distance education over the past 150 years. Beginning with correspondence study, distance education has continued to evolve through the use of mass media (such as television and radio); synchronous technologies (video- and audio conferencing) and finally the use of computer conferencing. They go on to identify an emergent fifth generation, based on "autonomous agents and intelligent, database-assisted learning" (Anderson and Elloumi. 2004, p. xiii) that they refer to as "the educational Semantic web". The evolutionary analogy should in no way imply that each format has completely supplanted the previous format; rather we are now left with a complex and diverse range of delivery platforms (Anderson and Elloumi, 2004).

E-Learning

The 'e' in e-learning has entered a common parlance that incorporates other similar hybrid terms such as 'e-mail' and 'e-commerce' which implies the principal form of enactment is via electronic means although it is typically interpreted as computer-based (Andrews and Haythornwaite, 2007). As with many commonly used terms it is often possible to discern a number of meanings and understandings. The variety of possible uses and the ever expanding range of hardware and software options, results in a situation where e-learning can be anything from a simple means of a remote access information retrieval system to a fully interactive multimedia experience. This lack of clarity was recognised by the United Kingdom's Department for Education and Skills when in 2003 they noted that:

[22] Bates (2005) cites Kaufman (1989) and Nipper (1989) who identify three distinct generations: (1) Print-based correspondence (2) Multiple-Media – print and broadcast supported by a third party tutor such as the British Open University and (3) Knowledge-based or post-industrial generation based on two-way communications such as the Internet or video-conferencing.

> If someone is learning in a way that uses information and communication technologies, they are using e-learning. They could be a pre-school child playing an interactive game; they could be a group of pupils collaborating on a history project with pupils in another country via the Internet [...etc.] – it all counts as e-learning (As cited in Oliver & Trigwell, 2005, p. 18)

Andrews and Haythornwaite (2007, p. 6) point out that items that permit access to the Internet no longer need to be the fixed desktop computer. Access and multimedia capabilities are also "afforded by laptops, palmtops (also known as Personal Digital Assistants or PDAs), mobile phones, and media players (e.g. MPS players)".

EU Distance & E-Learning Policies

Given the pervasiveness of ICT in modern life and our increased dependence on ICT, the capability to use ICT at home has become an important condition for social participation (Verdegem and Verhoest, 2008).

> The aim of policy-makers and teachers is to transform education – that is to make radical improvements to its processes and outcomes – so that more students reach higher levels of achievement. For most the goal is also to make education more personally fulfilling for students, to nurture their creativity, develop their cognitive abilities, and give them purpose and autonomy as life-long learners in a rapidly changing world (Somekh, 2007, p.7).

The potential that ICT presents policy-makers, educators and students in terms of creating innovative, interesting and accessible education is enormous. As far back as 1961 the then European Economic Community's Commission (CEC, 1961) proposals on vocational education included reference to need to utilise modern teaching methodologies (MacKeogh, 2007). Subsequent policy proposals included the 1973 Janne (CEC, 1973) report proposed introducing a form of European Open University and in 1985 "a series of EU action programmes for the first time provided funding for distance education projects (e.g. EUROTECNET, COMETT and DELTA)" were mooted (MacKeogh, 2007, p. 2).

In tandem with the development of policies on lifelong learning the European Union (EU) has developed a number of resolutions and policies regarding e-learning. Bearing in mind that EU council resolutions are at times somewhat more aspirational rather than operationally feasible, said resolutions are nonetheless important landmarks in mapping the development of policy. The EU Council resolution (2001/C 204/02) clearly locates e-learning within the context of a number of European Council resolutions (Lisbon 2000; Stockholm 2001) on the development of a knowledge society. The resolution invites the member states to undertake a number of actions. With specific reference to lifelong learning, the resolution invites states:

> ...to capitalise on the potential of Internet, multimedia and virtual learning environments for a better and faster realisation of lifelong learning as a basic educational principle and for providing access to educational and training opportunities for all ...(2001/C 204/02, Section 9-ii)

The resolution goes on to invite member states "to support the development and adaptation of innovative pedagogy that integrates the use of technology within broader cross-curriculum approaches" (2001/C 204/02, Section 9-ix).

However, one does not need to look to the EU to ascertain the importance that is attached to the need to improve the ICT skills amongst the general population. Similar to the development and adoption of lifelong learning at legislative and executive level, the development of a comprehensive set of ICT policies has been incremental.

In 1997, the International Data Corporation (IDC), ranked Ireland at position number twenty three which placed it in the third division with respect to the country's preparedness for the 'information age' (Freeman et al., 2001). Acknowledging that Ireland was falling behind in comparison to other industrialised countries, the Irish Government embarked upon a number of initiatives; these included:

- Schools IT 2000 – launched in November 1997; was a policy framework for the integration of ICT in first and second-level schools
- The first report of the Inter-Departmental Implementation Group on the Information Society was published in December 1998 (Government of Ireland 1998a), heralding the Irish government's firm commitment to the creation of a 'knowledge society'.
- In March 1997 the Information Society Steering Committee (established in March 1996) published a report entitled 'Information Society Ireland: Strategy for Action' (Forfás/ISSC, 1997). The steering group's report recommended a number of strategies by which Ireland could use ICT to transform the economy and society. Recommendations included: the establishment of an Information Society Commission; the provision of a regulatory and legal framework for the telecommunications sector; low cost access to broadband services to businesses and homes and a National Learning Initiative linking schools, libraries and knowledge resource centres.
- Launched in December 2001 the Blueprint for the Future of ICT in Irish Education 2001-2003 provided the follow-on from the Schools IT 2000 (Government of Ireland, 1997) initiative. This plan aimed to provide €107 million over three years, €78 million of which was to be spent on capital investment with balance to be spent of staff development.
- The Expert Group on Future Skills Needs[23] (2004) submission to the OECD noted that in the future, ICT literacy will be elevated to "the status of a core skill,

[23] Established in 1997, the EGFSN reports to the Minister for Enterprise, Trade and Employment and the Minister for Education and Science. Its primary roles are to provide the government on strategic advice on building skills through education and training and Data collection and analysis on demand and supply of skilled labour. The 2004 OECD submission is just one in a long series of policy analysis and research reports produced annually.

on a par with reading and mathematics; ICT literacy will become a life-skill as much as a career skill" (EGFSN, 2004, p. 6).

- The National Development Plan 2007 – 2013 (Government of Ireland, 2007) forecasted an investment of €25.8 billion over the time of the plan on 'human capital'. Referring to the Lisbon agenda (COM, 2000) the plan placed the principle of lifelong learning as its central tenet. In calling for the modernisation and reform of delivery it called for the "development of innovative models of course delivery including use of ICT, e-learning and distance learning" (Government of Ireland, 2007, p. 204).

However, the downturn[24] in the Irish economy (arguably) starting in the second half of 2008 which gathered pace in 2009 has seen a cutting back in the funding available to many of these projects if not their outright cessation. By May 2009 the Minister for Education announced a further reduction of €134 million on the already reduced education budget that had been announced the previous October. Taken in conjunction with the Irish Government's overall commitment to cut public spending by €4 billion it remains to be seen how much these reductions will damage the plans for the development of ICT in education. It would however be foolish to underestimate the possible fallout from such a large reduction in spending.

A Knowledge Society?

Although written in 1994 when many of the technologies currently employed were in their infancy or even at the 'imagined' stage, the Learning through Telematics report's (Mayes et al., 1994) note of caution is as relevant now as it was back in the early 1990s.

[24] Ireland's GDP contracted by 7.5 per cent year-on-year in the fourth quarter of 2008, as consumer spending dropped and industrial output was severely damaged. The figures left Ireland with an annual GDP growth rate of minus 2.3 per cent in 2008, its worst year since 1983 (CSO 2009).

> Predicting the future of technology is easy. Predicting the way in which the technology will be taken up within education is very difficult. There is a long history of hyperbole about education technology characterised by repeated predictions of imminent revolution in methods ... Education is a social and political system and experience should teach us that systems are not easily changed by developments in technology. (Mayes et al., 1994, p. 14)

Understandably everyone may not share the motivations or the values of those responsible for the innovation or change – "some will experience (or at least perceive) the costs of introducing the innovation as higher than the perceived benefits, and are therefore more likely to ignore, resent, reject, subvert, or oppose the change" (Whitworth, 2005, p. 689). The adoption of ICT in education has had a chequered path lurching at times from messianic zeal to downright repudiation. Threading a way through the sometimes grandiose claims that proponents of ICT in education make can be somewhat confusing and misleading. The British Journal of Educational Technology's editorial 'rhetoric and reality-the present and future of ICT in education' by Nichol & Watson (2003) cite the work of Martin Cohen (2000) in which he (Cohen) identified a number of clusters regarding the benefits of ICT in education. From the policy maker's perspective the roles for ICT include:

- Economic competiveness – ICT will revolutionise the way that we work
- Enjoyment – ICT makes learning more attractive
- Social relations – ICT facilitates communication and interaction with others
- New Educational methods – ICT facilitates and promotes new roles for teachers and students alike
- Individualised learning – ICT is a route for the creation of self-directed autonomous learners

Adapted from Nichol & Watson (2003, p. 134)

The noted UK economist and futurist Hamish McRae argued that the internet is a democratising technology as it makes available to many what was previously available to only a few (McRae, 1994). This inherent belief in the transformational abilities of the Internet in general and the role of ICT in education specifically; "takes place increasingly within the context of a specific vision of our economic and social future". This vision is

commonly termed the 'information or knowledge society' (Garnham, 2000, p. 140). However, Garnham (amongst others) goes on to argue that the 'knowledge/information society' as a concept has little meaning or use; rather it should be considered to be an ideology that encourages "uncritical assent to whatever dubious proposition is being put forward beneath its protective umbrella" (Garnham 2000, p. 140). He argues that the information/knowledge society as an ideology focuses on the supposed improvements in human capital without acknowledging that it may have a detrimental impact on the ways and means we conceptualise education both as a process and as a series of outcomes. The two key impacts on the higher education system can be characterised by; firstly a re-orientation of higher education "on the grounds of the particular skill shortages and labour market dynamics supposedly associated with a shift to a knowledge economy" (Garnham, 2000, p. 141). Secondly, technologies are used in educational delivery simply because they represent a means of increasing productivity, regardless of such things as quality assurance and pedagogical considerations (Garnham, 2000).

Hargreaves (2003) takes a less critical view arguing that it serves both the private and public good, stimulating growth and prosperity. However, he also argues that "like other forms of capitalism, the knowledge economy is in Joseph Schumpeter's terms, a force of creative destruction" straining as it does to reconcile the distance between knowledge society's productive effects and the knowledge society's capitalistic potential "for relentless pursuit of profit" (Hargreaves, 2003, p. 1).

Williams et al. (2000) consider that debates about the efficacy of ICT in education can be located within the wider context of the development of lifelong learning. From the adult learners perspective; "E-learning allows participants in higher education to collapse time and space" (Keller, 2005, p. 299). This collapsing of time and space allows students to do

course work in their own time and at their own pace, free from the constraints of externally imposed schedules (Cole, 2000). However, these somewhat aspirational standpoints need to be explored further if the claims of e-learning proponents are to be realised – it is important to acknowledge that technological innovations do not by themselves necessarily bring about change (Pennington, 2004). As Drucker (1995, p.40) argues: "It is commonly believed that innovations create changes—but very few do. Successful innovations exploit changes that have already happened". The changing nature of society as a result of the propagation of lifelong learning resulted in a changing context for learner, teachers and policy-makers. A common error is frequently to overestimate the impact of a new trend or innovation in the short term and underestimate its effect in the long term. Daniel (2001, p. 1) noted "recent public discourse about the use of online technology in higher education has fallen headlong into that trap".

If there has been a large degree of unqualified acceptance regarding the seemingly self-evident good that is e-learning. One need only examine the problem of access to technology to appreciate that for many people the lived reality does not measure up to the somewhat aspirational rhetoric. The next section examines the juncture between the rhetoric of the knowledge society and the limited levels of access to ICT that some learners face.

The 'Knowledge Society' & the 'Digital Divide'

The commitment expressed at national and EU level for the creation of a society that embraces and encourages continuing education has been matched in no small measure to a commitment to the creation of a knowledge society. If Ireland is to become a 'knowledge society' and e-learning to become a viable option for the facilitation of adult

learning then a number of pre-requisites need to be met, these include: widespread ownership or access to computer hardware and software and Internet access, preferably via some form of high-speed connection such as ISDN or broadband. However, "too often this kind of access is assumed, particularly in developed countries" (Haythornthwaite, 2007, p. 97). This lack of computer and Internet access has frequently been referred to as 'the digital divide' (McCaffrey 2003).

It would however be somewhat erroneous to attribute the cause of this digital divide solely to the lack of internet access and/or computer hardware. Haythornthwaite (2007) argues that the digital divide is more complex than whether someone has internet access or not; skill and confidence levels are just as important in determining whether some will choose e-learning as an option. In fact the very term – 'the digital divide', or as Warschauer (2003, p. 297) characterises it as the: "bipolar division between the haves and have-nots" has been criticised for its oversimplification of access and uptake of ICT (Warschauer 2003; Muller et al., 2007). Lenhart and Horrigan (2003) offer the argument that rather than simply conceptualise the situation in the either/or terminology implied by the term digital divide; the term digital spectrum with its fine grained approach might be more appropriate. For example, a student (or potential student) may be very computer literate but live in an area with no broadband coverage; or they may have broadband and access to a computer but they may not be computer literate and so on. The issue of learner skill and preparedness is explored in a later section; however, regardless of the learner's perceptions of or their willingness to use internet based learning, the availability of the appropriate hardware, software and internet connectivity remains a substantive issue.

Statistical indicators of the Digital Divide

Since the publication of the Forfás[25] report Broadband Telecommunications Investment in Ireland in 1998 they (Forfás), have produced a number of subsequent benchmarking reports (2002; 2004; 2005; 2006 and 2007) aimed at monitoring the country's changing broadband capability. In addition, the Central Statistics Office (CSO) conducts annual enterprise and household surveys of ICT and e-commerce usage aimed at providing harmonised statistics at EU level on indicators as outlined by the i2010 Initiative (2005).

Computer Ownership – Regional Differences

The figures provided by the CSO indicate a marked increase in levels of computer ownership over a relatively short period of time. For example, from June 2005 until February 2006 the number of households with a home computer jumped by 69,800, from 797,700 to 867,500 which represents 58.5% of all households in the country at the time (CSO, 2007, p. 315). By 2007, computer ownership rose to 998,000 or 65.4% of households (CSO, 2007, p.1). Nonetheless, it is important that global numbers such as this be treated with caution; the rates of computer ownership vary across the country. For example as table three drawn from the 2006 census indicates there is a noticeable difference between the level of computer ownership in Leinster and the other three[26] provinces:

[25] The Irish government's policy advisory board for enterprise promotion, science and technology development

[26] Ulster (part of) constitutes the three counties in the Republic of Ireland of Monaghan, Cavan & Donegal

Province	Total No. of Households	Household with no Computer	% of households without a computer (figures have been rounded)
Leinster	791,277	299,899	38%
Munster	406,798	178,422	44%
Connacht	173,941	78,119	45%
Ulster (part of)	90,280	42,977	47%

Table 3 Computer Ownership by Province (CSO 2006)

The difference is even more marked when one examines the figures on a county by county basis. For example, South Dublin had a figure of 22,809 or 28% of its households whereas Cork City's 21,232 households without a computer represent a rate of 48%; Meath's 18,766 households without a computer represents 35% of households whilst Kerry's figure of 22,688 or 47.5% of households. As can be seen, on a regional and county basis there are marked differences in the levels of computer ownership, however, this level of difference is even more marked when it comes to analysing the types of internet connection available throughout the country.

Internet Connection – International Differences

The number of private households connected to the Internet rose from 655,000 in 2005 to 865,500 in 2007 – representing 86.7% of the households that own a computer. In 2007 connection for 386,300 was via a modem/ISDN with a further 467,300 connecting via broadband and the remaining 18,900 a "don't know/other" (CSO, 2007, p.2). The CSO figures in this case merely refer to private households – the Forfás figures give details of the total number of broadband connections including academic and business use. The 2007 Broadband Performance and Policy Requirements report highlighted an 87% increase in broadband subscribers from 372,600 in June 2006 to 698,000 in June 2007

(Forfás, 2007, p.4); this 698,000 "represent almost two thirds of the 1.1 million Internet subscribers as of June 2007" (Forfás, 2007, p. 5).

This regional variation has been highlighted by a number of bodies amongst them: the Irish Farmers Association (IFA). For example in the IFA's 2006 submission to the National Development Plan 2007-2013 they argued that: "rural dwellers including farm families will be hugely disadvantaged if they do not have ready access to Broadband technology and services going forward" (IFA, 2006, p. 24).

The result of the 2007 survey of the 27 member states of the EU[27] plus Norway and Iceland also demonstrates a wide variation, although this variation is of course inter rather than intra societal. The survey reported that 54% of households had access to the internet during the first quarter of 2007, compared with 49% during the first quarter of 2006. Of those with an Internet connection 42% had a broadband connection; this represents quite an improvement compared with 30% broadband connection in 2006 (Eurostat, 2007).

The highest proportion of households with internet access was in the Netherlands (83%), Sweden (79%) and Denmark (78%). The lowest levels of internet connection were in Bulgaria (19%), Romania (22%) and Greece (25%). The proportion of households with a broadband connection by and large mirrored the countries with highest internet connection; with the highest being the Netherlands (74%) followed by Denmark (70%) and Sweden (67%). The lowest broadband connection rates were Greece (7%) closely followed by Romania (8%) and Bulgaria (15%) (Eurostat, 2007).

[27] Excluding Malta

In terms of Internet access, the Republic of Ireland was marginally ahead of the EU averages in 2006 and 2007.

However, as table four shows, in terms of broadband connection (despite a large improvement) Ireland still lags behind the EU average:

	Internet Access		**Broadband Connection**	
	2006	**2004**	**2006**	**2007**
EU27	49	54	30	42
Ireland	50	57	13	31

Table 4 Internet Connectivity an EU Comparison

Computer Ownership and Internet Connection - Socio-Economic Differences

However, it would be quite misleading to only examine the rates of computer ownership and internet connection on a geographical basis. The OECD (2001) report: 'Understanding the Digital Divide' found that within a given cohort; even when income levels were similar, there was a positive relationship between levels of educational attainment and degree of ICT acceptance and use. Another study, undertaken for the European Commission (McCaffrey, 2003, p. 14) also noted this connection between "levels of income, education and ICT adoption/use". Published in 2003, the 'Digital Divide' (Haase and Pratschke); a large-scale study of ICT acceptance and usage in the Dublin region is particularly illuminating; focussing as it did on 1,200 households across forty neighbourhoods. The sheer scale of the study across a wide socio-economic range provides a useful insight into the issues surrounding ICT uptake and access most notably because it focuses on the very populations that are the ones most likely to engage in lifelong learning.

In relation to levels of computer ownership and internet access it can be clearly seen from table five that there is a marked difference between the highest and lowest occupational classifications.

	Average for study (%)	**% of Higher Professionals**	**% of Unskilled manual**
Computer Ownership	40	71	15
Internet Access	31	63	9

Table 5 Computer Ownership Inter Social Class Comparison

As this study was carried out in 2003 there was a low level of broadband penetration, however even when this is factored in, the study reported a strong positive correlation between occupational grouping and broadband connection. The study reported (not unsurprisingly) higher levels (53%) of computer ownership for the highest income band earners than the lowest income band earners (18%). This level of disparity is again continued when one examines the levels of ownership and highest level of education attained. The figures highlighted that home access to a computer was approximately twice the average rate for individuals with a postgraduate qualification (80% compared to 40%), whilst the rate amongst those with primary education only is about half the average (20% compared to 40%).

Another important aspect of the digital divide is the need to acknowledge that home computer and internet access figures are somewhat misleading measures of the digital divide, as they measure the potential access of household members rather than their actual access. It is also somewhat misleading to only characterise the digital divide in terms of computer ownership and/or access and Internet connection. In its publication: IT Access for All (2000), the Information Society Commission (ISC) suggested that

merely focussing on the provision of physical access to computers does not automatically translate into the inclusion of previously-excluded groups.

The broadest definition of access should, in the view of the ISC (2000, p. 7) incorporate the following aspects:

- Awareness – the gap between superficial awareness of new technology and a real understanding of the opportunities that it offers.
- Physical Access – referring to both the ability to purchase equipment and to pay charges associated with using services such as the internet.
- Usability and User-friendliness of hardware and software.
- Ability to Use – the availability of tuition or guidance.
- Reliability of the Technology – the availability of technical support

Haase and Pratschke (2003) note that since the 2000 publication of IT Access for All; the debate has largely centred on the increased provision of fast connectivity notably broadband. Whilst fast connectivity and access to hardware is certainly important, as previously noted; access as understood by of the ISC certainly incorporates more than physical aspects such as hardware and connectivity. Consequently, Haase & Pratschke's (2003) study incorporated such measure as proficiency and confidence; computer awareness and actual use. They found that "computer awareness, actual use, home computer access, proficiency and confidence in using computers" (Haase and Pratschke, 2003, p. 24) – were all highly correlated. When analysed against social class, all the estimates were strongest for the professional class, consistently falling "as we descend the social class hierarchy, reaching their lowest point in the Unskilled Manual Class" (Haase and Pratschke, 2003, p. 24). Perhaps one of the most telling findings was that while a person from the higher professional class was about four times more likely to own and use a computer compared to a person from an unskilled manual background; the higher professional was approximately eleven times more likely to feel confident about

computers. This indicated that focussing on home computer access alone may underestimate the overall extent of the digital divide (Haase & Pratschke 2003).

Whilst computer based platforms via the Internet is certainly the dominant model of delivery of e-learning; in the context of maximising opportunities for lifelong learning it is important to acknowledge that digital technology products encompass such items as mobile phones, SMS (text messaging), games consoles[28] and digital television as well as the aforementioned computers. In the Haase & Pratschke study, just over half (55%) of respondents said that they were fairly or very familiar with computers; exactly half said the same about internet and e-mail. The digital technologies that rated the highest degree of familiarity related to television and mobile telephony, exceeding 80 per cent. Thus it is important to recognise that the ways and means of conceptualising the digital divide refers to much more than access to a desktop Personal Computer or the internet (Selwyn and Facer, 2007). This should be seen as an opportunity for those who wish to offer more lifelong learning opportunities to groups who historically (in respect to computers) have limited opportunities due to poor access, low skill and confidence levels. This is an important point in terms of examining the ways and means that virtual learning environments have often been used; with the developers simply focussing on the computer and the web based learning platform and not recognising the innovative ways that learners (particularly hard pressed lifelong learners) use the virtual learning environment.

It is important to consider that many of the studies regarding the digital divide focus on the household as the primary unit of measure. Rates of household access to computers

[28] For example, the handheld Nintendo DS games console offers a range of programmes that could be categorised as education such as 'Brain Training'

and the internet do not necessarily imply that all members of a household actually use them or are allowed access. Nonetheless, even with these methodological limitations the correlation between socio-economic group, level of educational attainment and uptake and use of ICT appears to be very strong.

Returning to the theme of ICT as a means of affecting change, both on a societal and individual level the role of digital technology as a vehicle for change would appear to be somewhat limiting. As the ESRI: Survey Assessments of the Information Society in Ireland (Williams et al., 2004, p. 2-3) noted:

> ... given the observed variations in access and accessibility between the different socio demographic groups, it is, unfortunately, unlikely that everyone will benefit equally from the information age.

This theme is echoed in Demunter's (2005, p. 6) report for the EU in which he summarised that: "younger and highly educated persons and households in economically more prosperous regions are thus further consolidating their leading position in the information society". E-learning and distance educators and providers would be well advised to consider that differential (and unequal) access to hardware, software or high-speed internet connectivity can be depend on financial and geographical limitations on the part of students. Whilst e-learning may be proposed as a means of providing education anywhere and at anytime it does not necessarily mean that it is capable of delivering education to everyone (Haythornwaite, 2007).

Making the case for ICT in Adult Learning

Rogerson-Revell (2007, p.71) predicted that one of the greatest growth areas in education is e-learning; quoting, John Chambers the then (1999) CEO of Cisco Systems; "The next

big killer application for the Internet is going to be education. Education over the Internet is going to be so big it is going to make e-mail usage look like a rounding error". The 2000 White Paper: Learning for Life recognised the many advantages of ICT as a medium for learning for adults in Ireland:

> As an opportunity for adult students, ICT provides a whole new mechanism for overcoming distance; for accessing information from one's home or workplace; for pursuing accredited learning programmes as more and more institutions adapt their programmes for electronic delivery and for interaction with other students in a virtual classroom environment. (Government of Ireland. 2000, p. 99)

It is important to note that whilst the White Paper acknowledged the benefits of distance learning programmes, it was also concerned with the limitations of ICT in educational applications; conceding that it is better to look at VLEs in the role of supplementing rather than replacing face-to-face learning opportunities. Notwithstanding this viewpoint, the White Paper (2000), whilst recognising that the use of ICT in adult education was in its infancy did acknowledge the potential for its use in the future (NALA, 2007). The 2000 White Paper also argued that adult education needs to be 'life wide' – thus provision should be in as many places both literal and virtual as possible in order to take account of the ways that people live and work. In terms of offering flexibility and responsiveness to education provision Allan and Lewis (2006, p. 368) note that

> ...an often cited advantage of e-learning is that it offers "anywhere, anytime" learning opportunities and that it provides a potential solution to the challenges involved in workforce development in organisations where there are flexible patterns of working practices and individuals are distributed over different geographic locations (Allan and Lewis, 2006, p. 368).

The Taskforce on Lifelong Learning report (2002, p. 34) was also quick to point out the advantages of open and distance learning claiming that it can:

> ...ameliorate some of the geographical and time barriers faced by many potential learners by mobilising information and communication technologies, including internet access and video/telephone conferencing.

Chris Abbott (2001) argues that the changes wrought by the introduction of ICT impacts in the social as well as the technological arena. The internet has changed practices in banking and shopping by creating new 'virtual' communities, "and any vision of the future of education has to recognise new methods of accessing information and new ways of relating to others" (Abbott, 2001, p.4). With specific reference to the opportunities presented by ICT and education provision: "Pouts-Lajus and Riche-Magnier (2000) argue that new educational technologies give us an opportunity to rethink educational relationships" (Holmes et al., 2001).

The opportunities presented are of course not problematic. The earlier section regarding the digital divide is a case in point. Provision of broadband, access to computers, training and support, ability and willingness to use ICT (from a teachers and users perspective) are some of the issues that need to be addressed if ICT is to have a meaningful impact in the provision of lifelong learning opportunities.

Snowden (2001) and Allee (2000) suggest that online learning environments have the "potential [to lead] to a more instructional rather than didactic knowledge developing exploratory approach" (Jones & McCann, 2005, p. 362). Notwithstanding these criticisms, Jones & McCann (2005) argue that well designed e-learning environments have the capacity to provide meaningful learning environments that encourage and facilitate reflective learning. However, they (Jones & McCann) also recognise the debate surrounding the humanist versus the manageralist role for education – "in many cases, faced with government pressure to become more financially focussed as entrepreneurial universities subject to the same rational economics as other such enterprises" (McIntyre and Marginson as cited in Jones & McCann, 2005, p. 362).

ICT and E-learning – A Summary

The section on distance and e-learning and the use of ICT clearly highlights the gap between rhetoric and reality in the provision of ICT and the supporting technologies on a nationwide basis.

- If the term lifelong learning is far from clear and contested then it could be argued that what constitutes distance and e-learning is also open to debate.
- The huge advancements in the available technology and its relatively widespread proliferation potentially offer a hitherto unimaginable range of possibilities to technologists and educators.
- As with lifelong learning, e-learning has been embraced at both national and international levels with a raft of policies and initiatives planned and implemented. However, due to the economic downturn it remains to be seen what impact the recession will have on Irish government and EU spending on e-learning and as a result the impact on e-learning provision.
- The concept of 'the knowledge society' as also become deeply embedded in public policy as a way of articulating (at national and international level) the desire to create a society where the ability to access information and utilise information communications technology should be available to all. However, as the section on the 'digital divide' highlighted, access to technology is heavily influenced by economic and geographical limitations.
- The case for greater use of ICT in the creation of a knowledge society and greater learning opportunities for adult and lifelong learners would (on the face of it) appear quite strong. There have certainly been huge strides in the types and range of communication technologies available. Notwithstanding these advances, technologies are only as useful as the ability of learners to utilise and access these

technologies and in this instance there appears to be a gap between rhetoric and reality.

Virtual Learning Environments (VLEs)

As previously noted, e-learning can take many forms ranging from interactive games, CD ROMs, and e-mailing. However, e-Learning is increasingly internet based and is often accessed through Virtual Learning Environments (VLEs) (Universities Ireland 2004). Often associated with the provision of distance education, VLEs are now in common use in "traditional, campus-based institutions, supporting 'mixed mode' provision of learning resources and support" (Keller, 2005, p.300). Some of the better known examples of VLEs include WebCT (www.webct.com), BlackBoard[29] (www.blackboard.com), FirstClass (The Open University's own interactive platform), Moodle (www.moodle.org) and TopClass (www.wbt.com). It is useful to draw a distinction between the three broad types of VLE; these are proprietary or commercial, open source or free and in-house developed (Powell and Minshull, 2004):

- Proprietary: As the name suggest there is the element of property rights and in effect payment for the use of the particular platform. Payment can be for the purchase of the product and/or ongoing licensing rights and support. Although originally an open-source provider, Blackboard is now a proprietary provider.
- Open-Source: there are various open source[30] and/or free learning platforms/VLEs available including Moodle, Colloquia (http://www.colloquia.net/) and Bodington (http://bodington.org/).
- In-House: using one's own servers and possibly incorporating an existing intranet is reasonably easy to implement if the platform you are intending to develop is relatively

[29] Although available and currently (as of December 2008) presented as a stand alone platform, WebCT was acquired by Blackboard in 2005.
[30] Open source software is freely distributed software, where users have access to the source code. Moodle is an example of open source learning platform software.

simple, e.g. just web pages to deliver content without any personalised logins. However, the complexity of in-house can match other providers providing the resources are available. The Open University's 'First Class' would be a well-known example of in-house developed platform.

In UK third level institutions the 'market' appears to be dominated by three main providers as indicated in the Brown et al. (2008: 35) study: Blackboard (47%), WebCT (23%) and Moodle (11%). Not surprisingly there is quite a lot of debate as to the varying attributes and merits of the different providers (Powell and Minshull 2004; McMullin and Munro 2004; Suri and Schuhmacher 2008). For example, Powell & Minshull (2004) ask that potential adopters of VLEs consider some of the following points. Firstly, cheap (or free) does not necessarily mean bad and conversely expensive does not necessarily mean good. Secondly, effectively there is no such thing as a free platform. "Costs are significant, even if there are no purchase or license costs" (Powell and Minshull, 2004, p. 17). These costs can include installation, staff development, maintenance and content development.

Such e-learning systems are sometimes also called: Learning Management System (LMS), Content Management System (CMS), Learning Content Management System (LCMS), Learning Support System (LSS), Online Learning Centre (OLC) or Learning Platform (LP) (Browne & Jenkins 2003; BECTA 2004; Keller 2005). The rate of increase has been quite staggering over a comparatively short period of time; for example, in the United Kingdom the rate of VLE use by higher education institutions (HEIs) rose from 7% in 1997, to 81% in 2001, 86% in 2003 and 95% in 2005 (Sharpe et al. 2006). Whilst there have been no comparable national studies regarding VLE usage in Ireland, Cosgrave et al. (2008) report that that most Irish HEIs are using VLEs to some extent.

The broad functions of VLEs "can be categorised into access and content management, resources and materials, communications and user tracking" (Sánchez et al., 2004, p. 3). VLEs can contain different functions such as: "text, audio- or video-based lectures, chat groups, discussion fora, electronic examinations and queries, electronic mail and libraries providing links to electronic documents" (Keller, 2005, p. 300).

Powell and Minshull (2004, p. 5) provide a useful graphical representation (figure 1) that demonstrates the various functions of VLEs. Clearly different provider and learner requirements influence the relative weighting of the various functions. For example, where tracking of learner participation is considered important a greater emphasis on management will take primacy, conversely if the main requirement is to provide remote access to course material then clearly there is a greater emphasis on the role of content provision.

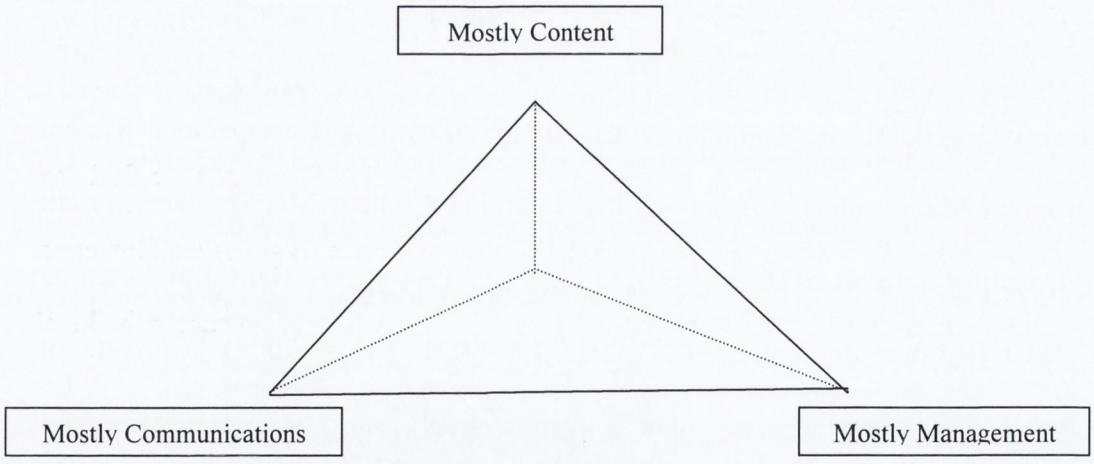

Figure 1 – Powell & Minshull's Functions of a VLE

Most VLEs provide basic templates within which content is inputted and arranged. Minshull (2004, p. 4) defines VLEs as a single piece of software that incorporates the following elements:

- Content management and delivery
- Communications
- Assessment
- Tracking
- Administrative tools, which may include links to other systems, notably Management Information Systems (MIS) or Managed Learning Systems (MLS) or Managed Learning Environment (MLE) – the various terms are often used interchangeably

The communications element is arguably one of the strongest elements of VLEs, facilitating both synchronous and asynchronous communication. Whilst VLEs do indeed provide learners with the opportunity to access course content and resources from remote locations, "for many educationalists, a key to the real potential of the computer lies in its ability to promote collaboration" (Abbott, 2001, p.63). If VLEs are to be more than simply a remote repository of course material it is the communications element that allows the lecturer to create the actual learning environment through communication. Depending upon the functionality of the VLE, communication can be facilitated synchronously using Instant Messaging, live synchronous discussions (sometimes referred to as chat-rooms) and/or asynchronously using the discussion board (either threaded or unthreaded), e-mails or the announcements facility.

The assessment element of VLEs incorporates a number of functions; at a basic level they can facilitate an online submission of an essay or report type assignments. However, aside from being used as an extended 'drop box'; they can also be used to assess the level and extent of collaborative learning (Macdonald, 2003). In addition to formal summative formats, assessments may include the use of online tests and quizzes that students can use to self-test (Gipps, 2005).

The tracking element can potentially raise a number of issues regarding the privacy of the student. For example, students need to be aware of appropriate and acceptable behaviour

and that they can be monitored (Teachernet, 2007). Depending upon the format and capability of the particular platform the lecturer is able to monitor the level of activity engaged in by the student such as the dates and times the student logged on and the pages that were visited. Thus it can provide documentary evidence of student engagement which may be a course requirement e.g. a minimum level of activities to be undertaken.

The VLE handles information directly related to the student teaching/learning process, which as previously outlined includes such functions as lecture notes and online discussions. However, aside from purely educational purposes, another of the elements of VLEs is the administrative function. These administration functions can be carried out as part of a standalone system or the VLE can also be incorporated into or linked to "other administrative systems within the university" (Keller, 2005, p. 300). The most commonly used terms for these systems include Managed Learning Systems (MLS) and Managed Information System (MIS). These systems deal with other information and functions which may not be directly connected with teaching in the classroom, rather they are concerned with such features as storing student registration details, module information and financial information (Chin 2002).

There are a number of models of on-line delivery that are employed by HE institutions, these include: Content plus Support, Wrap-around and an Integrated model (Sánchez et al., 2004). The choice of VLE model is obviously related to a number of considerations. These considerations include: user access to computers, user connectivity to the Internet, user and provider expertise, administration of systems, costs to provider and users, course objectives and underlying course philosophical approach to teaching and learning. All of these considerations will be explored subsequently.

WebCT

Although somewhat technical in its detail, this section is very useful as it raises some issues that proved to have strong resonance with the findings in this study and thus help to inform the subsequent discussions in chapter five. Chiefly these issues were; software incompatibility, computer requirements necessary to run the VLE functions and firewall access.

Although there is a considerable degree of overlap in terms of functionality between the VLE provider's platforms there is also some debate as to the relative benefits of the various platforms. It is not the concern of this study to undertake a comparative evaluation as WebCT was the existing VLE utilised by the college and any such exercise would serve no useful purpose. However, as WebCT was the provider of the VLE employed in this research it is useful to examine a number of salient points in relation to this platform[31]. Palloff & Pratt (2001) contend that WebCT is a tool that meets the criteria for good course authoring software; offering the necessary functions for design and delivery of online education that is user-friendly and easy to navigate. However, they were referring to version 2.1 which has been supplanted by a number of subsequent versions up to and including the latest version (8.0) launched in September 2009. Each version has included higher levels of functionality; however there have also been a

[31] WebCT was originally designed in 1997 by Murray W. Goldberg, a member of the University of British Columbia's department of computer science (Kaiden, 2002). Goldberg was looking to enhance his student's satisfaction with coursework and improve their academic performance through the use of web based course tools (hence the name WebCT). In 1999, it was acquired by Universal Learning Technology who adopted the name WebCT. In February 2006 WebCT was acquired by one of its largest rivals: Blackboard Inc. One of the terms of the acquisition was that the name WebCT would continue to be used in the short term, but that the name WebCT would be phased out in favour of the Blackboard brand name. From its earliest inception in 1997 WebCT underwent a number of upgrades with increased functionality; the latest versions (as of September 2009) are vista 8.0 and campus edition 8.0. Although as previously mentioned, WebCT was acquired by Blackboard; many users still continue to refer to the original name of WebCT.

number of reported issues regarding compatibility, notably conflicts with the existing computer builds.

Even when the VLE platform is reliable, the user confident and competent, good availability of hardware and a fast reliable Internet connection, there may be some issues that remain outside the control of the learners and/or the provider institutions. For example, amongst the five issues highlighted by Robertson & Klotz (2001 as cited in BECTA, 2004) regarding the conversion of courses for delivery by WebCT, was the issue of firewall protection blocking the synchronous communication features that are utilised in the 'chat rooms'. Powell and Minshull (2004, p. 13) also reported this phenomenon, commenting that "real time chat seems an exciting possibility, but [it] is perhaps the least useful in practice ... partly because chat can often be blocked by firewalls".

Software and internet browser requirements have dogged the use of VLEs including WebCT. The problems whilst tiresome have generally been quite easy to solve for someone who is reasonably computer literate and confident. Aside from the problems with firewall access other major software problems reported are browser incompatibility and the needs for software plug-in upgrades. Some of the functions of WebCT such as whiteboards, multimedia content and synchronous discussions require software plug-ins; the most common of these include: Windows Media Player, RealPlayer, Quicktime, Shockwave, Flash and the Adobe Reader. While many users might have some version of these software packages already on their computers they can sometimes find that when they initially use WebCT they either do not have the correct software packages or they may have an older incompatible version of the software. For example, campus edition

and vista 8.0 require Sun Microsystems Java Runtime Environment (JRE) to be installed in order for certain areas to run properly (Blackboard, 2009).

In terms of internet browser, WebCT only supports certain versions of Netscape and Internet Explorer. While it is possible to log in to WebCT with a variety of browser brands and versions, there may be problems with certain functions within WebCT. Most problems with WebCT are due to the use of an unsupported browser or a supported browser that is misconfigured (Idaho State University, 2008). To overcome problems of browser incompatibility WebCT/Blackboard offer compatibility checks simply by following a link when a user's logs on the VLE. In the case of plug-ins and browser compatibility the solutions are relatively straightforward for the confident and competent ICT user often requiring the user to simply download new software or modifying existing internet settings. However, for the novice user, as many adult learners are, such supposedly straightforward tasks can be stressful and difficult if not downright impossible. Another issue of note is that plug-ins are often quite large in terms of size, this size can be very problematic if the user is attempting to download using a slow dial-up internet connection. Broadband makes it feasible to download large programmes that people with a dial-up connection would never dream of attempting to download (Arar et al., 2007).

Issues in using VLEs

Whilst some of the issues raised are of course relevant to all students in a variety of educational and learning settings, there are a number issues that are specific to non-traditional adult learners using VLEs in conjunction with a third level institute as opposed to full-time students attending college on a full-time basis. The following

section explores various issues in the utilisation of VLEs in relation to a) how the learners use and interact with the VLEs; b) the issues for education providers and policy makers. Where appropriate, the issues specific to non-traditional students using will be explored in addition to the items raised.

The E-learner

The adult e-learner is first and foremost a learner; despite the advances in technologies the basic needs and wants are essentially the same regardless of the delivery platform. Many adult learners are required to balance work, family and social life though not necessarily in that order. In comparison to traditional face-to-face learners, online distance learners need to manage their learning much more assiduously and are often required to be more self-directed and to monitor their own thinking and action as they work towards the objectives of the course (Wang et al., 2008).

Clarke (2004) notes that whilst there is still a lack of clear evidence as to what constitutes a successful e-learner he does identify some of the necessary characteristics:

- Confidence as an independent, successful learner, especially when learning in non-formal settings (e.g. in your home, work or community);
- A positive attitude to learning;
- Being self-motivated to succeed;
- Having effective communication skills;
- An ability to collaborate and co-operate with other learners;
- Being a competent and confident user of ICT.

(Clarke, 2004, p.6)

Creanor et al.'s (2006b) LEX study provides a high level of insight into the lives of adult e-learners who were trying to juggle the demands of study, work and family life. The LEX study interestingly did not rate the ability to use the technology as highly as the ability to manage their time effectively and to be able to mobilise support networks socially to provide and derive mutual support.

User Perceptions and Acceptance of ICT

The final of Clarke's characteristics relate to being a competent and confident user of ICT; however, being a competent and confident user depends on a number of variables one of which is the user's view and acceptance of new technologies – in this case VLEs. One particular stream of research has focussed on e-learners willingness to accept and engage with ICT. Studies have shown that "despite the perceived necessity of new and sophisticated technology; the end users of such technology may not readily embrace such tools" (Gibson and Harris 2008, p. 355). Research in this area has resulted in the development of a number of theoretical models drawing from a range of diverse disciplines that include psychology, information systems and sociology (Venkatesh et al., 2003).

Christina Keller (2005) used the three theories of technology acceptance (TAM), innovation diffusion theory (IDT) and implementation as a learning process (communities of practice) to look specifically at VLE (as opposed to general technology) acceptance. Keller (2005, p. 310) summarises the three perspectives thus:

- The perspective of technology acceptance provides important insights about the interface between user (teachers and students), technology (the VLE) and task (the subject matter presented in the VLE).
- The perspective of diffusion of innovations emphasizes dimensions of the decision process of adapting or rejecting the VLE as an innovation both on an individual and on an organizational level.
- The perspective of communities of practice emphasizes the importance of the different groups within the university, their impact on the implementation process and their communication through the VLE.

Keller (2005) argues that whilst the different models each have something to offer, it is the learning process (communities of practice theory) that may best contribute to a better

understanding of the implementation of VLEs. The learning process theory argues that VLEs should facilitate and encourage informal communication and be designed for participation; participation which can be peripheral as well as extensive. For busy adult learners this last point is crucial, if learners feel that they can only use the VLE successfully by fully utilising all aspects of the VLE they may feel dissuaded to use the VLE if they can only do so marginally or infrequently.

Venkatesh et al. (2003, p. 427) identify eight theoretical models that identify the key components and "determinants of intention and/or usage". In their analysis, Venkatesh et al. (2003) focus on usage as the dependent variable and examine the factors that dissuade or encourage users and/or potential users. The eight models identified are: Theory of Reasoned Action (TRA); Technology Acceptance Model (TAM); Motivational Model (MM); Theory of Planned Behaviour (TPB); Combined TAM & TBP (C-TAM-TBP); Model of PC Usage (MPCU); Innovation Diffusion Theory (IDT); Social Cognitive Theory (SCT).

Davis' TAM (1989) has become the dominant theory and one of the most widely used tools for researchers in this area (Gibson et al., 2008). Notwithstanding the popularity of the TAM, the other models also identify a number of other determinants of usage and are thus worth considering. There is a degree of overlap and commonality between the eight models identified; consequently, rather than reproduce all eight models table six overleaf provides a summary of four of the more notable models (Adapted after Venkatesh et al., 2003, pp. 428-426).

Model	Core Construct	Definition
Technology Acceptance Model (TAM)	Perceived usefulness	The degree to which an individual believes the technology can enhance their job
	Perceived ease of use	The degree to which an individual finds the technology is easy to use
Motivational Model (MM)	Extrinsic Motivation	Users will want to use the technology because it is perceived to produce outcomes that are distinct from the activity itself e.g. improved pay, promotion
	Intrinsic Motivation	Engaging in the act of technology usage for no apparent reinforcement other than the process of performing the activity 'per se'
Model of PC Usage (MPCU)	Job-Fit	The extent to which an individual believes using the technology can enhance the performance of their job
	Complexity	The degree to which an innovation is perceived difficult or easy to use
	Long-term consequences	Perceived long term outcomes of using an innovation
	Affect towards use	Feelings of joy, depression, elation or displeasure associated with an individual act (in this case technology use)
	Social factors	The individual's internalisation of the reference group's subjective culture
	Facilitating conditions	Factors that make an act easy to accomplish
Innovation Diffusion Theory (IDT)	Relative advantage	The degree to which an innovation is perceived to be better than its precursor
	Ease of use	The degree to which an innovation is perceived to be difficult or easy to use
	Image	The degree to which use of an innovation is perceived to enhance one's image or status in one's social system
	Visibility	The degree to which one can see others in one's organisation using the innovation or system
	Compatibility	The degree to which an innovation is consistent with existing needs, values and past experiences of potential adapters
	Results demonstratability	The tangibility of the results of using the innovation
	Voluntariness of use	The degree to which use of the innovation is perceived as being voluntary or free will

Table 6 Models of Technology Acceptance

Whilst the four models identified produce seventeen core constructs it is possible to discern four themes from these constructs; which are formulated into the following

heuristic device: they are: Usage, Benefits, Social and Personal (UBSP). 'Personal' refers to constructs that incorporate how the use of technology makes people feel; the level to which they feel compelled to using the technology. 'Usage' refers to those constructs that focus on how easy or complex the technology is to use. 'Benefits' incorporates those constructs that focus on perceived usefulness and the opportunity to gain advantage from using new technology. Finally, the 'Social' theme incorporates the constructs that focus on the ways and means that societal perceptions influence and shape the user's perception of the social worth of engaging or not engaging with the new technology. Table seven below presents the seventeen constructs under the four themes identified.

Usage	Benefits	Social	Personal
• Perceived ease of use • Complexity • Facilitating conditions • Ease of use	• Job-Fit • Perceived usefulness • Extrinsic Motivation • Relative advantage • Results demonstratability • Long-term consequences	• Social factors • Image • Visibility	• Intrinsic Motivation • Affect towards use • Compatibility • Voluntariness of use

Table 7 UBSP Heuristic Framework

Although the terms employed might differ; elements of these themes can be found in a wide range of other studies, books and reports (Keller and Cernerud 2002; Mac Keogh 2003; Englebright 2004; Rogers 2005; Salaway et al. 2006 and Chin et al. 2008). All of the themes and constructs, to a greater or lesser extent can be found in other works, nonetheless, two strong themes that continuously emerge are: ease of use and the usefulness or the accrued benefit of using the technology (professionally and/or socially) which certainly mirror the themes of usage and benefits identified.

A particularly elegant way of combining the themes of usage and benefits is Verdegem and Verhoest's (2008) 'relative utility theory'. Reworking the economic concept of marginal utility[32] to their sociological concept of relative utility is at the heart of their theory – "the notion of 'cost' is extended to any effort needed to appropriate a product, which is not only money but also, for example, the time required to acquire skills" (Verdegem and Verhoest, 2008, p. 4). Unless a user or a potential user can clearly see benefits of using a new technology, the time required to master the technology may well not compensate for any potential benefits. Therefore, even if a new technology (such as a VLE software package) is relatively easy to use, it may not encourage acceptance if the end benefits are not perceived to be noteworthy. Conversely something that is difficult to master may yet be accepted because it offers greater potential rewards. They contend that there is a hypothetical tipping point for the adoption of ICT, "namely the point at which the benefits will outweigh the costs of appropriating an ICT product for a certain category of users" (Verdegem and Verhoest, 2008, p. 4). This 'relative utility theory' has of course a wide range of applications across diverse groups. However, when one considers that adult learners are generally combining a number of roles, the importance of maximising any and all opportunities cannot be overstated. For busy adult learners all activities have to be weighed up and accounted for, thus the 'relative utility theory' is highly relevant.

Theories of acceptance should in no way imply that each user and/or potential user is a tabla rasa devoid of social or cultural context. A number of factors have been identified that can either hinder or encourage a positive predisposition to technology. Keller & Cernerud (2002) note that the degree of technology acceptance depends on a number of

[32] Assuming economic rationality, the economic utility of a good or service would be the least urgent use of the good or service, from the best feasible combination of actions in which its use is included.

variables; these include the age and gender of the user or potential user. For example, younger students are more likely to have at least some prior exposure to e-learning in secondary school compared to older students who may have encountered computers for educational use for the first time in university or college (Keller & Cernerud, 2002). Verdegem and Verhoest (2008, p. 3) note that "age is still one of the most important dimensions of ICT inequalities: increased age is associated with lower levels of access, limited modes of use and patterns of connecting". The Central Statistics Office's most recent study into ICT usage seem to bear out this apparent relationship between age and Internet usage: "almost 66% of persons aged 16-24 used the internet in 2007, while 18% of those aged 65-74 indicated that they had used the internet in the same period" (CSO, 2008, p. 6). Paul & Stegbauer (2005) argue that it is not lower income that keeps older people from connecting less than the younger people; rather it is the general difficulty of interpreting and contextualising the available online information.

Gender is another contextual variable that has been identified, Keller & Cernerud (2002, p. 56) contend that:

> Irrespective of age, men are supposed to be more used to computers than women. Women typically display lower computer aptitude and higher levels of computer anxiety. Research has indicated that men's technology usage decisions are more strongly influenced by perceptions of usefulness. In contrast, women are more influenced by perceptions of ease of use.

A five month study carried out by Venkatesh et al. (2000) on 355 workers focusing on new software technology acceptance in the workplace found marked differences in the decision-making process between men and women. They contended that men were more likely to adopt and accept technology if they could see or appreciate substantive productivity benefits; women on the other hand were more likely to be "influenced by subjective norms and perceived behavioural control" (Venkatesh et al., 2000, p. 50). Furthermore, they found these results to be consistent regardless of occupational

position, income and levels of education. Aside from levels of usage and general knowledge about ICT, differences have also been noted in the manner that men and women use and interact with web-based education platforms. An admittedly small study (n=27) by Arbaugh (2000) of an internet based MBA programme found that that men, relative to women reported more difficulty interacting. Regardless of such factors as age and gender, the ease of use and the level of training required to use the platform are crucial if the student is to maximise their level of engagement, in other words the question that needs to be asked is: how user friendly is the platform?

Usability

As previously mentioned; IT Access for All (2000) published by the Information Society Commission noted access should take account of usability, user-friendliness of the hardware and software and general reliability of the technology. E-learning platforms, regardless of their range of functionality, the lecturer's preference or the ease of use are only effective if users feel comfortable using computer technology or if the learning curve is not too steep (Chin 2002). Whilst there is the understandable focus on course content, usability and quality of learner experience is paramount. If the interface is not user-friendly and thus it becomes time-consuming to access material the learner's focus shifts to navigating around the VLE rather than content or learning activities. "Good usability, on the other hand, allows the user to focus on the content thus improving learning results" (Ihamaki and Vilpola, 2004, p. 103). Bearing in mind that ease of use is to a certain degree a subjective rather than an objective measure, Chin (2002, p. 7) argues that there are a number of characteristics that universally constitute ease of use; these include "presentation (look and feel) of the VLE, how easy is it to navigate the system? ... [and is it] functionally customable to suit local needs?" Regardless of how user-

friendly and attractive the interface is, user willingness and/or knowledge and skill level must be incorporated into the decision-making process. There is a reasonable and practicable limit to the degree that a platform provider and/or local course designer can incorporate usability considerations that take account of diverse levels of willingness to engage and technical competence. In terms of the interface, this situation can be analysed on two levels "on the one hand there is the need to be psychologically comfortable with the technology, (maybe needing to overcome techno-phobia) and secondly there is the need to be technically competent" (Leask and Younie, 2001, p.26). As referred to previously, the LEX study (Creanor et al. 2006b) reported that prior IT skills or the type of technology used within the course was of less importance than a willingness to learn. Leask and Younie's (2001, p. 227) "emerging typology of users" (figure 2) provides a useful way of conceptualising the overlapping nature between ICT skills and the user's personal experience and how they combine to produce different types of users.

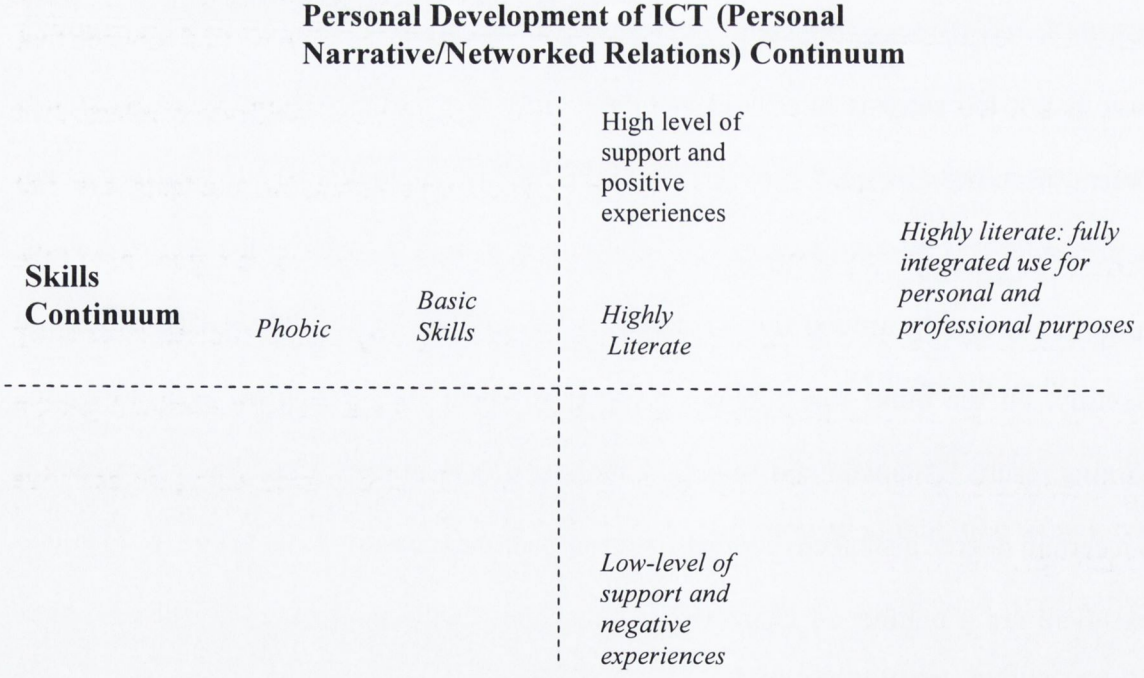

Figure 2 – ICT Skills/Personal Development Continuum

If one were to characterise the OEL group along the skills continuum, it would be reasonable to place the majority of the group (at the start of the programme) at somewhere just to the left of the intersection between the two axis although there were a number of 'outliers' who could have been described as either phobic or highly literate.

Accessibility – Disability

For some adult learners the choice and availability of learning opportunities may be limited due to external constraints such as a disability which may impact on their capacity to attend traditional classroom settings. Virtual or e-Learning has certainly presented new opportunities for people with a disability; especially for those who find travel difficult, which can of course make classroom-based learning problematic (Runa, 2004). "Indeed, for many people with severe disabilities or chronic illness, distance learning may be the only practical means of access to higher education" (Richardson, 2009, p. 87). However, this should not imply that e-learning is some sort of panacea that will make learning opportunities available for everyone with a disability regardless. Just as the technologies that are utilised to support campus-attending students are not necessarily appropriate for distance students; the same point can also be argued about the specific needs of students with a disability. For example, Coyne and Nielsen's usability study (2001) found that it was six times more difficult for a visually disabled person using a screen reader to use the Internet than a non-disabled person using no assistive technology.

Runa (2004) has highlighted two key issues that VLEs need to contend with in terms of making them more accessible and usable to users with a disability. In effect the main

problems are in terms of interoperability and compatibility between the VLEs and other software elements:

- They allow for the creation of content in a variety of formats that is not checked by the software so that it may well not accord with accessibility guideline when uploaded.
- Some tasks within the VLE also require course managers to code HTML which again is not internally checked by the software to accord with W3C[33] standards (Runa 2004)

Failure to address these issues can result in difficulties for people with a disability accessing VLEs. Keeler and Horney (2007) have identified a number of issues, ranging from internal software issues to failings from poor instructional planning and/or delivery. Providing course material only in textual format without providing audio alternatives may exclude individuals with visual or reading disabilities from the course. If the course requires extensive use of synchronous 'chat' rooms, students with limited mobility and dexterity may find their participation marginalised; although this situation may be helped by limiting the number of students who participate. Advocating a blended approach to the use of VLEs Keeler and Horney (2007, p. 68) advice is that consideration should be given to "both Web-based and non-Web-based technologies necessary for students to fully and successfully participate in an online course".

Institutional issues in the use of VLEs

From an institutional perspective the main advantages of using VLEs reportedly are: flexibility of time and space, coping with increased student numbers, sharing and re-using of resources, collaborative work and reduction of the administrative burden (Britain and Liber, 2004). However, the successful implementation of new technologies also presents a number of challenges to organisations. Bates (2005, p. 63) asks organisations to consider the two following questions:

[33] World Wide Web Consortium (W3C) is a set of internationally agreed compatibility standards including Web accessibility guidelines for public websites.

- What opportunities or threats exist in the external environment that may influence the choice of particular technologies?
- What are the internal organizational requirements, and the barriers to be removed, before this technology can be used successfully?

Ma et al. (2000, p. 210) identify two principal drivers of the development of virtual programmes in education. Firstly there is the push factor of the availability of suitable technology - the "fact that virtual learning has become technically feasible is a great motivator to at least attempt it". Secondly there is the pull factor - whereby university administrators feel the need to offer at least some part of their education services via a virtual platform "in order not to be left behind in this market segment, or simply because the competition is doing it" (Ma et al., 2000, p. 210). One of the main issues to emerge with regard to institutional use of VLEs is that some colleges are not quite sure how to use them. There may be a temptation to implement VLEs because colleges have invested heavily in terms of staff time and financial outlay. Hannan (2005) argues that Higher Education institutes need to create climates that are conducive to employing innovative ICT strategies "where pedagogical and curriculum concerns drive technological developments rather than vice versa" (Hannon, 2005, p.975). It is almost as if colleges are saying: "we have this expensive product, should we not use it, rather than saying how can we offer a different type of learning experience using new technologies?" (Hannon, 2005, p.975).

The Universities of Ireland (2004) symposium paper on e-learning claimed that one of the primary advantages of VLEs is that they do not require high levels of technical skills or programming ability on the part of the teacher or lecturer. However, assumptions that ICTs in education would reduce costs, especially the costs of expensive human resources, such as teachers/tutors have proved to be somewhat wide of the mark (Lentell, 2003).

For example, using a VLE will generally be a new experience for most teaching staff hence; "however intuitive and user friendly the learning platform is, it is not realistic to expect tutors to be able to use it without substantial training and support" (Powell and Minshull, 2004, p. 14). They (Powell and Minshull) argue that in order to be effective, staff training should focus on using the software as a learning platform

> ...rather than its technical intricacies ... there does need to be technical training – tutors need to know how to use the various features ...[but] training should be structured around the specific teaching and learning needs of staff, rather than the technology (Powell and Minshull, 2004, p. 14)

A study carried out by Northern Ireland's Department of Education into the use of VLEs in second level schools was quite emphatic in its recognition of the importance of teacher education in order to successfully implement VLEs. One of the report's principal findings was that "considerable time and training must be afforded to teachers who wish to develop VLEs" (Department of Education, 2005, p. 5).

In addition to training needs of staff, Powell and Minshull (2004) identify a number of administrative support elements that need to be considered by institutions providing VLEs. These elements may include:

- General configuration of the platform (usually, just a one-off task)
- Maintenance updates of the software (e.g. to install new versions, fix bugs, implement new features)
- Registration of users
- Supporting tutors in developing content, e.g. sourcing content, creating templates, etc.
- Uploading content
- Providing the interface with management information systems
- Providing a backup regime

(Powell and Minshull, 2004, p. 11)

Powell and Minshull (2004) recognise the limitations of their list; the type and level of administrative support required will vary considerably, depending upon a number of issues such as the complexity of the learning platform, whether it is an in-house development or an off the shelf package, the number and type of users.

A particularly useful resource in identifying issues regarding the management and implementation of VLEs in UK educational institutions are a series[34] of studies carried out by Jenkins et al. (2001), Browne & Jenkins (2003), Jenkins et al. (2005) and Browne et al. (2008) on behalf of the Universities and Colleges Information Systems Association (UCISA) and funded by the Joint Information Systems Council (JISC). The reports' findings whilst relating to the UK did highlight a number of key aspects, which are worth considering. VLEs are widely recognised within educational institutions as an important strategy for the future delivery of programmes; the motivation behind this drive for greater use of VLEs ranged "from efficiency to pedagogic reasons and increased flexibility" (Jenkins et al., 2001, p.3).

Whilst there was strong recognition of the potential that VLEs offer, this recognition was often "poorly matched by delivery" (Jenkins et al., 2001, p.3). However, the Jenkins et al. (2005) and in particular the Browne et al. (2008) survey both acknowledge that the situation has considerably improved since the initial Jenkins et al. (2001) survey. Browne et al. (2008) report that the enhanced stature of e-learning (or Technology Enhanced Learning (TEL) - the term used in the 2008 Survey) has resulted in a concomitant improvement in the depth and range of support and services provided. Nonetheless, despite these improvements the reports note that staff implications in terms of numbers, time, training and institutional cultures remain a consistent feature and source of concern and possible barriers to expansion of (or even continued) e-learning provision.

[34] The 2005 and 2008 studies included a number of extra sections however, the VLE style questions used in the 2001 and 2003 surveys were largely retained in order to extend the longitudinal comparison

Student Support

In the context of online distance learning, Tait (2000, p. 289) defines student support as the "range of services both for individuals and for students in groups which complement the course materials or learning resources that are uniform for all learners". He goes on to identity the threefold purpose of student support:

> 1. Cognitive: supporting and developing learning through the mediation of the standard and uniform elements of course materials and learning resources for individual students;
> 2. Affective: providing an environment which supports students, creates commitment, and enhances self-esteem; and
> 3. Systemic: establishing administrative processes and information management systems which are effective, transparent and overall student-friendly.

It is however important to note (as Tait does himself) that understandings of the extent and nature of student support is not unproblematic. For example, if a programme's provider is following a more managerial didactic model the support may concentrate heavily on item three i.e. the systemic functions. Conversely a constructivist programme will require an emphasis on support that focuses on the cognitive and affective as well as the more prosaic roles associated with administrative functions (Tait, 2000).

Although software usability and reliable technology can greatly reduce student demand for help, the provision of a technology help desk is essential for any computer-based distance learning (Bates, 2005). Technical support of e-learners, particularly remote e-learners has been identified as an important factor in determining successful or unsuccessful engagement with VLEs (Thyer et al., 1998; Ingraham et al., 2002; Moron-Garcia, 2002; Gardner et al., 2005). This type of learner will not necessarily have the opportunity to meet with support staff face-to-face; therefore the provision of appropriate accessible specialist support resources is very important. Technical support requests vary, but include some or all of the following: login difficulties, hardware compatibility,

firewall access denial, the loss of a password, connectivity issues, software uploads[35] or simply how to use the VLE (Moron-Garcia, 2002; Salmon, 2003; Gardner et al., 2005; Bates, 2005).

The technical support and system administration section of the four studies (Jenkins et al., 2001; Brown and Jenkins, 2003; Jenkins et al., 2005; Browne et al., 2008) were concerned with examining which units in the institutions provided technical support (as opposed to content development or advice on how to use the VLE) for both students and staff (lecturing and/or designers). Browne et al.'s (2006) summary of the 2005 study painted a picture of a somewhat disjointed level of support for VLEs. Support for VLE users ranged from central IT support units, Learning and Teaching Units and dedicated e-learning and/or VLE coordinators. Generally the majority of the support appeared to be aimed at supporting teaching staff in using and preparing course material and activities in a manner that complemented VLE delivery. In all four studies the consistent themes appeared to be (i) a greater emphasis on staff training and development in comparison to students training and development and (ii) a lack of clarity of purpose as to the roles and responsibilities within different units in institutions. Importantly there appeared to be a level of inconsistency regarding the responsibilities for support of off-campus students when they were faced with technical difficulties regarding their use of VLEs.

As previously highlighted, the issue of staff development and training is an important issue when considering how best VLEs might be implemented. Despite widespread commitment to using e-learning; allowance for staff academic development time in 2008 remains at a similar level to the 2005 and 2003 with approximately 50-54% of the

[35] For example JAVA, Adobe

respondents indicating such an allowance (Browne et al. 2008).Whilst few if any would argue that academics need time and resources to "develop good, pedagogically sound material" (Jenkins et al., 2001, p. 20) the experience of the academics is that this is not always the case. Ingraham et al. (2002p. 34) argue that if students and academics are to use VLEs to their potential, technical support will require "24 hour a day support, 7 days a week, 365 days a year even for institutions that are largely concerned with campus-based activities". However, the availability of extensive support for academics and learners is somewhat problematic, varying from institution to institution.

The surveys also investigated what student support is provided by the institutions and from what source within the institutions this support came from? The surveys consistently indicated that there were three principal types of support: (1) face-to-face, (2) printed guides and (3) online support & training. The most common source of student support in the institutions was provided through the Central IT unit with the Learning Technology Support Unit (LTSU) being the second most common source of support. Although many of the institutions provided more than one type of support, the four studies indicate that there has been a steady increase in the number of institutions providing student support – in 2001over one third of the replying institutions provide no dedicated VLE support for students (Jenkins et al., 2001), by 2008 this had been reduced to 7% (Browne et al., 2008). Some of the responses indicated that the use of VLEs themselves was seen as providing special provision for distance learners. This seems somewhat incongruous; indicating that VLEs are a source of support yet providing limited support to use the same VLEs. One particularly interesting piece of data relates to the level of specialist support provided to distance and off campus learners. Somewhat surprising is the reported drop in the number of institutions providing specialist support

and/or focussed training from 45% in 2001 to 39%[36] in 2008. The 2008 and 2005 studies also include another category: off campus learners; the percentage of institutions providing specialist support for this group is again surprising - 23% (2005) and 22% (2008). Where specialist provision was made the type of support provided included (Jenkins et al., 2005):

- Special arrangements for technical support
- Support/helpline
- Outreach centres
- Identifies helpdesk staff
- Special documentation
- Online guides

However, it would be misleading to consider that learner support is or should only be provided by colleges. The ability to mobilise other informal supports such as friends, classmates or family members can be just as important as accessing formalised institutional support. For example, the LEX study (Creanor et al., 2006, p. 11) noted that: "effective learners tend to be highly skilled networkers and often use the technology to pull in support when needed. Family members were often the first people to be approached for help".

VLEs – Lessons from Studies

Although a large number of studies are referred to in this thesis, one of the principal sources utilised was the work carried out by Creanor et al. (2006, 2006b) in the LEX (Learner's Experiences) on behalf of the Joint Information Systems Committee (JISC). Of particular interest to this study in terms of framing the research question, methods,

[36] Figures for 2003 and 2005 are 34% and 38% respectively.

analysis and approach were the three main questions that the LEX (Creanor et al., 2006) study posed:

- What might characterise effective learners in an e-learning context? (e.g. IT skills, confidence, technology-rich background)
- What beliefs and intentions do effective learners display?
  (e.g. understanding of the teaching and learning process and their role within that, personal motivation, emotional aspects of technology use.)
- What strategies do effective learners display?
  (e.g. managing their learning, fitting life around learning, coping with problems, willingness to engage in e-learning)

However, as previously indicated there have been a wide range of other studies such as the longitudinal studies of Jenkins et al., (2001); Brown and Jenkins, (2003); Sharpe et al., (2005); Browne et al. (2006) and (2008). In an Irish context a particularly relevant piece of research was Michael Kenny's (2006) 'Growing an E-Learning Programme for Rural Adults: A Case Study' which focussed on a group of adult learners undertaking a BSc degree in rural development though a blended learning approach combining face-to-face classes and online learning.

The principal lessons that Kenny (2006) identified were:

1. Blended learning does not replace classical learning methods, it augments it.
2. Successful effective blended learning is primarily about the people, not about the technology.
3. [The need for] synergy and challenges in inter-institutional collaboration
4. This form [blended] of learning is becoming increasingly accepted, needed, valued and opportune.
5. Dedicated application of adult education principles is critical for successful outcomes from blended learning programmes.

Elements of Kenny's (2006) lessons were also evident in other VLE studies notably points number two, three and five. The Timmis et al. (2004), Sharpe et al. (2005) and Creanor et al. (2006) studies all argue that educational technologies are there to support the learners not the other way around and that this point is crucial if one is designing and delivering an education

programme that employs an online learning element to its teaching and learning strategy. Again the debate returns to the role and purpose of education – functionalist/managerialist or humanist? The functionalist/managerialist approach is more likely to see the use of VLEs in terms of maximising education and training opportunities in order to meet economic imperatives and consequently is driven by different concerns and approaches to education in comparison to the humanist (and resource intensive) approach.

As highlighted in the section regarding institutional issues and student support there is a great need for collaboration, such as in Kenny's (2006) study which was between the constituent colleges of the programme or in the case of Timmis et al. (2004) and Creanor et al. (2006) between the various stakeholders such as educators, students, managers, college authorities and technologists. In terms of the debate about the role and purpose of education lesson five is arguably the most important point and is certainly evident in a numbers of other studies (Jackson, 2003; Entwistle et al., 2002; Timmis et al., 2004; Creanor et al., 2006; Conole et al., 2006) that is, the need for the programme to be underpinned by sound educational principles. If lesson two raises issues about the importance of people vis-a-vis the technology, lesson five reminds us that the primary aim of an education programme is to educate, regardless of the delivery platform. Using VLEs allows (amongst other things) the uploading of videos, links to websites, online quizzes, creation of discussion boards and interactive 'real time' chat rooms. It is all too easy to become seduced by the functionality that VLEs can offer and lose sight of the purpose of VLEs, that is – to educate. The key word in the term VLE is 'learning' the aim is to create a learning environment. In this case the VLE is the process; it is learning that is the product. If educators lose sight of that fact they have failed to take heed of lesson five.

Another particularly useful piece of research offering contemporary Irish data (Cosgrave et al., 2008) was carried out by five universities in Ireland in 2008. Although a somewhat limited (by its own admission) study it is nonetheless very important as it is the first large-scale study into student usage of VLEs in higher education institutions in the Republic of Ireland. In the context of exploring insights into distance adult learners it is restricted as it surveyed all registered students, both attending and remote. Nonetheless, the survey does provide some very useful data and hence some interesting points for discussions which are summarised below:

- Levels of usage appeared to be consistent with the length of time that the institution had been employing a VLE
- It is important to guarantee that the VLE system is adequately supported, that it has high levels of reliability and response times
- The highest reported reasons for using VLEs were to access lecture notes and other course materials which tends (in conjunction with other data) to suggest that the systems are being used superficially as a teaching environment and simply a repository of material or an 'online filing cabinet'.
- Interestingly, the survey found that once a basic level of usability and reliability was guaranteed the choice of platform provider was not a critical issue. This point provides some food for thought, especially for those institutions that have invested in proprietary as opposed to open-source providers.

VLEs appear to be generally used to support traditional content-based teaching styles as opposed to mainly or wholly online programmes. Nonetheless, Cosgrave et al. (2008) see this step in positive terms; at least the VLEs are being used, albeit somewhat narrowly. Consistent with other reports and studies (Willett, 2002; Jackson, 2003; Creanor et al., 2006; Salaway, 2006); the authors found that the VLEs were not necessarily used in the

manner envisaged by either the lecturers and/or the educational technologists. Appealing to students to fully utilise VLEs simply because the various functions exist can result in minimal participation. The design and implementation of VLEs should offer the learner a meaningful educational experience. From the learner's perspective the VLE platform should add to their learning and not take an unreasonable amount of time to access and master. As Powell and Minshull (2004, p. 16) argue: "A learning platform that is hard to use – however pedagogically sound or technically advanced – will not be used".

The issues raised in the VLE section of the literature review had the greatest influence in framing the nature and direction of this study. Of primary interest was the ways and means by which adult learners made sense of the learning experience of the VLE and the manner that they dealt with the various problems and issues that have been highlighted in this review of the literature. Of particular relevance and importance in terms of influence was the LEX (Creanor et al., 2006) report which echoed the earlier Sharpe et al. study (2005) in terms of research focus and methodology. Both studies noted that the majority of e-learning research undertaken often focuses on higher rather than adult, community or work-based education.

Virtual Learning Environments - A Summary

- The typology of VLEs can at its most basic level be reduced to the difference between propriety and open source. However, as was explored later in the section this division can have a significant bearing as colleges may feel compelled to use expensive proprietary VLEs simply because they have spent a lot of money rather than for educational reasons.

- WebCT/Blackboard, while developing into a very useful platform has had a number of issues in terms of its incompatibility with some web browsers and the need for software plug-ins.
- Regardless of technological problems there remains the important issue of user acceptance and willingness to engage with technology (including VLEs). If users do not perceive a technology to be useful and relatively easy to use they may simply not engage with it. The heuristic framework (table seven) offers a useful way of mapping and understanding the various elements that influence user acceptance or rejection of technology.
- From the colleges' perspective the use of VLEs certainly offers new ways of providing teaching and learning opportunities. However, there are issues of staff development and training and the provision of support to staff and students that need to be addressed.
- Again, depending upon the rationale and philosophical underpinning that is adopted by adult education providers the manner in which will have a huge bearing on VLEs are used in a programme. If VLEs are to be utilised in a meaningful manner that provides and promotes adult education it needs to be underpinned by a student-centred approach that seeks to understand how learners actually use the technology.

Blended Learning

Whilst VLEs do indeed provide the capability and possibility of fully online delivery of education programmes, most of the technology integration taking place in universities can be more accurately described as 'blended learning' (Minnimis & Dafoulas, 2008). Similarly to the term e-learning, the term blended learning incorporates a diverse range of definitions - there are a number of models and debates as to what exactly constitutes

'blended learning' (Valiathan, 2002; Australian National Training Authority, 2003; Clark, 2003; Alonso et al., 2005; Oliver and Trigwell, 2005). The simple answer is that there is no universally accepted definition. Oliver & Trigwell (2005) have identified a number of definitions (and the limitations of each definition) these include: mixing e-learning with traditional learning, mixing online learning with face-to-face, mixing media, mixing learning theories, mixed learning objectives and mixing pedagogies.

However, this lack of clarity is not necessarily viewed by everyone as being a problem; in fact Driscoll (2002, cited in Sharpe et al. 2006: 19) "concludes that it is this lack of definition, meaning different things to different people, which gives the term potential". Sharpe et al. (2006) have noted that it is the very elasticity of the term which allows staff debate and construct their own interpretation thus encouraging a greater degree of ownership of their particular brand of blended learning project. However, Bates (2005) contends that this debate is not just an issue of terminology. He notes that governments and institutions are increasingly required to produce data relating to the number of online or e-learning courses produced; this lack of clarity can lead to a situation where many institutions "over-inflate their claims to being an online learning institution" (Bates, 2005, p. 9).

Why a Blended Approach?

The balance between the online and face-to-face components will vary for every course depending upon a number of considerations such as: the nature of the instructional goals; the underlying teaching philosophy; student characteristics, instructor background, and online resources. Some courses will favour online strategies, using face-to-face contact infrequently, whilst others will use the online element sparingly. Osguthorpe and Graham

(2003, p. 228) argue that "the important consideration is to ensure that the blend involves the strengths of each type of learning environment and none of the weaknesses".

A helpful way to conceptualise blended learning is across a spectrum[37] ranging from very little ICT usage to the other extreme where the course may well be to all intents and purposes a purely online course. A useful framework for the categorisation of online courses is offered by Martin Weller (2002, p.147) in his work 'Delivering Learning on the Net'. Weller employs a graphical model (figure 3) where the x-axis represents a pedagogical continuum extending from didactic instruction on the left to Constructivist facilitation on the right. The y-axis represents a continuum of technology employed – ranging from high-end complex technology at the top of the scale to low-end technology at the bottom of the scale. Clearly, different courses (depending on criteria and resources and philosophical underpinning) will be located at different locations along the 'x' and 'y' axis.

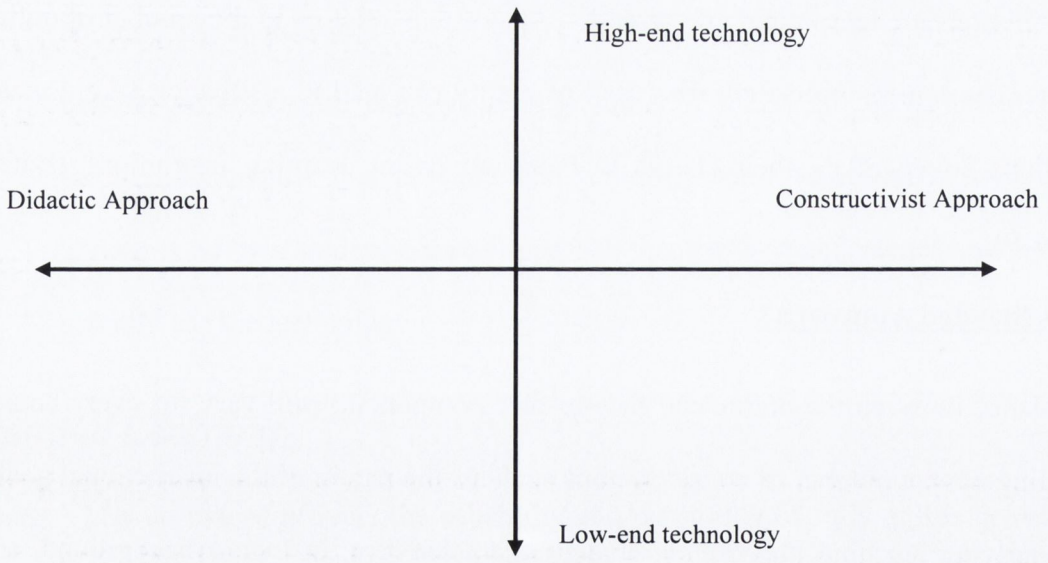

Figure 3 – Pedagogical/Technology Continuum

[37] See also '*The continuum of technology-based learning*' (Bates and Poole 2003)

For example, in making a choice for the underlying philosophical and operational considerations the low technology constructivist type course has much to recommend it - "such courses use relatively simple technology: for example, they may focus on a simple Web site containing text and images and an associated CMC[38] technology" (Weller, 2002, p.149). In a social studies or humanities course the ability to reflect and debate is crucial; Weller (2002, p. 149) argues that the suitability of low technology constructivist type delivery is

> ... particularly likely in topics that are not very technically oriented but involve a good deal of debate. Examples might be online courses in theology, history, philosophy and so forth.

Whilst the design of a course should incorporate such things as: pedagogic rationale, programme objectives, learner characteristics; there is frequently the need to balance the aspirational with the more prosaic. For example, as previously discussed, access to high-speed internet connections can have a major impact on the creation and maintenance of the digital divide. However, as also noted, connectivity speed is not just an either/or issue in terms of accessing a course. Functions in courses such as instant messaging and interactive whiteboards require higher connectivity speeds and a reliable consistent connection. Aside from instant communication, large files can be notoriously slow and difficult to download if relying on dial-up further dissuading distance students to utilise a VLE platform.

One solution to technology access issues such as bandwidth and hardware capabilities is to adopt a hybrid approach to materials design and delivery; this hybrid can be of different varieties (Rogerson-Revell, 2007). Course content at the top end of bandwidth requirements are learning objects that incorporate strong elements of multimedia; at the

[38] Computer Mediated Communication

other end the course content may be little more than lecture notes in Microsoft Word format.

Decisions regarding the design and implementation of learning environments are or should be, about addressing the practical and mundane as well as engaging in deeper philosophical debates. Blended learning as a strategy has emerged as a practical response to the issues faced by modern learners and instructors who faced with a myriad of issues to content with but also armed with powerful potential new learning opportunities presented by e-learning technologies.

Janet Macdonald (2006, p. 43) provides a useful summary of the pragmatic concerns on the adoption of blended learning:

Students	**Default**	**Influences on adoption of asynchronous strategies**	**Influences on retention of synchronous strategies**
Campus-based	Synchronous study (face-to-face) for content delivery and support to group. Informal networks happen naturally	Achieves more flexibility. But may be less attractive to students than face-to-face alternatives	Face-to-face contact relatively easy to organise for the group
Distance	Asynchronous support to individuals, some opportunities for synchronous support to group. Informal networks difficult	More continuous contact and opportunities for collaborative working. A new option, rather than replacement. Informal networks possible	Any synchronous contact with whole group difficult; but can offer choice, or support to individuals
Campus plus distance	Synchronous to group for on campus and mostly asynchronous support for distance. Informal networks difficult for distance students	Equal access for all. More opportunities for collaborative working online, and for establishing informal networks	Problematic for whole group; but can offer choice, or support to individuals

Table 8 - Pragmatic concerns on the adoption of blended learning

In terms of Macdonald's classification the OEL course would be described as a campus plus distance course although strictly speaking the face-to-face 'campus' sessions were

(aside from the briefing and welcome sessions at the start of each semester) held in outreach locations in County Cork.

Communication & Collaboration

Despite the growth and general acceptance of distance education in its various forms, there have been persistent criticisms of this form of educational delivery; that it often fails to provide for interaction among students and between students and instructors. Without this level of meaningful interaction, it has been suggested that distance education can only be an inferior imitation of the best face-to-face education because learners are unable to clarify and challenge assumptions and to construct meaning through dialogue (Bullen 1998). Some theorists (Besser and Bonn 1996, cited in Howland & Moore, 2002) argue that the move from oral to written communication utilised in electronic communication negatively impacts on the abilities of distance students to form collaborative relationships.

Unlike earlier forms of distance education VLEs offer the potential for a hitherto unavailable level of communication for remote learners, between each other, between the learners the tutor and/or the educational provider. These platforms have opened a broad spectrum of options to promote learning, of which a significant one is CMC – Computer-Mediated Communication (Erlich et al., 2005). The nature and type of CMC available; both synchronous and asynchronous provides new teaching opportunities. For example, "with the introduction of communication technologies, group work and collaboration have become a viable pedagogical approach in distance learning courses" (Weller, 2002, p.56). Descanctis et al. (2003, p. 567-8) identify three increasingly sophisticated forms of interaction that can be facilitated using e-learning:

- Declarative and Procedural Information Exchange occurs when people seek and provide relatively objective or factual knowledge with one another
- Transactive Learning is the process of sharing information about the capabilities and boundaries of knowledge that exist among members of a group
- Sense-making is the process of developing shared mental models that enable a group to coordinate its efforts, respond to novel events, absorb information, and detect and reduce errors

The three types of interaction can clearly bring about benefits for the participants; they can seek help, clarify topics or simply get some information. However, interaction can also provide social, and group formation benefits. The study carried out by Descanctis et al. (2003) amongst distance e-learning MBA students in Duke University noted that the discussions (both synchronous and asynchronous) helped to develop a sense of community and deepen relationships that had been initiated through the initial face-to-face sessions at the programme's commencement.

Participation or non-participation in online discussion forums appears to vary and did not necessarily seem to relate to prior academic achievement. For example, a study by Bennet (2003) of 17 distance learners undertaking a doctorate in education using the Blackboard VLE found that only 4 students were regular contributors to the online discussion. Another study of 293 adults who used a VLE based on Lotus Learning Space highlighted that the simple matter of access to hardware was the dominant reason for non-participation in online discussions (Thurston, 2005).

From a humanist educational perspective relationship and community building is crucial if learners, but particularly distance learners are to successfully utilise VLEs. One large-scale study (n = 314) into graduate students' patterns of use of a VLE found that the students with a stronger sense of community tended to possess greater perceived levels of cognitive learning (Rovai, 2002). Thurston (2005, p. 355) states that "the establishment of a feeling of connectedness between students has been stated as being essential to promote effective reflection and academic enhancement in the learning process". This

certainly echoes the characteristics of the successful e-learner as outlined previously by Clarke (2004, p. 6) i.e. "an ability to collaborate and co-operate with other learners". Relationships that nurture and sustain students are an invaluable source of support and certainly help to maintain student retention – this is true of any group of students. However, for adult distance learners who are attempting to juggle so many demands in terms of social and family life, the current education programme being undertaken, and the workplace, the importance of maintaining a supportive network of fellow learners cannot be overstated. Rovai (2002) stresses the importance of maintaining a sense of community with one's fellow e-learners or as he characterises it: 'connectedness'. He (Rovai, 2002) identifies the key elements for the creation and maintenance of connectedness which are summarised below:

- Mutual interdependence between members;
- Interactivity between peers;
- Overlapping experiences amongst the student body;
- Trust between peers;
- Trust between students and tutors;
- The existence of a community 'spirit' or 'camaraderie' amongst students;
- Common expectations amongst the students;
- Shared values and beliefs between peers and between the students and tutors.

Drawing on her extensive experience of moderating CMC, Gilly Salmon (2000) uses the analogy of swimmers, wavers and drowners to classify three types of student responses to CMC. Characteristics of the three groups identified include:

Swimmers

- Dive in early
- Have conference relevant experience, e.g. chat rooms on the Internet
- Usually willing to help others
- May become disruptive if they think the conferencing activities are not demanding enough

Wavers

- Need considerable help and encouragement to get started
- Depend on a telephone helpline or individual help even to appear online
- Feel there is too little time to do everything
- Do very well and become enthusiasts once they've logged on and are given support

Drowners

- Find it very difficult indeed to log on and/or reluctant to ask for or accept help;
- Have little motivation to succeed;
- Promise to log but do not;
- Complain at every opportunity that CMC is irrelevant or too time-consuming;
- Find the relationship building and socializing online difficult, especially if they are used to taking a leading role in face-to-face groups;
- Do better if a supportive swimmer is allocated to them as a mentor

(Salmon, 2000, p. 112-113)

Understanding the types and nature of CMC is important as it provides a means of ascertaining the type and level of student engagement with the VLE. If the learner is simply using the VLE to obtain course material they are potentially losing out on the opportunity to create and maintain this sense of connectedness. Learners who wish to successfully engage with virtual environment communities must "invest time and energy in a range of virtual discussions and other online collaborative activities" (Allan and Lewis, 2006, p.370).

Erlich et al.'s (2005) study[39] of 153 Social Science students with the Open University of Israel found "significantly more students visited the Computer Mediated Communications (CMC) website among students who had taken Computer Literacy & Applications (CLA) [course] prior to the CMC course, than among those who did not" (Erlich et al, 2005, p.485). Aside from CLA participation, they also found that prior Internet experience was a significant factor in determining CMC website usage: "the percentage of students with moderate to high prior Internet experience who visited the CMC course website was significantly higher than that of students with little or no

[39]The purpose of the Erlich et al. (2005:477) study was to determine 'whether taking a Computer Literacy and Applications course (CLA) before taking Computer-Mediated Communication (CMC) courses has an impact on students' participation in CMC courses and on the effective use of various CMC tools'.

Internet experience" (Erlich et al., 2005, p.483). Understandably, if these learners are to maximise their educational experience, a new and different set of skills are needed and "a lot of research has shown that, despite the fact that learners are now IT-literate (and have experience of using technologies in their daily lives, interaction with games etc) they are not academically e-literate" (Conole et al., 2006. p. 30).

Virtual learning environments may well add to the enrichment of the learning experience and facilitate communication, however, as Erlich et al. (2005) found: their "students were aware that they can manage without using the site" (Erlich et al., 2005, p. 485). Learners make a lot of choices about the tools they use; selecting those they see as most appropriate for the context and the task at hand (Conole et al. 2006). When one considers that adult learners frequently have to juggle the life-work balance it is not surprising that some students "prefer not to deal with obstacles and do not participate in CMC courses at all" (Erlich et al., 2005, p.484).

However, just because the learners are not (or apparently not) using the communication tools as anticipated does not necessarily mean that communication and the development of connectedness is not happening. E-learning as previously noted does not only include computer based technologies; PDAs and mobile phones also constitute electronic technologies. VLEs are shaped and used in different ways: "overtly (by their designers); subtly (for example, by resource restraints and other environmental factors); and subsequent to their 'delivery', by user adaptations and subversions of the designers' intent" (Whitworth, 2005, p. 686). No matter how well thought out and designed the VLEs are, they will be used and appropriated in a manner not anticipated. This is not to imply that this is necessarily something negative, this adaptability may simply reflect the

problems faced by adult learners. For example, the issues of firewalls prohibiting use of some of the VLE functions can result in learners modifying their behaviour and using external (to the VLE) communication technology such as mobile phones.

Chapter Summary

In an era of continuing education, where as Rowntree (2000) noted education has become necessary for survival; distance and open learning become an important element in the realisation of this need. However, adult learners frequently have work and care commitments thus full-time campus based education is problematic if not impossible, "open and distance education provide the flexibility needed for adults to continue their education or training while still working or with family responsibilities" (Bates, 2005, p. 11). For some, providing this access to education is about cultivating economic competitiveness, but for others it is about promoting social equity. As Bates (2005, p. 11) argues: "the more selective, restricted or expensive the conventional education system, the greater the need for open educational provision". Widening education participation is certainly a desirable objective and one that would appear to have a greater chance of affordance if the claims of e-learning proponents are to be accepted.

However, the claims of such proponents need to be set in the context of differential access to technology across socio-economic and geographical boundaries. Policies set at national and international level may for those at local level seem aspirational or unworkable. The pedagogical approaches planned by course designers and implemented by instructors sometimes have to be curtailed due to factors beyond the control of those charged with delivering education through e-learning. The experiences and degree of acceptance of the e-learning technologies by the adult learners may not mirror the way

that the technologists, policy makers or pedagogues envisaged. In short, the examination of literature in relation to the provision, delivery and experience of VLEs by adult learners from the different perspectives and positions portrays a picture that is complex and full of nuances and sometimes contradictions.

Executive Summary

In such an extended piece as this review of the literature it is possible to lose sight of how different constituent parts interrelate. Therefore the following points in a bulleted format help to remind the reader of the salient points before moving onto the next chapter.

- In terms of providing the contextual backdrop to adult learning, Lifelong learning has emerged as an important feature of education provision providing as it does the impetus to adult learners to continually engage in the education process. However, lifelong learning as a concept implies a more rounded approach to education; an engagement with the education process that owes more to intrinsic motivation. While members of the OEL group may well have been initially or latterly developed into lifelong learners the term adult was more encompassing in that it allows for a wider range of motivations and development.
- However, while it may seem a self-evident good, lifelong learning is open to debate with regard to its role and purpose. Namely, is lifelong learning about meeting the needs of the economy or of the individual, indeed can these two positions be mutually exclusive or is there common ground? This is an important debate as the adoption of either stance can have a huge bearing on such things of course content, funding and delivery modes.
- In addition to lifelong learning, e-learning and 'the knowledge society' are terms that once again are frequently presented as if they are a self-evident good. The

provision of distance online e-learning opportunities are predicated on a number of factors not least the availability of computer hardware, software and a hi-speed internet system. Unfortunately, as the digital divide section highlighted there is still a disparity in terms of access to these items. As a consequence the provision of interactive learning opportunities is still not available to whole sections of Irish society.

- VLEs certainly have a useful range of facilities that can (in theory) facilitate creative, engaging and interactive learning environments. However, as previously noted the issue of the digital divide can have an impact on the performance of online learning environments and consequently the learning environment functions.
- Technological issues aside, there remains the thorny issue of learners acceptance and use of technology. Adult learners frequently lead busy and complex lives. As such the decision to accept or reject new technologies may be influenced by factors which have little or nothing to do with the technology itself. The UBSP (table seven) heuristic device offers a useful through which the design and evaluation of an online learning platform might be investigated.
- While VLEs can offer colleges the opportunity to create a wide range of online and distance learning opportunities careful consideration needs to be given to counting the 'real' cost of using a VLE – these include IT support, staff training and development and the provision of flexible responsive student centred support.
- While VLEs can provide an adjunct to full-time attending students, if VLEs are to offer meaningful and rich learning environments for remote adult students educational institutes need to understand the ways that learners utilise VLEs if they are to maximise their use.

- Similarly to the other terms discussed in this chapter the term blended learning also incorporates a wide variety of meanings and versions. In fact one could argue that blended learning can incorporate a range of combinations that include campus based course that utilises some e-mailing and online versions of content all the way up to an integrated interactive learning environment using synchronous and asynchronous communication, e-portfolio and so on.
- Course providers, designers and educators need to be able to clearly articulate what their course is trying to achieve and what role does the use of a VLE play in achieving that end. It is important for education providers to be very clear as to the nature and extent of the blend being incorporated into a course's design. Constructivist programmes require a large degree of input from students and lecturers alike. Failure to appreciate this level of commitment can result in a highly unsatisfactory learning environment.

Chapter 3 Research Design and Implementation

Introduction

Responding to the research question: *In the context of a blended learning programme what were the experiences of adult learners using a VLE?* the overall research approach was concerned with understanding how a specific group of learners in a specific context used the VLE and as such the study would certainly be described as exploratory. This chapter describes and provides a rationale for the choice and implementation of the paradigm, design and methods employed in this study. Reflecting on the question: why study the social dimensions of electronic technologies, Woolgar argues that

> summarising talk tends to encourage synopsis in terms of analysis ... attention at the macro-level gives rather little clue as to how these technologies are actually used and experienced in everyday life ... we need to ask critically whether, to what extent, and how such everyday experiences relate, for example to shifting patterns of employment, to the development of wider social networks, and to global society?

(Woolgar, 2002, pp. 6-7)

Rachel and Dewhurst (2005) have argued that the claim that deployment of VLEs by educational institutions is intrinsically neutral and will bring about predictable benefits is flawed. They offer an interesting and useful range of metaphors[40] that can be used to help guide and inform research regarding VLEs. In summary, the metaphors they offer are:

> A VLE is a machine: this metaphor suggested several forms of evaluation including analysing the objective inputs and outputs of a VLE as found in server and application log files.
>
> A VLE as a computer application: Overall the machine metaphor was able to provide plenty of syntactic information but little semantic information such as 'why' or 'how' the system is used.
>
> A VLE is an organism: this metaphor suggested regarding a VLE as an organism living within an ecological context. This led to a focus on evaluating the suitability of the VLE to its context of use.

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[40] For a fuller explanation see ''Evaluating VLEs: Problems and Solutions' *from the Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2005, Available from: http://0www.editlib.org.acpmil13web.ancheim.ie/index.cfm?fuseaction=Reader.ViewFullText&paper_id=20237*

> A VLE is a brain: Evaluating a VLE from this perspective raises the questions 'what can it do?' and 'what does it do?' This provides answers to the question of how the VLE was being used but still not 'why'.
>
> A VLE is a culture: this metaphor is about a VLE as a social system; it borrows from Wenger's theories of 'communities of practice' (Wenger, 1998). This perspective was able to answer questions regarding social congruence between a VLE and its context of use and in that respect provided at last answers to the 'why'.
>
> A VLE is a psychic prison: this metaphor is about a VLE constraining or limiting its users. This evaluation focused around issues of usability and accessibility and of the affordances of the system. The evaluations from this metaphor were able to extend the overall picture to include 'why not?'
>
> A VLE is a source of transformation and flux: this metaphor is about a VLE acting as the medium and cause of flux and change in its environment ... focused on how the VLE and its context had changed over time. This longitudinal analysis adds the dimension of when as well as 'why', 'what' and 'how'.
>
> A VLE is a source of political domination: this metaphor is about a VLE acting as a medium and actor in the political exchanges within its environment - three aspects of VLE use; ethics, professional roles and panopticism[41].

(Rachel and Dewhurst, 2005, pp.1169-1170)

Clearly any typology is limiting to some degree, the aims of someone else's study are unlikely to be exactly the same. Nonetheless varying degrees of compatibility will be evident enough to utilise the main elements of the typology in question. The metaphors, while not, strictly speaking, a methodological necessity offer a useful way of crystallising and conceptualising the thrust of a study; "as such, they have an immense and central place in the development of theory" (Miles and Huberman 1994: 250). It is clear that a case could be made for most if not all of the metaphors, but the most applicable to this study in terms of trying to understand the how and why of VLE usage by adult learners are the metaphors of the VLE as (i) a culture (ii) psychic prison and (iii) a source of transformation.

[41] Panopticism as in Foucault's theories of the panopticon and the way it keeps all its participants under observation and control (Foucault, 1979).

Research Paradigm

Ontological, epistemological and methodological principles of the same nature are organised into paradigms, which taken together with research methods are organised and presented in terms of paradigms (Sarantakos, 2005). The dominant paradigms in social research have come to be conceptualised in the two broad terms of qualitative and quantitative research.

Quantitative research, as its name suggests "is a research strategy that emphasizes quantification and analysis of data" (Bryman, 2004, p. 19). As with qualitative research, this approach also incorporates a number of methodologies that share a number of commonalities. This approach incorporates the practices and norms of the scientific or positivist model with its understanding that social reality is an external, objective and measurable reality (Sarantakos, 2005). This type of research is characterized by the tight control of the variables under investigation, protocols for measurement and intervention and the use of statistical testing to establish levels of confidence in the results (Houser, 2008). Research methodologies associated with this approach often include quasi and natural experiments and surveys.

The label qualitative is a generic term incorporating a range of different methodologies (Flick et al. 2004). Whilst these methodologies differ somewhat in their object of investigation and methodological focus they all share a number of defining characteristics. Bryman (2004, pp. 19-20) states that the qualitative approach is a "research strategy that usually emphasises words rather than quantification in the collection and analysis of data". From this perspective the social world is not the same as the natural world, human beings react differently in different situations therefore

scientific positivist methods are not appropriate. This approach rejects the practices and understandings of the natural scientific model that is positivism, rather it emphasises the ways in which individuals interpret and construct reality (Bryman, 2004). Research methods (or tools) associated with this approach often include: observations, diaries and interviews.

Burbules and Smith's (2005), approach to research (which draws upon the work of Wittgenstein) proposes that in order to understand the process of education, the researcher needs to acknowledge (as argued by Wittgenstein) that "human activity is rule-governed". Consequently, the emphasis should be finding out "what *rules* are at work and how they are being followed" [italics in original]. However, the researcher can be presented with a problem, namely that Wittengenstein's concept of rule following often involves the use of 'tacit' knowledge (Polyani, 1996). Students may not be aware of the pervasiveness of these social rules, and even if they were vaguely aware they may find it difficult to comprehensively articulate them. Somekh (2007, p. 11) argues that if we acknowledge this position then

> ...it is crucial to seek to understand the rules that govern human activity through developing knowledge from the inside, because it is simply not possible to understand human behaviour by observing it from the outside [italics in the original]

Studies concerned with human interaction are often conducted within this paradigm, thus qualitative research is "particularly suitable for school based research where human activities and relationships are intricately interwoven" (Hitchcock and Hughes, 1989, p.35).

The primary focus of this study was to understand the perspectives of the participants in relation to how they used the VLE in the context of being adult learners. How did they

interact with each other and how did they interact with the VLE? Studies concerned with human interaction are often conducted within this paradigm, thus qualitative research is "particularly suitable for school based research where human activities and relationships are intricately interwoven" (Hitchcock and Hughes, 1989, p.35). However, it must be acknowledged that the two research approaches are not necessarily always regarded as being of equal value, consequently different sources of research evidence may be regarded to a greater or lesser extent. With its presumed adherence to superior procedural rigour and validity it is argued that quantitative studies "produce some of the strongest evidence for the benefits of an intervention" (Houser, 2008, p. 38). Conversely, qualitative research is sometimes accused of being too impressionistic and subjective and very difficult to generalize the findings (Bryman, 2004). However, this 'either or' dichotomy should be treated with some degree of caution and scepticism. Layder (1993) argues that this debate is no longer useful, going as far as to suggest that it is a false distinction with no real merit. Punch (1998) argues that being at loggerheads about which approach is better misses the point; the argument should simply be: what is the most appropriate method to answer the research question posed, and not some rigid adherence to one approach over another.

Researching E-Learners

With reference to the specific areas of learning and e-learning, those who have applied ethnographic methods such as Hara and Kling (2000) and Crook (2002) "have found learners' lived experience to be richer and more complex than following the didactic pathways anticipated by their teachers" (cited in Williams, 2006, p. 2). Williams (2006) enjoins us to be sceptical of those who advocate a model of rationally motivated self-directed learning of adult e learning; in-depth investigation of adult experiences of e-

learning may well prove that the actuality of experience is quite different from the course designer's intentions.

Conole & Oliver (2007b, p.3) posit that research in the field of e-learning is now a complex field of inquiry:

> [it] is both multi- and inter-disciplinary, covers a vast range of research topics, ranging from those that focus on technologies through to wider sociocultural research questions, and addresses issues concerned with the impact of technologies on learning and teaching, professional roles and identities, organisational structures and associated strategy and policy

'The Learner's Experience of E-Learning (LEX)' (Creanor et al., 2006) research study is a particularly noteworthy piece of research in that it sought to understand the dynamics of being an e learner from, as the title tells us, the learner's perspective. Unlike other studies (Morss, 1999; Keller and Cernerud, 2002; Brown & Jenkins, 2003; Erlich et al., 2005, Salaway et al., 2006 and Lovatt et al., 2007) where the focus was on full-time undergraduate student's experiences of e-learning, this study's aim was to "investigate current experiences and expectations of e-learning across the broad range of further, higher, adult, community and work-based learning" (Creanor et al., 2006, p. 3).

The LEX study (Creanor et al., 2006) derived its theoretical underpinning and methodological basis from a prior piece of research: the Learner Scoping Study undertaken by Sharpe et al. in 2005. The Scoping study raised a number of important issues – issues that had a subsequent bearing on the LEX study and in turn on this research. The Scoping study (Sharpe et al., 2005) bemoaned the fact that most of this e-learning research was often written from the practitioner's, rather than the learner's perspective. Sharpe et al.'s (2005, p. 3) explanation for this lack of learner perspective is thus:

> E-learning is relatively new and with respect to learning in general, under-researched. It has attracted significant educational investment but its educational value is often contested … These factors cause an emphasis on evaluating 'worth'.

This notion of establishing 'worth' certainly is consistent with the manageralist/functionalist perspective on the role of education – which in turn can result in a bias towards evaluative positivistic type research at the expense of a more qualitative interpretative approach to research.

The Cohort

As one of the aims of quantitative research is to produce generalisable results great consideration needs to be given to the issue of sampling. In order to be able to generalise the findings from a study the sample must be representative of the population from which the sample was drawn (Bryman, 2004). Consequently, studies employing a quantitative approach use probability sampling methods such as simple random sampling, stratified random sampling, systematic and multi-stage cluster sampling (Bryman, 2004). Qualitative interpretative researchers are less concerned with the generation of generalisable results; rather they are more concerned with understanding the complexities of the group under study, regardless of its size (Sarantakos, 2005).

> Unfortunately, adult education researchers find it nearly impossible to follow the rules of pure statistics. Drawing true random samples from the population of interest is usually prohibitively expensive, so researchers often rely on convenience samples (Valentine, 1997: Internet)

However, this is not necessarily a problem as Valentine argues "it is possible to glean useful information even from studies using highly compromised statistical procedures" (Valentine, 1997: Internet). The OEL group presented the researcher with a convenience sample but it would be disingenuous to simply classify the group in terms of convenience; it was very evidently a purposive sample representing the characteristics of

interest: adult e-learners utilising a VLE as the major teaching and learning component of the course.

Research Design – Case Studies

The design or methodology of a research provides the framework for the collection and analysis of data. The choice of design should be consistent with the overall approach adopted by the researcher. The design reflects decisions about the priority given to a range of dimensions such as whether the study is concerned with expressing and mapping causal relationships or understanding phenomena from the respondent's perspective to developing a temporal appreciation of the topic under study (Sarantakos, 2005; Gomm, 2008). There are a number of different designs used in social research the employment of which will, as previously stated, depend upon the research paradigm chosen. The principal designs are: experiments, quasi-experiments, cross-sectional (surveys), comparative studies and case studies.

The case study design seeks to utilise a range of data collection methods over a period of time focussing a on a specific event, activity or organisation (Creswell, 2003) as a means of developing an in-depth understanding of the characteristics and contextual factors of the group or location. The most common use of the term associates the case study with an emphasis on a location such as a community or organisation (Bryman, 2004). In educational research these locations could focus on anything from a large university right down to an individual class or even a small group of learners. Yin (1984) distinguished three types of case study: the critical case; the unique case and the revelatory case each with its own emphasis on what constitutes the uniqueness or criticality of an event. Bryman (2004) goes beyond this typology and argues that

> ...much case study takes place on what might be called the *exemplifying case*. Cases are often chosen not because they are extreme or unusual in some way but because they will provide a suitable context for certain research questions to be answered. (Bryman, 2004, p. 51, italics in original)

Using this definition the research in the experiences of the OEL group could certainly be described as an exemplifying case study seeking as it did to investigate their experiences and understandings of VLE usage over a period of time. When studying the manner in which users accept and use technology Venkatesh et al. (2000) argue that it is important to examine the phenomenon over a period of time rather than just a cross-sectional snapshot.

Blaxter et al. (2001, p.71), argue that the case study is "ideally suited to the needs and resources of the small-scale researcher" where the focus can be quite small such as "the researcher's place of work, or another institution or organisation with which they have a connection" (ibid.). Yet because of their usually small sample sizes case studies will not be used to generate scientific theory, rather they serve to develop "grounded theory and to use the results to hold a mirror to existing theoretical perspectives' in regard to a particular topic" (Birely and Moreland, 1998, p.36). Teacher/researchers frequently focus on small-scale case studies as their area of interest. While the case study design employed by the teacher/researcher often focuses their study on their place of employment, it needs to be acknowledged that this relationship can potentially have an impact on the level of bias demonstrated in the research (Blaxter et al., 2001). This issue does not necessarily invalidate the research; however it does need to be acknowledged as a potential problem.

Returning to this study's overall focus regarding the manner that VLEs by adult learners there was an implied assumption that adult learners have capabilities, needs and problems that are not necessarily consistent with the experiences of full-time campus-based students. Thus one needs to adopt a design that provides a framework through which the researcher attempts to explore the experiences that a group of adult learners had, in this case the experiences of one particular group or case: the OEL group. Although there was some element of leading the research by having general research questions, the approach design and methods were fashioned in such a way so as to let the participants tell their story. The case study utilised in this research was a 'single embedded case study design' (Yin 1989) where the focus of the work was the utilisation of a VLE by a specific group that was bounded by both time (2006-2008) and with reference to specific group membership – the OEL class.

To summarise, the case study as previously discussed is one of the most commonly used research designs used by the small-scale researcher; particularly in educational research the case is an element of the researcher's place of employment. This can be viewed as both a positive and a negative; a negative as it represents a potential ethical problem but also a positive as the teacher/researcher may be afforded access that might be otherwise denied. As previously noted by Layder (1993) and Punch (1998) the focus of research should be to apply the most appropriate methods and methodologies to answering the question. Consequently the emphasis should be on the utilisation a wide range of strategies to explore the topic; the case study design is broad enough to encompass a diversity of methods because as Denzin and Lincoln (1994, p. 15) state "all [research Sic.] methods are flawed".

Data Collection Process

Primary data collection in this study occurred in five distinct phases as outlined in table nine below:

Phase	Description	Time Period/s	Data Collection Tools used
Recruitment Phase	General and individual information session	May 2006 & August 2006	Information sheet and letters of informed consent
Phase 1	Initial interviews including a briefing on how to use diaries	September 2006	Semi-structured interview
Phase 2	Participants completed diaries and submitted regularly Author records own experiences	September – December 2006	Participant diary Researcher's diary
Phase 3	Participant interviews	December 2006 – February 2007	Semi-structured interview (Diary/Interview)
Phase 4	Participants completed diaries and submitted regularly Author records own experiences	January 2008 – May 2008	Participant diary Researcher's diary
Phase 5	Participant interviews	May - June 2008	Semi-structured interview (Diary/Interview)

Table 9 Summary of Data Collection Activities

During the recruitment phase prospective participants were informed about the study in May 2006 and again during the last week of August 2006 when they came to ITT for a briefing session prior to the re-commencement of classes in September 2006. Twelve of the nineteen students on the OEL initially agreed to take part in the study which in terms of the overall class size was a high participation rate. As previously stated the aim of qualitative research is not generalisability, nonetheless the rate of participation was encouraging. The rate of diary completion was higher in phase two than in phase four; the two principal reasons for this was that the initial number of diarists went from twelve to ten by phase four further dropping to eight by phase five and secondly, as discussed later in the chapter, the issue of fatigue crept in to the study. The specifics of the data

collection methods are dealt with in subsequent sections however this table provides a useful reference point to guide the reader through chapter three.

Research Methods

Crotty (2005, p. 3) defines methods as the "techniques or procedures used to gather and analyze data related to some research question". As previously stated, the methods employed are diaries, primarily participant diaries but also the use of the author's own diary/log of events. In addition, a series of semi-structured interviews was employed. The overall aim was to gain an understanding of the participants' perceptions of using the VLE thus the nature of the data generated was qualitative in nature (words) thus in terms of analysis this data was analysed using the flexible qualitative model. However, the use of the diaries did produce some quantitative data with regard to time usage and communication patterns; this data was subsequently analysed using Microsoft Excel software.

Diaries

When Thomas and Znaniecki wrote in 1919 that "personal life records,[42] as complete as possible, constitute the perfect type of sociological material" (Thomas and Znaniecki 1919, cited in Jones, 2000, p.555) they may have, to a certain degree, overstated the relative value and importance of such document insofar as referring to them as perfect sources of sociological data. Nonetheless, the importance of such sources of data cannot be underestimated if a researcher is attempting to break away from behaviourist understandings of reality and the resultant research methods. Personal life records; in this case diaries, offer the researcher an opportunity to explore a respondent's thoughts,

[42] Personal life records include: autobiographies, letters and diaries

feelings and understandings of a phenomena or event without necessarily being present with the respondent at times or events of interest to the researcher.

Diary Classification

Bryman (2004) offers a typology of the three major ways in which the term 'diary' has been used in the context of research. Bryman's (2004) third classification of diary usage is where the diary is employed as a log of the researcher's activities during the research process. However, the delineation between a straightforward log of research activities and where the diary becomes a place in which the researcher's thoughts and observations (Koch, 1994) such as the writing of field notes in ethnographic research can become somewhat blurred. Notwithstanding this blurring of definitions, they both understand the use of diaries to provide data derived from the researcher and not the study participants. The author used a diary to record events and thoughts regarding the use of the VLE from the perspective of a lecture and joint coordinator of the OEL programme.

The second way in which diaries are used is in the context of 'the diary as a document' (Bryman, 2004, p.141). In this context the diary is written in a spontaneous or 'unsolicited' (Jacelon and Imperio, 2005) manner and not at the behest of a researcher. Unsolicited diaries offer a naturalistic arena in which the writer can explore their own thoughts and feelings. In this context the diary is usually "private and not intended to be read by another person" (Jacelon and Imperio, 2005, p.992).

Notwithstanding the author's use of a diary/log, this study was primarily interested in exploring the third definition of the manner by which diaries can be used: that of 'the diary' as a method of data collection. Here the researcher "devises a structure for the

diary and then asks a sample of diarists to complete the instruments" (Bryman, 2004, p.141). This type of diary is often referred to as 'researcher-driven diaries' (Elliott 1997) or 'solicited participant diaries' or simply 'solicited diaries' (Jacelon and Imperio, 2005). In the context of solicited diaries Wiseman et al. (2005) defines a diary as "research tool that requires respondents to make regular records of their daily lives and experiences" (Wiseman et al., 2005, p.394).

What do diaries offer?

Whilst certain research designs such as surveys do offer the advantage of providing large bodies of data in a relatively cost-effective manner the value of this data may be somewhat limited in terms of the explanatory value. Researchers need a method of accessing individuals' interpretations and understandings of their world.

> The aim of naturalistic research is to study the world as far as possible in a state that is not contaminated by the research process, so that "natural" not "artificial" settings, like experiments or formal interviews, should be the primary source of data (Hammersley & Atkinson 1995:6).

A search of research articles showed a preponderance of health related studies (Verbrugge, 1980; Elliott, 1997; Jones 2000; Jacelon & Kristal, 2005; Jacelon & Imperio, 2005; Almedia, 2005) primarily employing a phenomenological approach to understanding and recording illness narratives or other health-related issues. Other areas of interest where diaries have been used are the way in which people spend their time, transport use and consumer expenditure (Corti, 1993). In terms of researching of e-learners' experiences of networked learning the study carried out by Timmis et al. (2004) was informative and one of the good examples where participant diaries were employed in an e-learning research context albeit in this case only over a two-week period. Another note-worthy study was Aspden and Helm's (2003) large-scale study of student's experiences of using a VLE again using diaries as the basis of their approach but again it

was utilised over a relatively short period of a couple of weeks. Given the time-consuming nature of diary completion and analysis their use in large-scale studies over anything longer than a short period of time is prohibitive.

Regardless of the subject matter, the lessons learnt from such studies have much to offer the educational researcher in terms of insight into methodological considerations and advantages of employing diaries as a research tool. For example, one of the problems with retrospective examinations (such as an interview) of an event can be that participants may self-censor or simply not recall accurately. Because diaries offer the possibility of documenting the present; "there is a perception at least that diaries are less subject to the vagaries of memory" (Elliot, 1997, Internet). Diary writing "has the advantage of immediate and experiential penetration in the related facts" (Zabalza 1994, cited in Sá, 2002, p.152). As Plummer (2001, p. 48) argues:

> The diary is the document of life *par excellence*, chronicling as it does the immediately contemporaneous flow of public and private events that are significant to the diarist. The word 'contemporary' is very crucial here, for each diary entry – unlike life histories – is sedimented into a particular moment in time.
> (Italics in the original)

Another benefit of solicited diaries is they enable the researcher to "obtain scientific observation, in settings from which the 'scientist' is absent" (Elliot, 1997, Internet). Zimmerman and Wieder (1977) advocate using the diary-interview method "in accessing phenomena which are not amenable to observation because they are unfocussed or take place outside set time or environmental boundaries" (Elliot 1997, Internet). Zimmerman and Wieder (1974) justified their rationale for the diary-interview method in that it offered the researcher the opportunity to 'observe' a group of people deemed to be

members of a counter-culture that would otherwise be difficult if not impossible to effectively study due to its inherent inaccessibility and "freedom from a conventional schedule of activities" (Zimmerman and Wieder, 1977, p. 483). Zimmerman and Wieder (1977) subsequently used the diary data as a means of stimulating subsequent interviews. In this instance the diaries served two separate though mutually beneficial purposes (1) data from the diaries serves independently as data in its own right and (2) the diary data serves to stimulate and generate subsequent verbal data.

Design & Implementation Considerations

Corti (1993) offers a useful checklist to guide researchers using participant diaries as a research tool:

> 1. An A4 booklet of about 5 to 20 pages is desirable, depending on the nature of the diary.
> 2. The inside cover should carry a clear set of instructions on how to complete the diary – this should stress the importance of completing at the correct times, also emphasising that keeping the diary should not influence behaviour.
> 3. A model example of a correctly completed entry.
> 4. Pages should be clearly ruled up as a calendar with prominent headings and enough space to enter all the desired information.
> 5. Checklists of the items, events or behaviour to help jog the diary keeper's memory should be printed somewhere fairly prominent.
> 6. There should be an explanation of what is meant by the unit of observation, such as a "session", an "event" or a "fixed time block".
> 7. Appropriate terminology or lists should be designed to meet the needs of the sample under study, and if necessary different versions of the diary should be used for different groups.
> 8. Following the diary pages it is useful to include a simple set of questions for the respondent to complete, among other things, whether the diary-keeping period was atypical in any way compared to usual daily life. It is also good practice to include a page at the end asking for the respondent's own comments and clarifications of any peculiarities relating to entries.
>
> (Abridged Version: Corti, 1993, p.3)

Clearly Corti's checklist should not be taken as exhaustive, for example the development and wider availability of communications technology has made it possible to make greater use of communications and recording devices that can be used by the researcher. For example instead of paper diaries, mobile devices such as PDAs and mobile phones

can be used to make entries. In addition to good design the importance of clear and concise diary completion instructions cannot be overstated (Alaszewski 2006; Jones, 2000 and Marino et al., 2004). Prior to embarking on the data collection phase, participants need to be informed of how and when to complete the diary, how and when to submit the completed diaries and procedures to be, followed if a data entry is missed (Alaszewski, 2006; Zimmerman & Wieder, 1977). As part of the initial data collection period participants were fully briefed regarding diary completion instructions both verbally and also given a written set of instructions (appendix B).

Marino et al. (2004, p. 398) argue that: "diaries, when compared to other retrospective studies, in general produce higher reporting for most events … this has been interpreted as a sign of more valid data". However, it is important to note that there appears to be an inverse relationship between the length of time recording and data reliability. Conrath et al. (1983) found that diary data were more reliable than questionnaire data, however, if diary entry required more than five to ten minute minutes per day to complete the reliability may be compromised (cited in Marino et al., 2004, p. 401). Consequently the participant diary was designed with two imperatives considered: (1) the need for the diary to generate sufficient data in order to satisfy the research aims and (2) the degree of usability would be such that completing the diary would not be too onerous and time-consuming. To this end, the initial versions of the diary were piloted, firstly among colleagues and full-time students in the ITT and subsequently with two distance students undertaking an Open University (OU) degree. Whilst acknowledging that the OU students were undertaking a different course and consequently some of the subject headings did not match their feedback regarding the use of the diaries was important. For example, upon their suggestion the diaries along with a further set of instructions were

bound into booklets containing twenty diaries rather than having a loose set in an envelope folder as was originally envisaged. The diaries from the first semester (September 2006 – December 2006) and second semester (January 2008 – May 2008) were aside from a change reflecting a change in subjects taught substantively the same (Appendices C and D respectively).

Modern communications technology can be used to improve response rates even where a standard written diary is being employed. Diary studies are often classified into three categories of interval-contingent, signal-contingent and event-contingent (Bolger et al., 2003). The interval-contingent requires the participants to report on their experiences at regular, predetermined intervals. Signal-contingent designs rely on some signalling device to prompt participants to provide diary reports at fixed, random, or a combination of fixed and random intervals chosen by the researcher (Reis and Wheeler, 1991). Signalling devices can include text alerts through mobile phones, beeper alerts, e-mailing or simply phoning the participant. Event-contingent studies require the participants to complete a diary entry each time the event in question occurs. Arguably the event-contingent method has the added advantage of providing a greater degree of ecological validity to the study as the recording of the event solely relies on the participant him/herself choosing the time/s to provide the record at naturally occurring intervals. Aiming to ensure ecological validity, this study employed the event-contingent method although this was only really effective if the respondents completed the diary shortly after the event.

Wiseman et al. (2005) argue that the primary concern with the use of diaries is the issue of fatigue. In relation to diary completion, fatigue has been described as a "form of conditioning effect whereby, as the diary period lengthens, participants become tired of

keeping records and may become less thorough in their reporting" (Wiseman et al., 2005, p.395). Research studies employing diaries have used temporal frames ranging from a number of days to ten or more years. Coxon et al. (1993) recommend that diaries should generally not cover a period of over one month; however, the time frame for recording will naturally depend on the number of entries required daily and/or per week. The length of time is clearly contingent on the research question asked and the methodology employed. The aim of this study was clearly to understand the participants' experiences over a prolonged period of time which in the two semesters amounted to approximately sixteen weeks in semester one (September 2006-December 2006) and twenty weeks in semester two (January 2008 – May 2008).

As with any method of data collection there are a number of shortcomings attached to using diaries as a data collection tool. Whilst these shortcomings do not necessarily negate the usefulness of diaries, these problems need to be acknowledged in order for the researcher to identify strategies that can ameliorate these potential difficulties.

Nonetheless, by employing appropriate strategies, the researcher can minimise or at least take account of such potential limitations. Firstly: missing, incomplete or unclear diary entries may result in deficient data sets. If the researcher needs to contact participants to obtain missing data or clarify entries "then the method becomes retrospective and subject to recall error and biases" (Marino et al., 2004, p.402). Effective training in diary entry procedures such as entry time/s, submission of diaries, entry protocols "improves compliance and increases the likelihood that procedures are followed correctly" (Stone & Shiffman, 2002, p.241). In addition, the problem of missing or incorrect data is similar to that faced by the researcher employing a self-administered questionnaire as a data

collection tool. Structured diaries that are well designed in terms of layout, readability and unambiguousness are less likely to have incomplete or incorrect entries.

Quantitative Diary Data

Even when the researcher is utilising a qualitative interpretative approach diaries also offer the researcher the possibility of generating quantitative data, either as an addition to the qualitative type data or as self-contained quantitative data in its own right depending upon the type and nature of the research question. Questions such as: "aggregating over time: what is the typical person like, how much do people differ from each other?" (Bolger et al., 2003, p.581) clearly requires the generation of quantitative data in order for comparisons to be made.

> Diary designs are excellent for studying temporal dynamics. By having participants report their experiences over hours, days, weeks and sometimes months, researchers can ask questions such as: Does the variable of interest fluctuate from morning to night, behave differently on weekends and weekdays ...Do individuals differ in these changes over time?
>
> (Bolger et al., 2003, p.585)

The aim was primarily to use the diaries as both a source of qualitative data from the open-ended questions but also to be used as a means of stimulating subsequent interviews as part of the diary/interview approach to data collection. Nonetheless, even in qualitative approach studies the utilisation of descriptive statistics provides material that can add to setting and understanding the context of the phenomena being studied (Sarantakos, 2005).

Diary Summary

The use of participant diaries for data collection can be extremely effective across a range of qualitative studies particularly those studies adopting an ethnographic approach. Such exploration of this under-used self-report data collection method can offer the

researcher much in terms of proxy accessibility and provision of a 'window' into participants thought process that may not be apparent from observation. They can provide a sense of immediacy to an event that may not be possible in a retrospective interview no matter how skilfully the interview is conducted. In a sense diaries provide a more ecologically valid method than many other research methods; the research participants are located in their natural environment and not the slightly contrived setting of a researcher led interview and/or observation. However, as previously noted there remain a number of considerations that need to be acknowledged and dealt with if they are to be used effectively.

Interviews – Diary/Interview Method

There are three main types of interviews, which are defined by their degree of flexibility: structured, semi-structured or unstructured (Bryman, 2004). The main difference between these is the degree of flexibility in adapting the flow of questions. The structured interview allows no degree of flexibility, minimising the reflectivity of the interviewee. The unstructured interview allows a wide degree of flexibility and reflectivity, but the coding of answers can be problematic making it difficult to establish commonalities between interviewee's responses. The reason for picking one type in preference to another is influenced by two main issues; firstly there is the nature of the research approach being undertaken. Clearly, if one is adopting a quantitative approach then the degree of latitude given to the respondents will be quite minimal ensuring only the briefest of responses such as is found with structured interviewing (Royce et al., 2002; Warren, 2002). Conversely, the adoption of a qualitative approach requires the interviewer to allow a greater degree of respondent control on the pace and nature of the interview, especially if using an unstructured format. Secondly, regardless of the

paradigm chosen there is, particularly for the lone researcher the issue of resource implications (Bryman, 2004). Without recourse to a professional dicta-typist service the transcription of one hour of interview can take up to three or four hours (Poland, 2002). Consequently, the type and number of interviews that a researcher may undertake may have to be constrained while at the same time remaining as true as possible to the research question and concomitant methods chosen.

The three interview stages that were undertaken over the period of the study used two similar but distinct strategies. The preliminary interview and the two subsequent interviews all used semi-structured interviews. However, while the preliminary interviews utilised a standard semi-structured format (appendix E), interviews two (phase three) and three (phase five) used the diary data as an artefact which was thus used to stimulate subsequent exploration of the participants' experiences thus the interview schedules (appendices F and G) should be taken as illustrative rather than indicative. Although this study was not intended to replicate the LEX study (Creanor et al., 2006 and Mayes 2006) there are elements of similarity in the manner that the diary data was used and the manner that the LEX study used the diaries as an element of the 'interview plus' method of data generation although it must be noted that the LEX study used a number of artefacts such as course material, learner progress files and tracking logs.

Interview Implementation

In total there were thirty-two interviews undertaken in three distinct blocks (see table nine in this chapter). Twelve interviews were held in each of the first two blocks with eight being undertaken in the final block; the reduction being explained in terms of participant withdrawal which for reasons of anonymity are not disclosed. Due to the

geographical spread of the participants the interviews were generally arranged to coincide with the face-to-face sessions when the class were in attendance at either the ITT campus or in the off-campus location of Macroom, Co. Cork. However, due to time constraints and/or non-attendance on the days in question ten of the interviews were arranged in suitable locations including a participant's home or an office in a participant's workplace. Due to the semi-structured nature of the interviews the range of questions and subsequently the topics discussed were kept relatively focussed although at the conclusion of every interview the participants were invited to comment on any aspect that they wished. Despite having taught the group for a year prior to the commencement of the course and having established a positive working relationship with the group interviewing the participants did not prove easy in every instance. While the participants were quite happy to make small talk prior to and after the interview they sometimes remained quite focussed on answering the posed questions without providing a large degree of elaboration. Due to the time constraints imposed by trying to interview the participants when they attended the face-to-face sessions the interviews were scheduled to take approximately 20 minutes although in reality they ranged from ten to twenty-five minutes with the average being fifteen minutes.

The interviews were taped using a standard audiotape Dictaphone; in addition contemporaneous and subsequent field notes were made noting such things as the general demeanour of the interview, the location and any reflections or thoughts on the interview. The benefit of using field notes is well established in the social research as an aid to subsequent coding of data, as an aide memoir and as an aid to transcription where the sound quality of the recordings may have been compromised (Bryman, 2004; Hermanns, 2004; Flick, 2007). The use of the field notes proved invaluable as a source to help recall

and contextualise the interviews particularly when, despite the advice (Bryman, 2004; Flick, 2007) that a transcription should be done as soon after the event as possible, this did not always prove to be the case due to work commitments.

In qualitative research the aim is to immerse oneself into the data, consequently despite the time required it is preferable for the researcher to be involved in the transcription process (Bryman, 2004; Flick, 2007) thus, for reasons of immersion and to a lesser degree the cost involved, the interviews were transcribed by the author. In addition to the interview transcriptions the data from the open-ended questions in the participants' diaries and the author's diary entries were also transcribed.

Triangulation - Mixed Methods

Babbie contends that "in the best of all worlds, your research design should bring more than one research method to bear on the topic" (Babbie, 1992, p.109). The work of Norman Denzin (1978) is generally acknowledged as introducing and popularising the concept of a triangulated approach to research, in short it asks that the researcher combine methodologies in order to study some phenomenon. Denzin (1978) proposed four types of triangulation: investigator triangulation (two or more researchers used in the process), theory triangulation (the use of multiple perspectives and theories), data triangulation (where variety of data sources are used in a study), and methodological triangulation (the use of multiple research methods) (Bryman, 2004; Sarantakos 2005). The form of triangulation employed in this study was a combination of (1) data triangulation where the sources of data was interview (qualitative) and diary (qualitative and quantitative) data from the participants and diary data from the author and (2)

methodological triangulation employing the use of diaries and interviews as research tools.

Analysis

If a researcher's task is to develop and communicate to the reader a clear understanding of the concepts employed and to highlight and explain the level and nature of the interrelated issues, it becomes important to be able to record, code, search, condense, and link data authentically (Smyth, 2006). In relation to qualitative research, this task can be broken down into two separate though interrelated steps– the collection or generation of the data and the analysis of the data. Smyth (2006, p. 5) summarises these two steps thus:

> The extent of the [research] task will be determined by the amounts of descriptive and narrative data generated during qualitative research, whereas the depth and breadth of meaning making that is possible will be influenced by the researcher's ability to interrogate data effectively.

However, interrogating data can be difficult and time-consuming, particularly where the researcher is faced with a large volume of descriptive or narrative data, sometimes referred to as 'rich data' (Richards, 1999). This task may be made easier using computerised software that helps the researcher store, analyse and manage the data.

NVivo

Traditionally, quantitative social research with its positivistic emphasis on establishing cause and effect has made extensive use of statistical techniques and latterly computerised statistical programmes, the best known being Statistical Programming for the Social Sciences (SPSS). Qualitative social researchers have been more reticent to utilise data management software packages, the reason for this reticence will be discussed presently.

Computer Assisted Qualitative Data Software Analysis (CAQDAS) is, as the name suggests, a computer software package that aims to help the qualitative researcher manage and code rich data sources. Whilst there are a number of CAQDAS providers, arguably the best known are Qualitative Research Solutions International (QSR[43]) who are responsible for NUD*IST [44]. At first glance, it may seem a little incongruous for interpretative research to employ a computer programme to manage rich data. Within the context of a mixed methods approach NVivo's ability to export 'detailed coding information' offers the researcher the potential to "create data sets from the qualitative data which may then be exported to a statistical program" (Johnston, 2006, p.384).

Whatever the debates surrounding the efficacy and appropriateness of using such programmes it must be acknowledged that whilst a CAQDAS can certainly take away some of the drudgery of handling data it is "the researcher [who] must still interpret, conceptualize, examine relationships, document decisions, and develop theory" (Bringer et al., 2004, p.249). Whilst a CAQDAS programme can assist in these tasks it in no way replaces the intuitiveness and experience of the human researcher (Richards, 2002).

As previously noted, the CAQDAS employed in this research was NVivo8 a windows based format that offers the researcher a wide range of data management and analysis tools. Lyn Richards (1999) describes the coding and linking features in NVivo as one of

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[43] The original NUD*IST programme was developed by Professors Tom and Lyn Richards in the early 1980s when the latter "was looking for more efficient ways to manage her data than the chaotic task of photocopying, cutting, highlighting, and filing interviews and coding by hand" (Bringer et al., 2004, p. 248). In 1999 a more refined and user-friendly version of the original programme was produced with the rather long-winded acronym: QSR NUD*IST VIVO; however, it is generally referred to as NVivo. The original 1999 version of NVivo has been continually updated and improved; version 8 or NVivo8 was the version used for this research.

[44] Non-numerical Unstructured Data, Indexing, Searching, and Theorizing

the triumphs of the system. However, she does also point out that ease of coding has resulted in the 'unintended trap' of continual coding, and re-coding until it becomes a self-serving exercise rather than analysis for the purpose of answering the research question posed. This is not to suggest that as with the "highlighter pen and paper" manual approach over-coding is not necessarily a problem; however, it is certainly more time-consuming and possibly less likely to be undertaken in comparison to a computerised system.

Despite what the producers and proponents of computerised data management and analysis systems might argue, mastering the system is somewhat time-consuming and if the data set is relatively small it may not be "worth the time and trouble navigating your way around new software" (Bryman, 2004, p. 420). Finally, Bryman (2004, p. 420) goes on to note that if a personal researcher does not have "easy access to CAQDAS, it is likely to be too expensive". Whilst it is important to be aware of and acknowledge the debates surrounding the use of CAQDAS, it is of course important to outline the benefits that they offer the qualitative researcher. The principal benefit (according to Bringer et al., 2004) is that they provide transparency and thus accountability. In turn, this transparency should:

> ...encourage the examiners to engage the student in an informed discussion of the analytical process, much in the same way that examiners of a quantitative-based project would seek assurance that the student understood the statistical methods employed (Bringer et al., 2004, p. 262)

As highlighted in the subsequent ethics section of this chapter, one of the issues in this study was the ethical dilemma posed due to being both a course lecturer and the researcher. Consequently any device or mechanism (such as NVivo) that adds another layer of transparency and audit and thus helped assuage ethical concerns was most welcome.

Coding Process – Qualitative Data

Strauss and Corbin (1994, p. 280) acknowledge: "that in all modes of qualitative research the interplay between researcher and the actors studied – if the research is intensive – is likely to result in some reciprocal shaping". Consequently when discussing the role that the researcher played in analysis of the data one must begin with acknowledging that there is always likely to be a degree of subjectivity. Miles and Huberman (1994) suggest qualitative data analysis is an interactive process which constantly iterates between three stages. The definition below characterises the approach to qualitative data analysis adopted for this study:

> We define [qualitative data] analysis as consisting of three concurrent flows of activity: data reduction, data display, and conclusion drawing/verification. (Miles and Huberman, 1994, p.10)

The concurrent natures of these activities are illustrated in graphic form in figure 4:

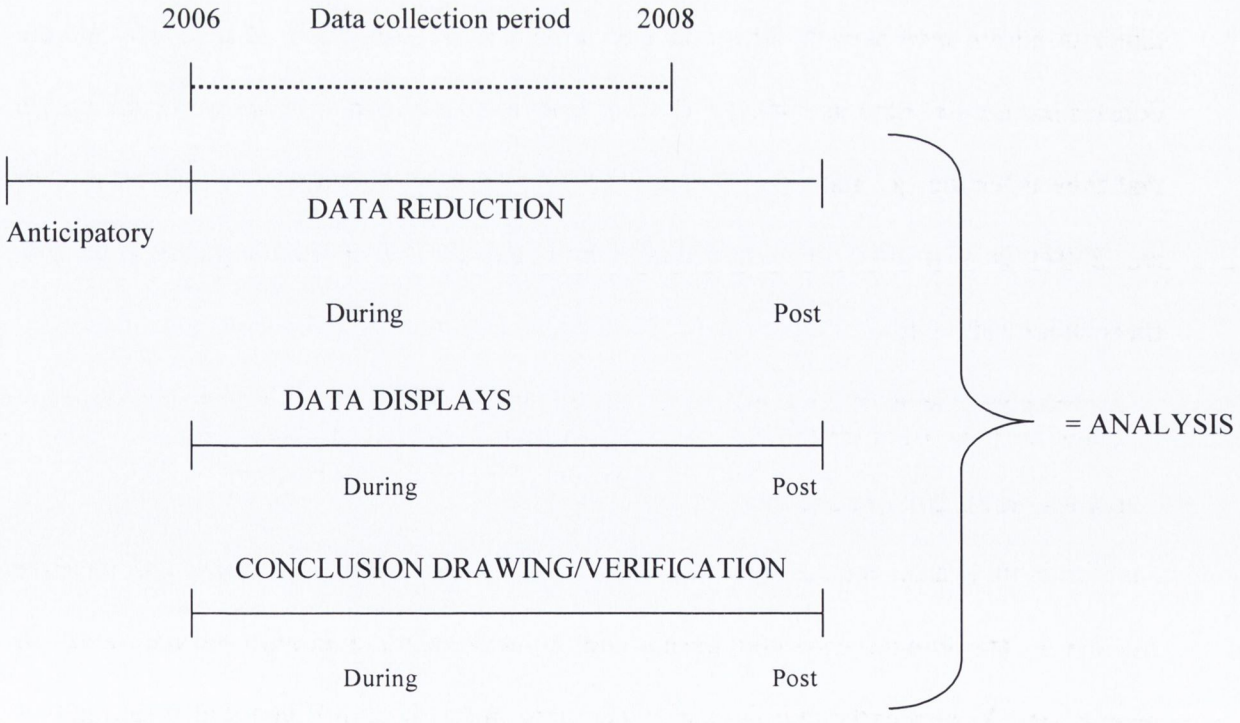

Figure 4- Components of Data Analysis: Flow Model - Adapted after Miles & Huberman (1994, p. 10)

Data reduction "refers to the process of selecting, focusing, simplifying, abstracting, and transforming the data" (Miles and Huberman, 1994, p. 10). Data reduction, they (Miles and Huberman, 1994) propose should not be seen as separate to analysis, rather it is part of analysis; the act of choosing which 'chunks' of data to code and use to summaries or illustrate is an analytical act. The interviews and qualitative diary data after transcription were imported into NVivo with each element being given a separate file name. While it was previously noted (Richards, 2002; Bringer 2004) that the software will not replace the experience, insight and intuition of the researcher in terms of coding large data sets such as the data set generated in this study, NVivo provided a very useful way of organising all the data prior to and during the coding process. Using the NVivo software, each file was carefully read through and manually coded (the process of data reduction). Using 'cross-case' and 'within-case' (Miles and Huberman, 1994; Yin, 1994) methods of analysis allowed for commonalities and differences to be drawn out and thus emergent categorizations to be tentatively made. Given the longitudinal nature of the study and the concomitant large data set generated each individual became a case within their own right. Flick (2007, p. 102) provides a useful description of the within and cross case method:

> Within a case - what does the interviewee say about different issues, how consistent or contradictory are statements across several categories? Between cases – how different or similar are the responses of various interviewees on the level of one topic/category or on the level of the whole interview?

There are three primary varieties of qualitative analysis: iterative, fixed and subjectivist each with their own presuppositions and characteristics (Bryman, 2004). The iterative method employs two major strategies – grounded theory and analytic induction. Their analytic process "involves repeated use of data collection and analysis" (Sarantakos, 2005, p. 346). The fixed method, as its name suggests is far less dynamic; "in this case, data analysis is conducted after data collection" (Sarantakos, 2005, p. 346). The

subjectivist method covers as Sarantakos (2005, p. 346) describes it: "whatever cannot fit into the other two types of analysis [it] ...leads to a subjective choice of methods that do not rely on general rules and principles". The data generated in this study covered two distinct periods of time: September 2006 – February 2007 and January 2008 – June 2008, thus there were elements of both the fixed and the iterative methods used. The major steps in qualitative research based on grounded theory are quite similar to those employed in the flexible qualitative model (Bryman, 2004). Recognising that grounded theory is a very specific approach to research and analysis this study employed the less restrictive flexible qualitative model in terms of providing an approach to coding. While it must be acknowledge that qualitative data analysis is an iterative and subjective exercise it should be no less systematic to the positivistic quantitative approach (Bryman, 2004; Sarantakos, 2005). The steps used for the coding in this instance were thus:

- Data-Gathering and open coding; examining and comparing data. Conceptualisation of data leading to identification of (possible) concepts.
- Axial coding; integrating and re-integration of data and constructing categories
- Inter-connecting, contextualizing categories, giving attention to new categories, discard redundant categories, modifying existing categories
- Selective coding; identification of the core category/categories, relating these categories to other categories, validating their relationships

This study did not adopt a grounded theory approach consequently it did not employ the theoretical proposition/hypotheses stage of coding. As previously stated the study covered two distinct periods thus it can be appreciated the new data from the second session could be coded as data in its own right but also it provided the opportunity for comparative analysis.

The second major activity in Miles and Huberman's (1994, p. 11) component of data analysis is the data display activity: "generically, a display is an organized, compressed assembly of information that permits conclusion drawing and action".

NVivo facilitates the grouping of emerging themes or ideas using what are referred to as nodes; these nodes can be either 'free' nodes where there are no defined relationships between each concept or 'tree' nodes where there is a defined hierarchical relationship (Bazely and Richards, 2000). The figure 5 screenshot provides an indication of the number of data sources that can constitute one of the free nodes: broadband. In fact as discussed in the next chapter, 'broadband' emerged as one of the most cited topics in the study; consequently the screenshot is in reality only a brief snapshot of the number of references (forty references from twenty five sources) that were made to broadband connectivity.

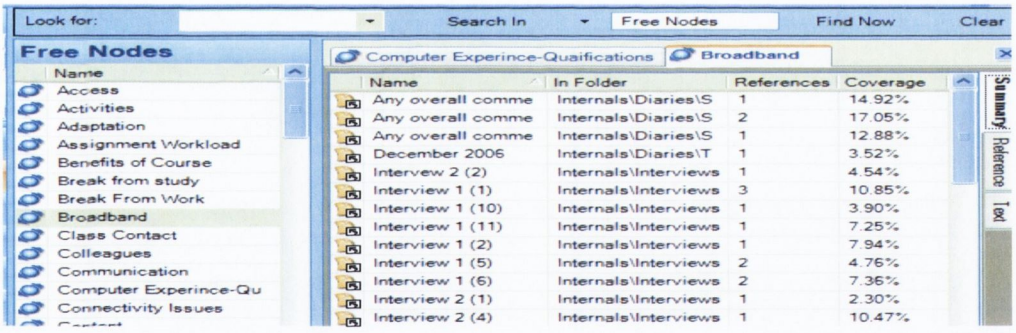

Figure 5 - Data Sources in a Free Node

Figure 5 provides a screenshot of an example of the data sources within the broadband free node, in this case the data is drawn from the first interview (phase one) with participant number one. Data sources are often coded under a number of nodes. For example, aside from its inclusion under 'broadband' the level of unhappiness expressed was also coded under the free node 'dissatisfaction'.

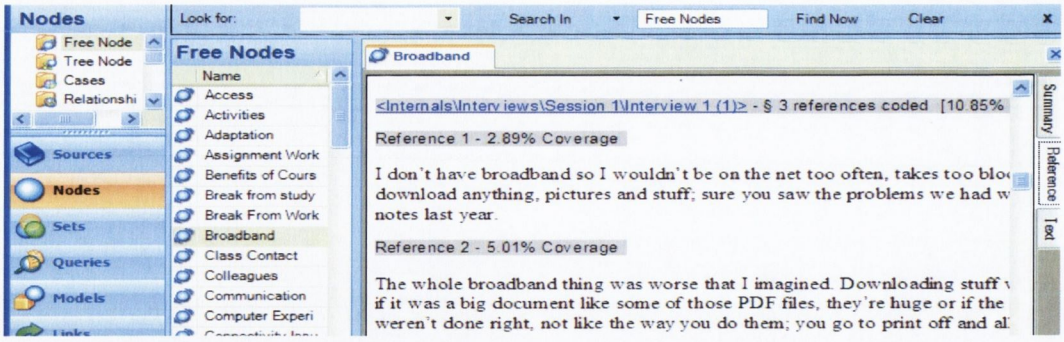

Figure 6 - Free Node Source Data

However, free nodes have limited power in terms of organising and analysing data into manageable concepts or themes that can be used to answer the research question. Prior to the creation of the tree nodes there was fifty-four free nodes (see appendix H) and while it provided a useful starting point the sheer number of nodes meant that abstraction and conceptualisation was almost impossible. A tree-node is essentially a free node where a logical connection to another node has been established and is therefore contributing to a common theme. Within these trees or 'parent nodes' are branches, which are referred to as 'child nodes' by the software designers (QSR). Figure 7 screenshot shows the link between the tree of 'technical issues' with the 'connectivity' branch which in turn has minor branches of 'firewall' and 'broadband'.

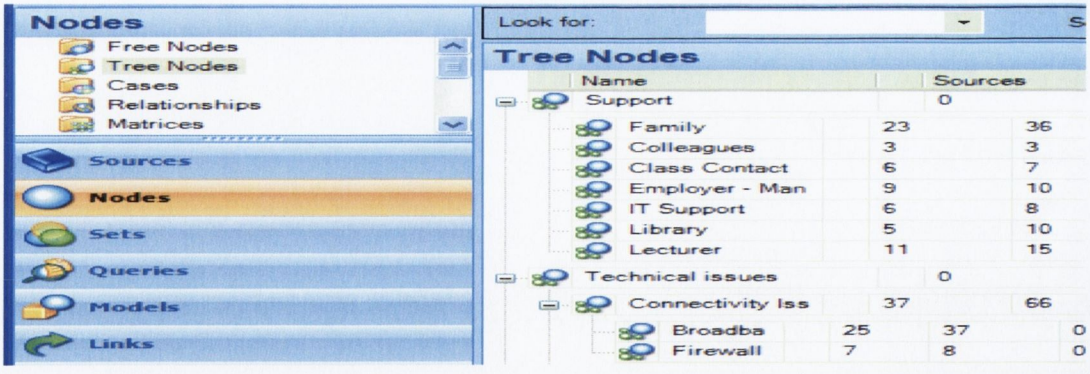

Figure 7 - Tree Node Examples

The third major component in Miles and Huberman's (1994) flow model is conclusion drawing and verification. While there may have been vague fleeting conclusions even at

an early stage of the research, the researcher must maintain openness and scepticism until the end of the research process. Miles and Huberman (1994) suggest that analysis of qualitative data can be hard on the analyst because the data is dispersed, sequential rather than simultaneous, poorly ordered and bulky. They suggest that the use of visualisations such as matrices and networks as a means of summarising and exploring the interrelationships between the data. One of the most useful features of NVivo is that it provides the researcher with a conceptual modelling tool. This tool allows the mapping of the nodes/themes into visual diagrams where the relationships and patterns can be represented and reworked. During the data reduction, data display and the conclusions and verification stages of the study a number of iterations were developed and reworked which proved to be an invaluable aid to the coding process (see appendices I and J). Though the coding processes both textually and graphically the aim of the research is to produce meanings from the data that:

> ...have to be tested for their plausibility, their sturdiness, confirmability – that is their validity. Otherwise, we are left with interesting stories about what happened, of unknown truth and utility. (Miles and Huberman, 1994, p. 11)

Through this long coding process, situating and examining emergent themes against what was already known about the topic from the literature, by checking with the participants and the use of reflexivity the four themes of (i) background & antecedents (ii) difficulties and issues (iii) activities & usage patterns and (iv) adaptation.

Gibbs (2007) advises that in order to ensure the best possible quality of data analysis, the researcher should be reflexive in their practice by critically assessing their own role in the process as well as the data, the findings and the conclusion. Flick (2007, p. 102) advises that "reliability can be increased by rechecking the transcripts and cross-checking the codes", given the longitudinal and semesterised nature of the study the researcher had

an opportunity to re-read transcripts and recheck the codes after the first two round of interviews and diary data collection. Qualitative data analysis is potentially fraught with difficulties; with such a relatively large data set the use of the NVivo software programme certainly helped the process in terms of data storage, management and coding.

Analysis of Quantitative Data

As previously noted diaries (depending upon format) offer the potential to generate statistical output. Whilst sample sizes of less than thirty preclude the possibility of establishing statistical significance testing, smaller cohorts can still produce varying level of useful descriptive statistics. Rossman and Wilson (1984, 1991 cited in Miles and Huberman, 1994) offer three reasons for linking quantitative and qualitative data: (a) confirmation or corroboration via triangulation (b) provision of richer detail and (c) to initiate new lines of thinking.

Whilst statistical computer packages such as the well known Statistical Package for the Social Sciences (SPSS) offer the researcher a very powerful software package Microsoft Office's spreadsheet software package Excel offers a versatile and powerful tool particularly when one is largely concerned with the use of descriptive statistics for illustrative purposes rather than co-relational or variance testing (although Excel is capable of utilising quite advanced statistical testing itself). The numerical data added to the depth of the study providing as it did temporal details of the manner by which the participants accessed and used the VLE. Descriptive statistics such as the time that VLE was accessed and the mean time spent on VLE help to provide a richer sense of detail to the way that the participants used the VLE. Notwithstanding, the emphasis on descriptive statistics, during the data analysis phase of the study it proved worthwhile to

carry out a *t*-test in order to test if there was a statistical difference between the length of time that those participants who connected to the internet via a broadband connection differed from those connecting via dial-up. The results of this test (as discussed in chapter four), although in itself not significant, demonstrates the importance of applying a triangulated approach to research; namely that different sources can add to or illustrate a point.

Ethical Considerations

Research ethics can provide a framework against which the researcher's actions can be guided and informed and against which an observer can view and gauge the manner in which the study was carried out. However, it needs to be acknowledged that the incorporation of ethical practice in research has at times been accused of being a ritualistic exercise where the researcher simply 'ticks the boxes' of expected criteria rather than meaningfully engage with the research process and the participants from start to finish of the study (Blaxter et al., 2001, Sarantakos, 2005).

If ethical considerations in research are to have a meaningful role Flick (2007) advises that ethics in qualitative research are not merely some set of abstract concepts that should be applied at the implementation stage of the research. Rather, ethical considerations should be embedded right from the conception stage, through to the design, implementation, analysis and writing up stages (Flick, 2007; Gomm, 2008). In fact Parahoo (2006, p. 111) argues that ethical considerations precede the whole process contending that "even the decision to research or not research has ethical implications".

"Over the past thirty years, efforts have been made to make research more systematic and more accountable" (Sarantakos, 2005, p. 16). Codes of ethics have been formulated by a

number of diverse organisation ranging from tertiary education institutions; subject associations; professional registration bodies, statutory and private research organisations to government bodies. Despite this diversity, research codes share a number of similar characteristics and concerns: the physical and mental well-being of the respondents, informed consent of respondents, the protection of privacy, the maintenance of confidentiality and anonymity, deception, plagiarism, covert or hidden research and the fabrication or concealment of findings (Bryman, 2004; Sarantakos, 2005; Parahoo, 2006).

The ethical research codes which informed and guided this study were drawn principally from three sources: (1) Trinity College Dublin ethical guidelines for post-graduate research, (2) the Social Research Association's (SRA) Ethical Guidelines (2003) and (3) the Sociological Association of Ireland's (SAI) Ethical Guidelines (2006). The SRA (2003) guidelines core principles identify the four primary stakeholders in the research process whose needs and views should be acknowledged and as much as reasonably possible addressed. The principles are outlined as a series of obligations to society, funders and employers, colleagues and to the research subjects. The elements of these obligations are in one form or another contained within the other two codes of ethics that informed this study. It is important to note that ethical guidelines particularly in the social sciences are far from being an exact guide. The reality can be that researchers at times may have to compromise if the research is to be carried out to its conclusion. This is not to advocate wholesale disregard for the basic tenets of research, there are limits to what can or cannot be compromised without undermining the whole research process, chiefly the welfare of the respondents (Blaxter et al., 2001). Roger Gomm characterises

this in terms of a "trade off between ...doing no harm and doing some good while doing research" (Gomm, 2008, p. 370).

While the obligations to all four groups are of course important, it is the rights and well-being of the research subjects that should occupy a central ethical concern in the design, implementation, analysis and publication of a study (Blaxter et al., 2001; Bryman, 2004; Parahoo, 2006). One of the most important characteristics of ethical research is that that potential participants should never be coerced to take part in a study; that their participation should be freely given, voluntary and fully informed (Sarantakos, 2005). The principles adhered to with respect to the subjects were: privacy, anonymity, confidentiality, avoidance of harm and avoidance of deception.

- Privacy - while the aim of any study is to illicit data the questions and topics touched upon should not delve into the private affairs of the respondents. This is "particularly important if the respondents are part of a captive audience, feeling obliged to take part in the study" (Sarantakos, 2005, p. 21).
- Anonymity – particularly where the sample size is small, attention should be paid to the use of demographic data least the person/s be identified. This point is particularly pertinent with this group given that they represented a subset of a relatively small group of residential childcare workers in counties Cork and Kerry. It is important to provide the reader with details of the cohort in order to set the context of the study; however this needs to be balanced against the participant's right to anonymity. Consequently, while every effort was made to provide the context to the study in terms of description and details of the stakeholders there was a limit to how much detail could be provided.

- Confidentiality - in order to maintain anonymity participants were allocated a number at the start of the study, which was used to identify them throughout the thesis.
- Avoidance of harm – participants should be protected from undue physical, mental or legal harm arising from their participation in research. Respondents should not be subjected to instruments that might promote self-harm, embarrassment, discomfort, stress or expose them to legal, social or economic consequences.
- Avoidance of deception – The SRA (2003, p. 14) states, "subjects' participation should be voluntary and as fully informed as possible". Each potential participant was spoken to on an individual basis where the purpose and the implementation of the research were explained. In addition, the participants were furnished with two letters: (1) written details outlining their role and the researcher's role in the research (see appendix K) and (2) a letter of informed consent which provided details of the participant's rights and a clear outline of the researcher's responsibilities (see appendix L).

With respect to obtaining informed consent the author was extremely mindful of the position that he was in being both a researcher and lecturer with the OEL programme. At the initial research briefing session the participants were asked not to indicate their intentions until a subsequent meeting thus affording them the opportunity to take time to consider their decision. Of the initial twelve research participants who agreed to take part in the research eight remained part of the sturdy over the two year period; there was no pressure to maintain a place on the study nor were those who chose to discontinue asked to explain or account for their withdrawal. With regard to consent from the college; prior

to commencement of the study permission to study the OEL group was sought from the relevant head of department responsible for the course (who was also the researcher's line manager) and after consultation permission was given to undertake the study.

In addition to the research codes, the storage and retrieval of data maintained on computers was consistent with the guidelines as set out by the two Data Protection Acts (Government of Ireland 1988 and 2003). The data was maintained on the researcher's home personal computer, which was only accessed by the researcher; it was (and remains to be) password protected, as were the files that contained transcripts of the data from the interviews and the diaries. All computer files relating to the study were also backed up on two personal memory devices that were kept securely; one in the researcher's office in his place of employment, the other device was kept securely at his home. The original raw data from the interviews was stored on audiotapes, which were kept securely in the researcher's place of employment, as were the diary originals and field notes. The diaries were subsequently scanned thus becoming electronic data and subject to the practices relating to storage of computer based files as outlined above.

The SRA's guidelines are quite clear with regard to the researcher's professional and ethical responsibilities regarding the protection of participants, especially where the participants themselves perceive no risk or danger from data disclosure: "it is the task of the researcher to maintain principles of confidentiality as far as possible so that the interests of subjects are protected" (SRA, 2003, p. 25). This point was particularly pertinent in this study as the participants prior to the commencement of the study had built up a relationship with the researcher and thus were perhaps more willing to trust him than they might otherwise have been to a an outsider. The teacher/researcher is a well-established feature of educational research and while there is the potential for bias

with this type of relationship it also affords a level of access and insight that might otherwise not be available to the outside researcher (Sikes 2006). Drake and Heath (2007, p. 127) in their work regarding the dilemmas faced by professional doctorate students undertaking research in their workplace acknowledge that such students:

> ...may be particularly compromised by the insider nature of their research, and in managing their location as 'insiders', they may necessarily change position, sometimes frequently, along axes with respect to both their research and their professional practice.

It is this element of the research that arguably presented the greatest ethical dilemma - quite simply how unbiased is (or can be) the whole educational research process when the educational researcher is also the educational facilitator/teacher of the undertaking being researched? While in no way seeking to minimize the importance of the ethical issues raised by the researcher and the teacher being one and the same it is important to briefly discuss the issues of bias and ethical research practice. Those adopting a positivist tradition to research argue that the dispassionate and impartial scientific approach utilised in the natural sciences should be applied to researching the social world (Blaikie, 2007). However, as a qualitative researcher, one must begin by acknowledging that all research by its very nature is imprecise and biased (Punch 1998). Sikes (2006, p. 105) argues that "all research endeavours have, at least potential, implications for any one touched in any way by them". By engaging with the participants through the research process, indeed the very choice of the subject matter is in itself an act of making choices. This acceptance should not in any way be taken as an indication that the potential for bias was not considered an issue and the potential for bias and the difference in power between the researcher and the researched needs to be acknowledged.

With all research activities, but especially with those adopting a qualitative approach there is a strong element of trust – trust in the way that the researcher conducts

him/herself before, during and after the data collection phase (Bryman, 2004). As previously noted in chapter two, one of the functions that VLEs can be used for is student tracking and monitoring. It is very easy for the lecturer to ascertain the level and extent of the student engagement with the VLE. At a basic level of tracking and monitoring a record can be generated about such things as time logged on and off, what pages accessed and what web links were used. However, a record can also be generated of the various communications engaged in such as the 'chat rooms' the discussion boards and e-mail traffic. This is a source of data that would not have been available to an 'outsider' researcher. In terms of the teacher/researcher relationship there were already ethical issues regarding power differentials; to utilise such data would have served to undermine the level of trust that is necessary in all research but particularly so in exploratory qualitative research.

In an attempt to produce ethical research the researcher's best tool is reflexivity, a level of self-awareness and an ability to act appropriately that can help inform and guide the research. The reality is well summarised by Gomm (2008, p. 374) where he acknowledges that despite principles and codes of practice "in the last resort most ethical dilemmas have to be dealt with in an *ad-hoc*, best-of-the-worst kind of way" [italics in original]. The issue of the researcher as the lecturer potentially offered a degree of ethical compromise; however, as stated previously the use of reflexivity, the provision of an audit trail using NVivo software and application of codes of ethical principles to best of one's abilities and guidance through the supervision process resulted in a study carried out ethically and appropriately.

Reflections on Research Process

The issue of completion fatigue when using diaries was noted in earlier discussions in the chapter and as can be seen by the falling rates this was certainly a factor. Allowing for a smaller number of participants towards the end of the research the drop in return rates was still notable. Aside from the drop in the number of diaries returned it was also evident that the level of care and attention that had be previously paid to dairy completion was in some cases noticeably lower often with the very barest of details completed, The number of diaries that were returned in the second semester without any comments in the open ended section of the diaries also became a feature. A number of the participants said that at times they had no diary to hand therefore in the second semester the diaries were also made available as an online word document that could be printed off and completed by hand. In order to increase return rates a decision was made in the second semester to occasionally text the participants to remind them to submit their diaries at the next face-to-face session. There was a concern that this could be seen as a prompt and thus affect the ecological validity where completion of diaries would become signal contingent rather than event contingent. However, this decision needed to be balanced against the importance of maintaining at least some level of flow of diary data. On reflection it might have been more advantageous to limit the diary completion times to a number of selected time frames; but again this could also have proved problematic as the participants would have to be reminded when to start and stop throughout the semester.

The interviews proved to be somewhat problematic at times as there was often a time constraint regarding the interviewing of participants. Where possible those participants who lived far from the college were interviewed before and after the face-to-face sessions

but this was not always possible so follow up interviews had to be arranged and given the shift work nature of the participants this was sometimes problematic to arrange. However, timing issues aside the benefit of having the diary data as a prompt worked very well as it provided a structure to the interview which the participants appeared and reported that they were happy about. A number of them remarked informally that the more open ended questions proved problematic as they could rarely think of anything to say when invited to simply comment or ask something general regarding the VLE or the course.

Another reflection regarding the interview process relates to the issue of being the researcher and the lecturer and the potential for bias that potentially presented. Rather than carrying out the interviews in person the use of another researcher could possibly have assuaged some of the concerns regarding the potential for bias and the ethical dilemma situation regarding power imbalances vis-á-vis participants (students) and researcher (lecturer). However, this would have presented a number of potential problems such as the extra resources required to hire another interviewer in addition to the time necessary to train the alternative interviewer to ensure inter-researcher reliability (Bryman, 2004). As the diary-interview method requires immersion in the diary data this would have entailed a not inconsiderable time and effort on the part of the interviewer to familiarise themselves with all the data. These potential problems and issues of course need to be balanced against the potential benefits that could be accrued from using another interviewer. As previously indicated one of the benefits of using insider researchers is that the participants may in fact open up to people they know rather than strangers so it is debatable as to how much (if any) extra material may have been gleaned using another interviewer. However, if the nature of the research had been evaluative

rather than exploratory the insider issue may have presented more of a problem and the outsider interviewer would have had to be seriously considered despite the potential problems just highlighted.

Finally, as can be appreciated that even with relatively short semi-structured interviews, after over thirty interviews the amount of qualitative data began to mount up. Taken in conjunction with the remarks and comments from the open ended questions in the diaries the data set became quite large and without the benefit of NVivo storage, management and retrieval would have been difficult. Developing mastery of a software package as comprehensive as NVivo is a major undertaking and something that is difficult for the lone researcher studying and working full-time. Nonetheless even with a more limited knowledge of the package its use proved to be of immense values for the reasons already outlined.

Chapter Summary

In one way the OEL group could be considered to be a convenience sample, however they also represented a very useful purposive sample. Insomuch as any small group encapsulates a wider population, this group captured the essence of many adult learners in terms of age, experience and attitudes to learning and technology. The fact that they lived in a geographically specific area does not diminish the power and strength of the data. The aim of this study was to afford a specific group of learners in a specific place and time the opportunity to tell their experiences albeit the experiences of a relatively small group. However, "simply because the focus of a piece of research may be small and may have little widespread applicability does not mean that undertaking that study is not worthwhile" (Farrelly, 2009, p. 160). In the context of this study the diaries were

certainly not without their implementation difficulties, nonetheless the use of diaries in this study provided the participants with a research method (in conjunction with interviews) that could 'capture' a sense of the way that they used the VLE in the context of being busy adult distance learners. Furthermore, in terms of addressing the power imbalance between the researcher and the researched the use of diaries (as opposed to student tracking) offered and ecologically and ethically sounder way of collecting data.

Chapter 4 – Analysis and Presentation of Data

Introduction

While this chapter presents the data in four discrete themes this should in no manner or fashion imply that there is no overlap between all four. Rather, the data, as presented is aimed at addressing the study's primary aim i.e. to explore the manner in which a group of adult learners utilised a VLE as part of a sustained formal learning undertaking. Rather than presenting the qualitative and quantitative data separately the data is presented in a thematic manner incorporating the qualitative type data generated from the interviews and open-ended questions in the diaries and the quantitative type data from the diaries relating to items such as connection type and time spent online. In order to contextualise the findings the chapter begins with a description of the research setting and the various stakeholders before providing an outline of the diary return and completion rates followed by a subsequent presentation of the four themes as identified in chapter three. The first theme: backgrounds/antecedents provides data relating to prior experience (both academic and ICT) and in the context of the debate around lifelong learning this theme also incorporates motivation for undertaking the OEL course. The second theme outlines the difficulties and issues faced by the OEL group. This theme is sub-divided into two sub-themes: technical issues and non-technical issues. The third theme provides an interesting insight into the activities and usage patterns that the group participated in whilst using the VLE. However, from an educational perspective, the theme which excites most interest is the date as it pertains to the manner that participant engagement developed. The most abiding participant experience that would seem to have emerged was the manner in which the OEL group developed adaptive and supportive strategies and emerged (some of the group) as different learners.

Description of Stakeholders and the OEL Programme

Creswell (1998) advises that employing a case study methodology requires the researcher to provide the 'context of the case', this includes locating the case in its setting, detailing the origins of the case and providing thick descriptions of the case participants. Thus, prior to the presentation of data, this section provides a description of the various stakeholders involved in the OEL project: the ITT, the HSE, the researcher, the course lecturers and the participants. In addition, although chapter one included some degree of detail about the course, this section also includes a fuller description of the course in terms of content, layout and delivery timetable.

The Institute of Technology Tralee (ITT)

The college was originally established as the Tralee Regional Technical College[45] (Tralee RTC) in 1977 under the control of the Town of Tralee Vocational Education Committee (VEC). It was reconstituted as an autonomous institution in 1993 under the terms of the Regional Technical Colleges Act (Government of Ireland, 1992); subsequently it was renamed in 1998 to become 'The Institute of Technology, Tralee (Government of Ireland, 1998). The next significant milestone came about in 2006 when the college was awarded delegated authority[46] status to confer its own awards up to and including taught Masters Degree level. Over the period of the study (2006 – 2008) the student numbers were approximately 3,200 of whom 1,000 were part time students (the majority of this 1,000 were craft apprentices) all of whom were served by 226[47] academic staff

[45] 'In response to the publication of *Technician Training in Ireland* (OECD 1964) and *Investment in Education* (OECD 1965), the Department of Education's *Steering Committee on Technical Education* concluded there was an urgent need to produce technically qualified people in order to plan for industrial development' (Hazelkorn & Moynihan 2010).

[46] Hitherto all awards were conferred by the Higher Education Training & Awards Council (HETAC). HETAC continues to confer Masters (by research) and Doctoral level degrees that have been supervised through ITT.

[47] Whole Time Equivalents

members (Hazelkorn & Moynihan, 2010). The early emphasis on industrial[48] and trade training in RTCs has gradually given way to a wider range of courses that to a greater or lesser degree incorporate the arts, health, humanities and social sciences in addition to engineering, chemical and life sciences and computing. Its commitment to facilitating training and education to as wide a constituency as possible is best captured by the institute's mission statement: "To excel in teaching, research and development work, for the benefit of students, industry and the wider community" (ITT, Undated).

The Health Service Executive (HSE) & Residential Care

As previously mentioned the decision to investigate the possibility of a part-time degree social care course was initiated by the health services Executive (South) residential services partly in response to the changing legislative context as a result of the previously mentioned Health and Social Care Professionals Bill (2004) and subsequent Act (2005). However, aside from the legislative changes, the commitment to implementing the OEL course reflected the HSE's commitment to improving standards in terms of personal and professional development which in turn would (hopefully) improve the level of care provided by said social care workers.

In 2008 in the HSE South region there were 24 statutory child care units ranging from open community based units to high support secure units where as the name suggests the children in care are afforded varying degrees of freedom to leave the unit of their own free will (Health Information and Quality Authority (HIQA) 2009). The children and young people are placed in these units for a variety of reasons such as (i) observation

[48] Regional Technical Colleges (RTC) should educate 'for trade and industry over a broad spectrum of occupations ranging from craft to professional level, notably in engineering and science, but also in commercial, linguistic and other specialities' (Government of Ireland, 1967)

and assessment of behavioural issues (ii) because their foster care placement has broken down (iii) because they face an extremely high risk of neglect and/or sexual and/or physical abuse in their place of residence, (iv) unaccompanied foreign national children without someone to care for them (this would only account for a tiny minority) (v) homelessness and (vi) because their behaviour is such that they present a threat to themselves or others and this behaviour cannot be managed in their place of residence (HIQA, 2009; McHugh & Meenan, 2009). The most recently published census of children in care 2008 published by HIQA (2009) indicated that of the 429 children in residential care, children under the age of nine years represented only 4% of those in residential care, the majority of children in residential care (91%) were aged between 12 and 17 with the 15-17 years of age category accounting for 61% (HIQA, 2009). It is generally accepted that many of the children in care (either residential or foster) have suffered early life trauma. Consequently as they grow older they may increasingly display challenging behaviour which in turn presents a stressful and challenging work environment for those charged with working with the children (McHugh and Meenan 2009). This level of dysfunctional behaviour in some cases manifests itself in terms of anger and aggressive and threatening behaviour. As can be appreciated, this type of behaviour can (at times) lead to a threatening work environment. Without seeking to be melodramatic, in one small-scale study (n = 72) of violence in social care work settings 94% of the respondents reported suffering both physical and verbal abuse while in work (O'Brien, 2009).

The Participants

The issue of maintaining anonymity and confidentiality was highlighted in earlier chapters but it is one worth repeating, while it is important to contextualise the study by

providing details about the OEL group in general and the research cohort in particular certain details have by necessity been omitted. As previously mentioned the research participants were all employed by the HSE as residential childcare workers in various residential units throughout counties Cork and Kerry.

They ranged in age from the late twenties to the early sixties with the average age being in the early forties. In terms of geographical distribution both the overall group and the research group participants were distributed along the lines of approximately of one third based in units in County Kerry with the remaining two thirds based in units in County Cork. With regard to prior academic experience, the participants were asked in their initial interview about their prior academic qualifications or experiences. The entire group had obtained the Irish Department of Education and Science's Leaving Certificate. In addition a number of the group had trained to be nurses but they recognised the difference between earlier apprenticeship models of nurse education and the more academically focussed degree course that they had embarked upon. Two of the group had previous experience of distance education with the Open University. One of the participants (#12), commenting on the advantages of the blended model remarked that "compared to my time with the OU this has been so much better, I got to meet people from around and not have to go up to Dublin like I did with the tutorials".

As highlighted in the previous section working in residential child care settings can be a difficult and demanding profession. On a number of occasions various members of the OEL group were missing due to being attacked and were recovering either from an acquired injury or from the trauma of the attack. It is not hard to imagine that when

teaching this group of people an especially considerate, supportive and understanding approach was required.

The Course Lecturers

Over the three year period of the OEL programme eleven lecturers were involved in course delivery. As the course was initially delivered as an add-on through the college's development office and not an integral course under the umbrella of the School of Business and Social Studies invitations (rather than being allocated teaching hours) to teach on the course were initially extended to the permanent social care course team members. The result in the course being initially offered as an external course is that whole time lecturers who undertook to teach on the course done so in addition[49] to their usual teaching load. When one considers that the required teaching load in Institutes of Technology for lecturers is sixteen hours and eighteen hours for an assistant lecturer it can be appreciated that taking on the OEL course represented a huge challenge in terms of extra time needed preparation, WebCT training and teaching. Aside from the two OEL course developers only one member of the course team indicated a willingness to teach on the programme. The remaining course team members were recruited from the bank of part-time lecturers that the college employs. Only four of the eleven lecturers were employed on a permanent whole time basis with the other seven employed on contracts of varying nature in terms of duration and tenure. Of the eleven lecturers only the researcher and another colleague (the OEL co-developer) in the Humanities and Social Studies department were consistently involved in the programme from initial conceptualisation, recruitment and course delivery. Of the remaining nine lecturers, three of them lectured for two years of the programme (either years one and two or two and

[49] Paid at the part-time hourly lecturing rate.

three) with the remaining six only lecturing one year. As can be appreciated, this level of staff turnover made it difficult to develop and maintain a level expertise regarding the use of WebCT as a teaching platform. This situation was exasperated by the fact that most of the staff team had little or no prior experience of using WebCT or if they did have some experience it was simply to use WebCT as a content repository. One of the staff team had prior experience of using Moodle but that had been as a post-graduate student and not a lecturer. Despite the difficulties and shortcomings the course delivery team maintained a strong commitment to the students and to the course; the high rate of student retention and completion is a testimony to delivery team's efforts.

The Researcher

Punch (1998) argues that due to the often highly personalised nature of qualitative researchers should provide autobiographical details in order to provide a context that can help to inform the reader why the researcher chose a particular research topic or research approach. The transition from seventeen year old apprentice fitter and turner to forty six year old Doctoral researcher has been a long and eventful one incorporating many twists and turns but in hindsight one which had at its core the aim of personal development and more latterly professional development. Starting with an undergraduate Social Science degree aged thirty-three with the Open University (OU), moving on five years later to undertaking a Master in Education and culminating in this Doctoral thesis, the last thirteen years have been spent juggling family responsibilities, building an academic career as a lecturer in ITT and the OU (for three years) and studying. At the core of my philosophy of education is a commitment to lifelong learning as a vehicle for personal expression and development. However, I am not naive enough to think that every stakeholder in education feels the same way. For many people education is simply a

means to an end, a transaction to be engaged in order to obtain a qualification and as such they are motivated by external forces.

Regardless of the motivation for a student to engage in education, as their lecturer I endeavour to make the learning process as interactive and engaging as possible. To this end I make extensive use of WebCT and re-usable learning objects (RLOs) to create as interesting constructivist learning environment as possible. While I do make extensive use of e-learning technologies I am not blind to the issues associated with their use and would thus classify myself as a critical technophile. While I can certainly appreciate the merits of the quantitative approach to research I would lean towards an interpretative approach to research where I seek to explore and understand the participant's perspective. Consequently when faced with the issue of deciding on a topic for research I was interested in how I might better employ e-learning technologies for a group that is often marginalised in terms of access to third level education – adult learners, particularly those who live in rural remote areas I wanted to give the learners a voice by using an interpretative approach to research.

Programme description

The overall BA Social Studies (Social care) course structure was outlined in table one in chapter one. The following three tables provide a detailed outline of the various modules and the extent of face-to-face and online teaching and learning that was expected to be delivered on a monthly basis. In addition, at the commencement of each academic year there would be a session in the college's north campus in Tralee that focussed on a mixture of module subjects and general student support and training. In the first year of the programme there was an induction week that concentrated on WebCT training,

Microsoft Word, library services (including the online facility) and study skills. Thereafter (for second and third year) the beginning of year sessions was of three days duration. The e-learning supported hours were designed as either synchronous discussions or other structured learning activities that required the student to work through a learning activity such as having to visit an organisation's website and find out specific information and write up a report or perhaps work through an online quiz.

Title of Examination Subject	**Contact Hours (Per month)**	**E-Learning supported hours (Per month)**
Community Care & Residential Services	4	8
Applied Social Care	4	8
Sociology & Demographics	4	8
Psychology	5	10
Creative Practice	3	6
Communication & Social Care	5	10
Family Support	3	6

Table 10 First year modules & expected time commitment

Title of Examination Subject	**Contact Hours (Per month)**	**E-Learning supported hours (Per month)**
Psychology	5	10
Sociology	4	8
Health & Leisure	4[50]	8
Social Policy	4	8
Communications	4	8
Legal Studies	4	10

Table 11 Second year modules & expected time commitment

[50] The health and Leisure module had a number of required activities and these were facilitated by attendance at a one-day workshop in IT Tralee

Title of Examination Subject – 1st Year	Contact Hours (Per month)	E-Learning supported hours (Per month)
Psychology	5	10
Legal Studies	4	8
Leading & Managing in Social Care	4	10
Skills Laboratory	5	10
Communications	4	8

Table 12 Third year modules & expected time commitment

Diary Completion Returns

As noted in chapter three there is always the potential for 'completion fatigue' amongst respondents; this feature was somewhat evident amongst this group if the return rates are an indication. Aside from the diminishing return rates, the level of diary detail completed appeared to tail off towards the end of each semester, notably semester two. The number of diaries returned for semester one (Sept. 2006-Dec. 2006) was 195 compared to 107 returned for semester two (Jan. 2008-May 2008). The rates vis-à-vis the case study size are summarised in table thirteen.

	Number of Students on Programme	Number of Research Participants[51]	Number of diaries returned
Semester 1	19	12	**195**
Semester 2	**17**	**10**	**107**

Table 13 Number of participants & returned diaries

As can be seen from the table, the number of participants was lower in the second year although it must be acknowledged the initial 12 participants effectively became 10 quite quickly as the initial willingness to become involved either faded in one case and in the other case the person resigned from the course. Three new people entered the course in semester two, one of whom agreed to take part in the research. Aside from the lower return rates it became increasingly difficult to encourage some of the respondents to

[51] In semester 2 the number of participants who initially submitted diaries was ten. However, due to a number of reasons only eight continued to submit diaries and take part in interviews.

complete the diaries and when diaries were completed they were done so with less attention to detail. Nonetheless a total of 302 diaries offered a large body of data which when taken in conjunction with the interviews produced a substantial body of evidence. However, it is worthwhile to note that intra group completion rates did vary quite considerably in both sessions. In session one the highest number of returned diaries from one participant was 42 whilst the lowest number was 5, with the median figure being 14; the comparable semester two figures ranged from 27 to 3 with the median figure being 9.

Background/Antecedents

This theme explores a number of issues relating to the background and antecedents that formed and informed the participants prior to their undertaking the OEL course. The issues or sub-themes explored in this section relate to the participant's prior learning experiences (traditional and/or through the use of new technologies) and the motivation for commencing the course. While there is no attempt to draw inferences with regard to the relationship between prior experiences and technology acceptance and usage patterns this section is useful as it provides data which helps to contextualise the subsequent sections as well as providing thematic data in its own right.

Prior Computer Experience

The levels of qualifications and/or experience a student has prior to embarking on an education programme can have a huge impact on the level and quality of engagement that a student derives from that particular programme. As discussed in chapter two the degree to which a person accepts or embraces new technology depends on a number of factors one of which is their pre-disposition to that particular technology. Courses that incorporate e-learning as an element of their delivery strategy may have to contend both

with reassuring and supporting students who have had prior negative experiences of education and a fear and/or inexperience of using computer technology.

As previously mentioned in chapter one approximately six months before the OEL course started in September 2005, prospective students were circulated with an ICT skills questionnaire as part of the course design team's research. The prospective students were first asked to indicate their felt level of proficiency with three Microsoft packages of Word, Excel and PowerPoint. Ten of the original twelve study participants completed the ICT skills questionnaire; a summary of their responses are presented in table fourteen below.

	None	Beginner	Intermediate	Expert
Word	1	3	6	**0**
Excel	3	4	3	**0**
PowerPoint	**3**	**4**	**3**	**0**

Table 14 Participant proficiency with Microsoft packages

Clearly one shortcoming of such a general questionnaire is that it relies on the participant's felt level of expertise. For example someone who is a relative newcomer to using computer packages may have an over or under inflated concept of their abilities and knowledge. Nonetheless it provided a useful sense of where the participants were in terms of general ability and knowledge to use computers and importantly their general confidence to engage with same.

The second part of the questionnaire was used to ascertain the prospective student's knowledge and abilities regarding the use of specific elements of internet use. This set of questions provided somewhat more definite information as it simply asked have you used

any of the following elements with a resultant Yes or No required. The responses of the aforementioned ten participants are presented in table fifteen.

	Yes	No
Use internet search engine (such as Yahoo or Google)	9	1
Retrieve articles from the internet and save the	7	3
Send and receive e-mails	7	3
Send and receive e-mail attachments	4	6
Experience of participation in online discussion	1	9

Table 15 Prior experience of internet use

Overall the ICT skills questionnaire presented a picture of a group of people with mixed abilities and experiences of using the internet and Microsoft software packages. The interviews had two primary purposes. Firstly, they enabled a more detailed picture of the participants with regard to their knowledge and experience to be gained. Secondly, the interviews also allowed insight to be gained into the way that the participants felt about the way they used and interacted with computers in general and the VLE in particular.

- I have a computer at home as well and I would be on the internet. As a matter of fact I'm on the internet too much sometimes especially at night. But to be honest there is a hell of a difference between messing about on the internet and actually using it for real, discussions, downloading and printing off notes and the like (participant # 6)
- Well I suppose I was a bit worried, well not worried about the computers but concerned a bit I'd say. I can't type and I don't have a computer at home (participant #3)
- I use the internet a lot for searching for things and online booking of tickets and flights and stuff. I had done two modules of the ECDL, the word processing and using the Internet so I'm happy enough (participant # 10)
- I suppose like I said to you before I'm fairly happy using computers so I don't get phased or freaked out even if things don't go right, I know I'm not going to launch a missile like you said one time about your dad the way that he was afraid of them (participant #12)
- Well Tom, you can probably guess that answer, next! I'm only joking but no, I don't use, won't use them (participant # 9)
- I had done the basic computer course laid on by the health board and had been practising a lot at home, many years ago I done some typing classes, but I quickly realised that word processing and typing are completely different (participant #7)

Overall there was a low level of formal qualifications apart from one who had completed all seven modules of the ECDL and a further two with some modules of the ECDL and a

further three who had done a basic computer course with their local education provider. However, the results of the skills questionnaire taken in conjunction with the general confidence levels expressed in the diaries and interviews portrayed a picture of reasonably good or at least adequate levels of ability, knowledge and confidence regarding the use of the internet and computers.

Motivation for commencing OEL programme

Discerning the primary motivation for any action is rarely straightforward. In reality there can be a number of factors, some of them competing; some of them complementary each with their own set of advantages and disadvantages to recommend that action or inaction. The reasons for commencement that emerged from the data can be drawn into three sub-themes: (1) career change or advancement (2) personal fulfilment and (3) new opportunities/experiences.

Career Change or Advancement

Those participants who cited career change or advancement did not seem to have any grand 'master plan' when it came to articulating a specific target or objective in terms of their career. Rather it was frequently placed in somewhat generalised terms about seeking some form of change to another area of social care work. For example, participant # 1 remarked that "I'm at it long enough (the childcare work) to know that I like it but I also see where I would like to go with it but without qualifications I'm stuck in residential and I don't see myself there forever". This desire to move out of residential childcare was also expressed by participant # 11 where she stated that "I'm not sure where I want to end up but I know that I don't want to be stuck doing residential". Participant # 2 also

echoed this sentiment: "hopefully I'll be able to change jobs in the future or at least I will have the chance to change if I want".

Participant #12's intentions were expressed quite strongly but again the level of ambition was expressed in more generalised terms regarding the gaining of a qualification and progressing their career:

> This degree is one hell of an opportunity both to get a qualification; but also to whatever it may lead to in the future. I'm still comparatively young and this could be just the opportunity to really start achieving something.

The need for qualifications was also cited by participant # 10, however in this case he had a very specific reason for wanting the qualification: "I'm acting up [temporary promotion] at the moment but if I have any intentions of promotion I will need the qualification".

Personal Fulfilment

Whilst the desire for professional development was certainly a strong theme for some of the participants, personal fulfilment was also cited as a precipitating factor. It is worthwhile noting that the three participants (# 3, 7 and 10) who referred to personal fulfilment in one form or another were all aged 50 years and over. This is not intended as an ageist comment rather that some of the participants perceived that the benefits and advantages that might accrue in professional career terms might be somewhat limited due to their shorter working life post-course. Participant #7's comments are a good example of this perception: "I know that I said it earlier but I have loved doing the course. At my age it certainly wasn't about promotion or changing jobs". She remarked in a subsequent interview that "I was in the lucky position of doing something simply because I wanted to learn and do something different".

Another participant's sense of personal fulfilment seemed to have a strong resonance with the idea that it was her time now: "It would be nice to get a degree; I've put two children through college so it might be nice for them to see their mammy standing up there on stage" (participant # 3 interview). The third of these three participants (#10) referred a number of times to the sense of satisfaction from achieving a degree over twenty years after they had first embarked on a social work degree: "this degree has been over twenty years in the making starting back all that time in London, yeah will be great hopefully".

New Opportunities/Experiences

The third sub-theme incorporated a number of topics that were broadly categorised as new opportunities or experiences relating as they did to reasons or benefits of course participation that were not specifically related to personal fulfilment or career advancement. For example, two of the participants said that as they worked a permanent night shift – "it gave me a great break from the nights" (participant # 2 interview).

The other notable benefit that participants reported were the opportunities to work in different settings other than residential during the work placement semesters. Whilst there were references to possible career change the comments also reflected a strong desire to embrace new experiences and knowledge:

- "I loved the placements especially in ------ with the child protection team that was one of the best things about the course really was the chance to try different things even if I don't get a new job out of the course I have done and learnt so much'"(participant # 2 interview)
- "I loved the opportunity of the different work placements especially the ---- in Killarney" (participant # 1 interview)
- "If it wasn't for this course I don't think I would have got the opportunity; in fact there is no doubt, I wouldn't have had the opportunity" (participant # 7 interview)

It is worth noting that although the reasons given for participation varied widely there was no reported element of compulsion. None of the participants were required to undertake the course nor would they derive any direct monetary benefit by acquiring the qualification at least not directly.

Difficulties and Issues Faced

Technical Issues

The technical issues data refers to issues that impacted on the ability of the participants to use the VLE due to such factors as speed of internet connectivity, firewall protection, software and hardware problems. The issue of IT support is explored in this section although it is a valid point to consider whether it could also have been categorised under the other main theme of support. Exploring the use of technology, albeit adopting an interpretative participant led research perspective was almost certainly bound to identify technical/technological issues as a theme in some form or other. Nonetheless, this theme in particular needs to be contextualised. The ability to utilise any technology has a social as well as a technical dimension. The example of the 'digital divide' in chapter two was a case in point where regardless of the advances in technology this technology is not available to all it affects the learning experience of those excluded. Effectively, the data in this study highlights the nexus between technical/technological issues and learner experience and should not be taken as simply a litany of technical issues and problems devoid of educational and social context.

Connectivity

Whilst the aim of the qualitative data is to produce a greater depth of richness and not necessarily a straightforward 'head-count' it is worth noting that the issue of

connectivity was the most coded topic during the initial data analysis phase with sixty-six references to connectivity and thirty-seven references to broadband in the free nodes. In the diaries the participants were asked to indicate the time that they spent using the VLE and the type of connection they used to access the internet. There was some very slight loss of data due to a few cases where people indicated what times they had logged on but failed to indicate if they had connected using broadband or dial-up.

	Mean Time (mins)	Median Time	Std. Dev.	Mode	Max	Min
Semester 1 (All) n= 168	34.4	25	29.0	15	210	**2**
Semester 1 (Broadband) n= 99	33.8	30	22.8	15	110	**3**
Semester 1 (Dial-up) n= 60	35.7	20	38.3	10	210	**2**
Semester 2 (All) n= 98	31.2	26.5	20.9	30	135	**5**
Semester 2 (Broadband) n= 61	30.1	30	18.0	30	90	**5**
Semester 2 (Dial-up) n= 30	**33.6**	**25**	**27.0**	**25**	**135**	**5**

Table 16 Time Spent on System

Within a range of low to mid thirty minutes, the average time spent on the VLE in both semesters appears to be quite consistent both inter and intra semester. Interestingly the average time spent online does not seem to indicate any significant difference regardless of whether the participants accessed the VLE via dial-up or broadband. Consequently an independent t-test was carried out to establish if there was any statistically significant difference between the two groups. The test results indicate no statistically significant difference in the mean times between the two connections for either semester:

- Semester 1 - ($t(159) = 0.701, p > .05$, two tailed)
- Semester 2 – ($t(91) = 0.461, p > .05$, two tailed)

However, there is an important caveat to the issue of connection types; that is the nature and quality of the online experience. Quite simply, whilst the average time spent online appears consistent, data from the open-ended questions in the diaries and from the interviews indicates that the quality and level of use was quite different between the dial-up and broadband participants.

For example, in both semesters the maximum time spent online was from a dial-up participant. However, it is quite clear from the comments of this participant (#9 interview) that the time spent connected was not always time spent in a productive manner:

> A few times I would be getting up to make cups of tea whilst I was waiting so I wasn't just sitting there all the time while I would be downloading notes or it might just freeze and I would have to start all over again
>
> (Participant # 9 Interview)

She (participant #9) went on to say: "I did say that I have dial-up so when you see the length of time you don't see the length of time I was just sitting there trying to log on". Participant #11 commenting in her diary complained that dial up is "very slow, so got fed up with it very quickly".

Another participant reported that: "I don't have broadband so I wouldn't be on the net too often, takes too bloody long to download anything, pictures and stuff; sure you saw the problems we had with some of the notes last year" (participant #1 Interview). The same participant in a subsequent interview bemoaned the fact that he found it difficult to undertake research: "I remember one time trying to get some figures from the census from the CSO website and I gave up after about 20 minutes I was so sick and tired of it".

The tedium of waiting for dial-up was also commented on by another participant (#7) in an interview where she noted that compared to dial-up "broadband would encourage you to go online rather than seeing it as a chore". The same participant first connected to the

internet via broadband half way through the second year of the course noting the improvement: "It was so much quicker it was hard to believe that it was the same system at times, everything was so much quicker and I could really use the online chats". Discerning an improvement in the quality of the VLE experience due to connecting to broadband was noted by other participants as well. For example: "yeah, last year I got broadband so compared to the early days it was fine" (participant # 10 interview) and "when I got the broadband in at the end of last year it was like getting a new internet, everything was just so much quicker, I could do all sorts of things that I couldn't before" (participant #1 interview).

Aside from download speeds the ability or inability to take part in the synchronous discussions was one of the most marked differences between the two groups of connectors. As one of the participants (#12 interview) commented: "I live out in the country so I only have dial-up so when I hear about the online discussions I felt somewhat left out". Another participant (#1) who had dial-up at the time of this interview said that: "I tried to go online but half the time it was too slow so I got fed up". This participant (#10 interview) appeared to have appreciated the benefits of switching from dial-up to broadband when he commented that: "I now have broadband for the new year so that should make things better, it was a bit of a pain in the arse at times with the dial-up especially for the online discussions".

In summary, the problems associated with not having broadband included: very slow downloading for large documents particularly reports and other such large documents often in PDF format, inability to fully partake in synchronous discussions, slow logging on and pages freezing where the computer simply crashed. The issue of the system crashing or freezing was a recurrent theme for both the broadband and dial-up connectors

although it was more prevalent amongst the dial-up participants.

IT Support

Even the most experienced of ICT users can require help and support at times. For a group (OEL) that comprised a majority of novice ICT users the importance of being able obtain appropriate and timely support of their e-learning activities can hardly be overstated. The experiences of this group demonstrated the importance of having an agreed protocol for the support of off campus remote users; sadly their experiences were not always positive. A diary comment from participant (#9) illustrates this important issue: "I tried ringing the college helpdesk but they just tell you they don't support off campus which seems really stupid because that's what I thought WebCT was about particularly the OEL course".

It might seem self evident that IT support be one of the main characteristics of an effective blended learning course however, as discussed in chapter two there appears to be consistent approach to supporting the needs of distance learners using VLEs. The inability to log on was one of the most consistently reported problems cited in the diaries. The trouble was that participants were often unsure what the nature of the problem was, therefore they were unsure who to ask for help. Sometimes they were presented with a message that proved to be rather vague as these three entries from participant # 7 over a five day period show:

- "Your WebCT session has either timed out or you are trying to access contents that require a valid log in as a general user, please log in again". WebCT is proving not to be the easy tool it was
- "WebCT unsatisfactory – error message" often appears when – actually connected! – Often get message 'session timed out?
- "WebCT has encountered a problem. Contact your system administrator"

During a subsequent interview, participant # 7 asked "who is the system administrator when I'm at home?" It is easy to imagine the frustration of a remote student, working on assignment after standard office hours at home perhaps sixty miles from the college trying to decide what to do when they receive such a message as indicated above.

One of the most consistently reported problems was an inability to log-on to the VLE or at times to even log-on to the ITT website. Whilst this inability was due to a number of difficulties such as poor connectivity, software incompatibility, problems with the college's server or incorrect registration of the student the cause was not always apparent to the participant at the time. Consequently IT support was often the first source of support that they turned to particularly if the message appeared somewhat ambiguous such as this message recorded by participant #6 in her diary: "WebCT has encountered a problem. Contact your system administrator". However, as previously noted, for the student who is sitting at home in rural County Kerry or County Cork, they can be left wondering who is their system administrator is. In a subsequent interview the same participant when clarifying the issue of seeking help with logging on difficulties they replied:

> ... nobody could tell me that for a while, I tried ringing up the computer helpdesk, the admissions, yourself I can't remember to be honest but I do remember that it seemed to take ages to find out.

Even when the source of the problem was identified and acknowledged the problem of remotely accessing IT support by telephone was further compounded with the number of participants who worked shift patterns and thus were not always able to ring at times convenient to both themselves and the IT support unit in the college as highlighted by these three participants:

- "The trouble with working and studying part time is that all the services seemed to be based on a student who actually is on the college site where they can drop in any time or drop back in half an hour or something" (participant #3 interview)
- "Here we had to try and ring and they would ask me to ring back and then I won't be able to and so on" (participant #11 interview)
- "When you work shifts and stuff it can take a few days or a week to get someone to give you an answer" (participant #6 interview)

Notwithstanding the reported difficulties it is important to note that the participants were also complimentary to the general level of support that they did get if they could sort out the lines of demarcation as typified by this comment: "To be fair the most of the people were very helpful and tried to help it's just that sometimes no one was quite sure whose job it was" (participant #11 interview).

Hardware

The availability and suitability of the hardware used to access the VLE was another issues raised by the participants. Although as previously noted the internet can be used by a number of devices such as mobile phones and PDAs all the participants connected to the VLE using desktops and/or laptop computers. Once again it needs to be noted that there is a large degree of overlap between this and other themes notably in this case connectivity, software and access issues. For example even where a participant had broadband connectivity their computer's processing speed and memory capacity may have impacted on their ability to fully utilise the VLE, for example: "did have difficulty sometimes downloading and opening some course material but my computer isn't great at the moment so this could have been the difficulty" (participant #5 diary).

Another issue that proved difficult to resolve due to the number of factors centred on participant access (or lack of) to computers in their workplaces. Initially the OEL participants understood that they would have access to the computers in their workplace.

However, in some instances this proved not to be the case: "I found that my computer wasn't really up to speed and I thought that I would be able to use the computer in work which didn't really happen" (participant #6 interview). The lack of processing speed was also found to be an issue that presented itself when software specifications changed such as they did at the end of year one when the VLE changed from WebCT campus edition 4.0 to campus 6.0. With the increased functionality came an increased requirement in terms of the computer's capabilities and sometimes this proved to be too much as in this case: "I knew that it was an old computer but I didn't realise that it was that out of date" (participant #7 interview).

Software

Whilst WebCT campus version 6 certainly had a higher degree of functionality, especially for the designer, it made a number of demands on the computer's software package requiring a number of changes to the computers' build. One of the notable software requirements is Java[52]. The primary source of software incompatibility was with regard to Java or more precisely the version of Java which was compatible with campus version 4.0 but presented difficulties when campus version 6.0 came online. Problems associated with having more than one version of java, or having an incorrect version include:

- Difficulty logging into WebCT 6
- Inability to upload files to WebCT
- Malfunction of tools such as Chat, Email, and/or Discussions
- Inability to use the HTML editor to format text

It is clear that the first three of the problems listed were certainly experienced by the participants to a greater or lesser extent at various times during the course. It is useful to

[52] The Java application permits the computer to securely run and interface with a large variety of software application. The Java Runtime Environment (JRE) is an absolute requirement for WebCT to function.

speculate if some of the difficulties reported by the participants that were attributed to connectivity problems notably lack of broadband were in fact the result of software incompatibility.

In order to overcome some of the difficulties the participants required a number of software upgrades: Adobe Flash and Java which are available free to download. Whilst this did present a challenge to the lecturers who were using college computers with the attendant in-house support it clearly presented a challenge to the participants. Returning to one of the most consistently reported difficulties i.e. connection to the internet via dial-up, meant that downloads would take an unfeasibly long time most likely resulting in the connection being dropped; and that was not even considering the cost of paying for phone line connection time. In addition to connectivity issues some of the participants expressed unease about downloading software as they were unsure of the procedure; concern was also expressed about possible computer security: "I hate it when I get a message saying I have to download some software because I'm never really sure what I have to do or if it is a virus or something" (participant # 7 diary). Consequently a decision was made to provide a CD[53] with the necessary software which was given to all the participants in October 2006.

Aside from affecting the computer's ability to operate the VLE as intended, upgrading the version of WebCT added another degree of difficulty for the participants. In the first year of the course they had developed a degree of familiarity and competence with the

[53] In addition to the Java software, the CD also contained a Macromedia Flash player; this allowed the students to view short image files and demonstrations that were included as part of the course material. Some lecturers were using eBooks (electronic books) which were online embedded versions of textbooks released under licence to the publisher to the WebCT Company for use inside the application. These contained movie-like demonstrations that could be viewed by the students once the application was installed.

VLE that they felt was now diminished due to the change. Participant # 4's diary comments are quite typical of many of the other participant's feelings about the new version of WebCT:

> This was my first time accessing information through the new WebCT format. I found it a little more time consuming having to go in and out of areas of each subject. There must be a more straightforward way I just haven't realised yet.

Participant # 2's (interview) shopping analogy provides a very apt sense of the frustration felt:

> ...when the WebCT changed this year it threw me a bit, I like being used to things, it's like going to a supermarket that you know and they change everything around, I didn't know where the bread and tea was anymore.

Non-Technical Issues

Non-technical issues are along with the theme of support one of the two themes that arguably most strongly relate to and impact on the situation of being an adult learner. This theme looks at the topics of prior learning experiences (academic and/or ICT), life events, temporal and situational issues regarding accessing the VLE and the points of stress relating to using the VLE.

Temporal Patterns of Use

Diarists were asked to indicate a number of other factors that impact on all online users but given the nature of the work-life balance encountered by adult learners' matters such as when, where and how did they access the VLE are of crucial importance in understanding the usage of VLEs by such learners. Although not every diary indicated the time logged on (n=164 for session 1 & n=98 for session 2) the trends are quite marked in terms of preference for evening and night-time use. The figures for semesters 1 and 2 are contained in table seventeen below.

	8am-12pm	12pm-4pm	4pm-6pm	6pm-8pm	8pm-8am
Semester 1	17	18	16	50	**63**
Semester 2	**6**	7	**12**	**32**	**41**

Table 17 Log-on Times

As the participants worked shift patterns asking them what time that they logged on only gave a partial picture of temporal usage patterns. For example, a shift worker who logs on at midnight after finishing work at 11pm may be utilising the VLE in a somewhat different pattern or manner to a worker who also accesses the VLE at midnight but who finished work at 5pm. Consequently participants were asked to indicate if they logged on: before commencing work, in work, after work or on a day off work?

The responses for both sessions are summarised in table eighteen.

	Semester 1	Semester 2
Before Commencing Work	42	31
In Work[54]	18	7
After Work	19	22
A Day Off	61	31

Table 18 When logged on relative to work patterns

Access Points

Obviously temporal patterns of use are important, but understanding the adult learners' situation also requires ascertaining the where as well as the when. Participants were also asked in the diaries to indicate where they accessed the VLE from and what their situation at that time of access was. In session one and session two the diarist's home was

[54] The numbers indicating that they logged on in work may appear at odds with a previous section; this is due to the inconsistent rates of full diary completion.

the predominant location with 74% and 77% respectively used for accessing the VLE. In semester one 12% of the sessions were accessed from the diarist's workplace however, by semester two only 10% of the sessions were accessed from the workplace. In semester one, local libraries accounted for 10% of the locations whilst the remaining 4% were accessed from Internet cafes whilst the comparable figures for semester two were 9% and 3%.

Availability of hardware or more importantly physical access to a computer within the home was another issue that was commented upon, in particular the issue of sharing computer resources in the home with other family members, most notably with the children. This parent when talking about difficulties encountered during the course commented that the situation "could be bad at times in the house trying to get onto the computer with teenagers in the house is not always easy. They would be coming in and asking was I finished with it yet? When could they go on the computer?" (Participant #3 interview). The experiences of this participant certainly echoes the point raised by Creanor et al. (2006: 5) where they noted that: "having materials and coursework online is great for access - but you will need to make sure you can get on to the computer".

For some of the participants the problem of sharing computer resources at home became acute because they had an expectation that they would be allowed to avail of the work based computers to access the VLE. At the recruitment and design phase of the programme there was a general expectation from the management team of the HSE and the college that VLE internet access would be available in the units where the participants were working. However, due to a number of reasons as outlined in the technical issues section of this chapter this internet access was not generally available; thus leaving a sense of disquiet amongst some of the participants:

- "I expected the HSE to become more involved in letting us using the internet but that has proved to be a bit of a problem to say the least" (participant # 8 interview)
- "When we signed up we thought that we could access the computers at work more than we could, it seems to vary from house to house" (participant # 1 interview)
- "I don't have a computer at home so I was just hoping that the work would let us use it as they said they would" (participant # 4 interview)

Participants were also asked to indicate the nature of their situation with regard to competing calls on their time in the form of asking them if they were free to work: without disturbance; with some minor disturbance/s or if their work was erratic due to many disturbances. The semester one diaries had a 74% (n=144) completion rate for this question whilst 79% (n=84) of the semester two diaries provided a response.

	Semester 1	Semester 2
Without disturbance	87	**42**
Minor disturbance	34	**28**
Many disturbances	**23**	**14**

Table 19 Levels of disturbance whilst accessing VLE

The 'disturbance' responses were cross-tabulated with the responses from section C of the diary to investigate the nature (if any) of the relationship between levels of disturbance and location of access. In the two semesters where both questions were not completed this comparison was not possible, however the slippage is relatively minor and hence general trends can be discerned.

	Semester 1 (n=130)			Semester 2 (n=76)		
	Home	Work	Internet café/Libraries	Home	Work	**Internet café/Libraries**
Without disturbance	58	3	8	41	3	**3**
Minor disturbance	25	12	9	13	3	**2**
Many disturbances	**11**	**6**	**1**	**8**	**2**	**1**

Table 20 Cross-tabulation between VLE access location & levels of disturbance

Given that the home was the most popular location for accessing the VLE it is not surprising that it dominates all three categories of 'disturbance'. What is apparent is that 'the home' whilst being a location that is often relatively free from disturbance, represented a challenging environment for some. For example in semester 1 whilst 58 experienced no disturbance whilst working at home a further 36 reported some degree of disturbance. This pattern was repeated (although not as marked) in semester 2 with 41 reporting no disturbance whilst another 21 again reported some degree of disturbance at home.

Again, given that the majority of the participants lived with other people and in many cases also had children (some of them very young) this level of disturbance is perhaps not surprising. Taken in conjunction with the working and sleeping patterns associated with working irregular shift work it can be appreciated that the times when a participant might be free might clash with other familial responsibilities. Participant #1's comments are highly indicative of this issue stating that:

> The trouble was that sometimes I went to bed got up and in the evening about half six or so and try to do a bit, but you know that everyone wants to talk, fight, shout and watch television, sometimes all at once.

The dual responsibilities of caring and studying often experienced by women adult learners are particularly evident in this excerpt from an interview with participant #9:

> Apart from that I would be disturbed by the kids if I was trying to do some work and they would be asking for this and asking for that. I go to work for a break some nights to be honest. I could scream sometimes with the mammy have you seen this and mammy where is that?

The issue of families as a source of support is presented in a subsequent section of this chapter. However, it is important to acknowledge that living and care responsibilities can and do impact on the adult learners ability to devote as much time as they may wish to

their course. Two diary entries from participant # 9 over a one week timeframe provide good examples of how family crises such as illness can tie up the adult learner:

- "Haven't logged on for some time due to illness and a family situation"
- "Haven't logged on for past week or so due to serious illness of a family member and constant hospital visits"

Even where there is no serious family event or crisis the response to competing demands on time may induce distance learners to temporarily cease or at least minimise all course work for a period of time as typified by this diary entry: "not having family time so took the week off from college work" (participant #12).

Combining Coursework and Paid Work

In addition to having to take account of and manage the balance between coursework and home life the participants also had to take account of their work responsibilities. The arrangement with regard to being released was that as much as possible the course should be cost neutral in terms of providing cover while participants were in attendance at the face-to-face classes. If the participants were not due to be on duty they were simply expected to attend class in their own time. However, the assumption was that on balance the participants would end up having to only attend approximately 25% of the classes on their own time. Notwithstanding this arrangement some of the participants appeared to have had less than positive experiences with regard to this issue:

- "I thought that we would be better supported with this course regarding time off, I had to use up three of my holidays this year and that's not what I thought that I was signing up for" (participant # 8 interview)
- "Everything is fine as long as nobody is sick or on holiday, but if they are tight then it's hard to get off or there were times when I was in work at night and had to go in to the course the next day" (participant # 1 interview)
- "Not really, there was two occasions when we were short-staffed and I had to miss some college sessions" (participant # 12 interview)
- "A few complaining that staff shortages mean that they can't come to classes or that they have to go early" (author's diary)

Aside from being released from work duties to attend the monthly classes, the pressure from work sometimes resulted in adding to the general levels of stress and overall workload that the participants were faced with.

As a result some of the participants simply adopted the utilitarianism strategy as outlined previously as this comment from participant # 9 (diary) clearly shows:

> No excuses haven't got around to it, usual story about being too busy, there were a few out sick so I done a lot of extra shifts but to be honest once I got out of the habit it became easier and I got the notes from ---- and ----.

Given that the participants were all adult learners it is far from surprising that they cited managing the work life balance as a source of stress. Another issue which impacted on the participants' ability to successfully engage with the VLE was when they had to cover for other staff who were absent from work due to holidays or sick leave. For example in replying to the question - why he had not logged onto WebCT in the previous seven days? Participant # 12 noted in his diary that he had been "covering for others" and consequently "was too tired". However, what should be noted is that given the nature of their work they started the course whilst working in an occupation that is stressful to begin with.

Course Content

The role that lecturers played is regarded largely as being a positive one with a great deal of support and understanding for the participants. Where there was a negative comment these generally referred to the first two years of the programme where it must be acknowledged that the level of lecturer expertise and experience of using a VLE was quite low. The principal complaint regarding course content was that the content was not updated frequently enough. This lack of new material began to erode the participant's enthusiasm for logging on: "It was a bit frustrating if there was nothing new, it would

have been a good idea to just put something up, even if was just a new e-mail or discussion or comment, something" (participant # 5 interview). This frustration was shared by a number of others: such as: "I think that I found it a little annoying when lecturers didn't have anything new up on their sites" (participant # 7 interview) and "logged on, nothing new since last week" (participant # 4 diary). The majority of diaries for the first two weeks of both semesters contained comments similar to these three sequential entries from participant #1's diaries from the month of September 2006: "WebCT not operational; No new course notes on WebCT and Psychology site still not up and running".

It should be noted that the lack of new material may have sometimes simply reflected difficulties encountered by the lecturing staff when attempting to upload course material. An example of these difficulties is highlighted with these excerpts from the author's diary in October and December 2006 respectively: "tried to put up some material but can't get it to work" and "WebCT was down for a while today, at least from home, I was working at home and tried to log-on but kept refusing me or if I got on it just crashed".

However, dissatisfaction was not confined to a lack of new material. In fact sometimes the annoyance was more concerned with the sheer volume of material on the VLE rather than the lack of it. One very pointed comment from participant # 6 highlights the problem of trying to handle large quantities of course material:

> Yeah I thought that there seemed to be no real understanding of the cost and hassle of printing off very large documents from home. It might be okay in college where you have the very quick laser printers but when you are trying to print off at home it takes ages and costs a fortune in ink.

As highlighted in the technical issues section, the problems with large volumes of course material were not just associated with printing costs but also the time it took to download large files when connected to the internet via dial-up rather than broadband.

Another issue regarding course content and activities was the perceived differences between the expectations and requirements for the different modules from the lecturers. Participant # 8 raised some very interesting points regarding the importance of adopting a relatively consistent approach between lecturer's expectations:

> ... if someone put up some new notes and a link with an activity like something from the inspectorate and we had to do something and then put it up on a discussion board ... But then again some asked for too much work and activities. I realise that inconsistency between lecturers can happen with any course full-time or part-time but when it's done the way this course was done it is really important to try to have some sort of standard approach at least in terms of levels of activities and presentation.

Activities/Usage Patterns

This theme incorporates issues that relate to the ways and means that the participants utilised and interacted with the various elements and functions available within the VLE. Beginning with a brief overview of activities this theme is divided into a number of sub-themes that examine communication, non-communication activities and the adoption by the participants of a more pragmatic utilitarian approach to activities.

Student Activity – An Overview

The figures from session one compared to session two show a number of marked differences, notably between the synchronous online tutorial participation. As previously mentioned there was a range of difficulties encountered facilitating participation in online tutorials, consequently the decision was made to discontinue live tutorials but to increase the use of the asynchronous discussion board. However, there are a number of other contextual factors that need to be borne in mind when examining the findings. Lower levels of participation in such activities as using web-links may simply reflect the lecturer's lack of familiarity with the technology and consequently marginal employment of the feature.

In addition, the lower figures also reflect the lower return rate of diaries in session two in comparison to session one. There were also a number of subject differences over the two semesters and a number of changes in teaching personnel thus the level of knowledge and expertise developed were not necessarily carried forward from one session to the next. Finally, the researcher was the lecturer responsible for two subjects- Sociology in semester one and Skills laboratory in semester two. Consequently the higher levels of student activity may to some degree reflect the level of expertise and commitment to using VLEs of the researcher.

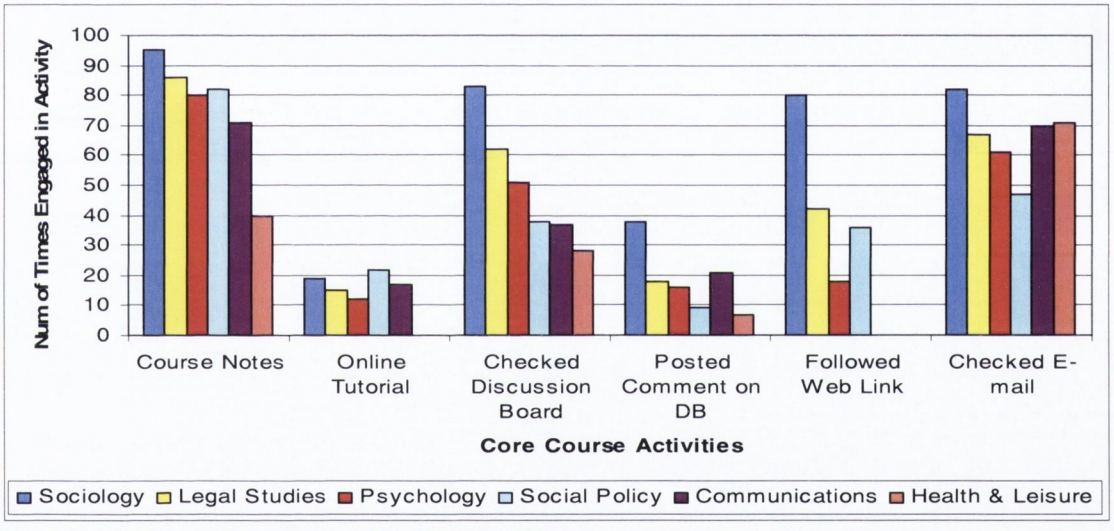

Figure 8- Session 1 Core Course Student Activities

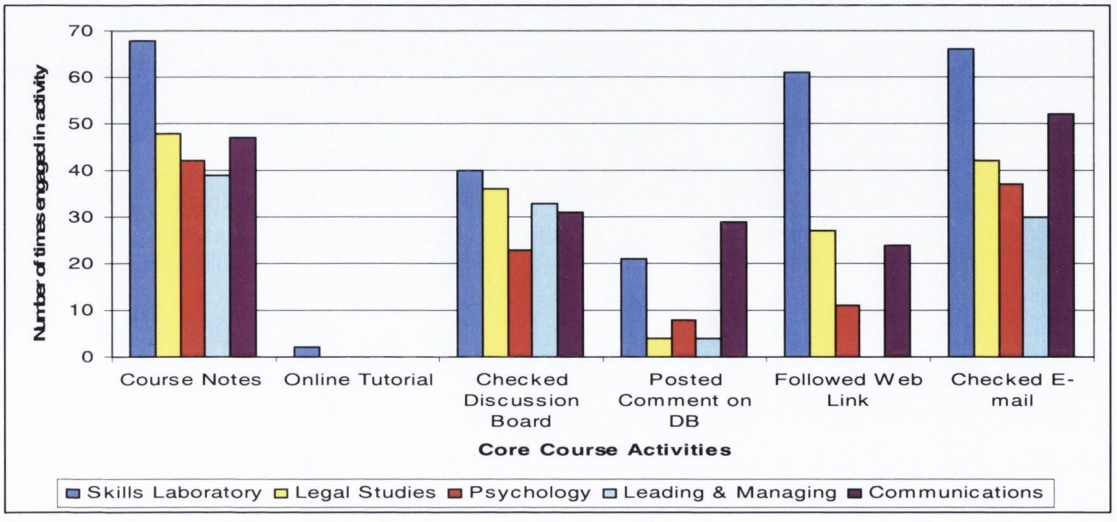

Figure 9 - Session 2 Core Course Student Activities

The drop-off in participation in synchronous tutorials is an important issue as one of the main advantages of a VLE is the fact that it is intended to provide an interactive learning environment and not just a remote repository for course notes and other similar material. However, as is demonstrated in technical issues section of the chapter this fall-off is due to a number of reasons such as firewall protection and connectivity speeds. The consistently high rates of e-mail usage are certainly consistent with the emergence of the strong activities' sub-theme of communication.

Communication

Communication may take place within the parameters of the VLE in the form of synchronous and asynchronous communication, e-mail and announcement boards. However, it may also occur in other formats which although not incorporated into VLE nonetheless support and add to the general learning experience. These may include personal contact through face-to-face contact, e-mail, SMS texting and phone (mobile and/or landline).

Direct comparison is not possible between the two sessions as the session 2 version of diary was modified slightly to take account of the issue of mentor availability. In session 1 an onsite mentor was available in some locations but this role was discontinued for session 2 therefore this option does not appear in session 2 diaries.

However, as can be seen from table twenty one below it did not represent a huge level of recorded activity. In percentage terms the level of recorded communication activity was 59% (n=109) for semester 1 and 54% (n=59) for semester 2 with intra-group communication clearly being the dominant relationship in both sessions.

	E-Mail	Text	Phone	In Person	Total
Tutor	12		2	3	17
Fellow Students	14	9	39	22	84
Mentor				8	8

Table 21 Semester 1 Communication with other stakeholders in programme

A general level of fatigue may explain to some degree the lower levels of diary completion with respect to this aspect of the diary or it may simply be that the participants were communicating with each other less, although evidence from other studies (Coxon et al. 1993; Wiseman et al. 2005) might suggest it is more likely to be the former rather than the latter.

	E-Mail	Text	Phone	In Person	Total
Tutor	9	2	4	4	19
Fellow Students	5	4	26	9	40

Table 22 Session 2 Communication with other stakeholders in programme

In addition to simply ticking a box to indicate activity the diarists were also provided with a brief section to include a comment if they so wished. Many chose not to do so however, approximately one quarter of the diarists wrote some comment. Although the overall level of recorded activity was lower in session 2, generally speaking the topics discussed remained substantively the same (a selection of comments is included in appendix M) which have been grouped thus:

- General information sharing – clarifying when and where next class sessions will be held
- Non-academic mutual help – organising sharing of driving or providing car transport for those without access to a car.
- Academic mutual help – for example sharing notes with others experiencing difficulties with downloading class material or helping with the research and advice necessary to complete assignments. This also incorporated the sharing of resources with the other students such as useful websites that a particular student had identified.
- Clarification and advice from tutor – this was generally sought in relation to assignment preparation and comments or complaints regarding the VLE notably difficulties being encountered with either logging on or downloading material.
- Generalised support from other students – this is characterised by simply having someone to talk to about the general difficulties and frustrations being experienced rather than necessarily a specific academic problem to be resolved.

Clearly any grouping of responses is somewhat fraught with subjectivity on the part of the researcher; however the opportunity afforded by subsequent interviews provided the opportunity to clarify such matters. For example, there were quite a number of responses that simply said a subject such as law, social policy, psychology or sociology. Upon subsequent interviewing it was suggested by participants that this referred to either downloading relevant course material or assignment preparation with regard to those subjects.

Communication Tools

The main communication devices generally available within VLEs are the synchronous and asynchronous discussion fora, announcement boards and email. Whilst the announcement boards were used as part of this programme they were used very rarely and thus form no part of this study.

Synchronous and Asynchronous Discussion Fora

From a non-technical aspect the synchronous discussions of the online live tutorials represented a great opportunity but ultimately a major challenge. The problems facing the lecturing team and the participants in the delivery of this aspect of the VLE were largely of a technical nature and are explored in the technical issues section of this chapter. However, briefly the situation was thus: in the first academic year the live tutorials were run on a monthly basis with approximately 4-8 of the participants taking part. However, in the second year the increased functionality of the newer version of WebCT meant that some of the participants were unable due to a variety of technical reasons to take part and the provision of these tutorials gradually faded away finally finishing at the beginning of the third year. Nonetheless for those participants who were involved they provided an interesting although sometimes frustrating learning environment as some of the following comments indicate:

- "I tried the online discussions twice but to be honest I didn't really get the hang of it, by the time I had thought of something to say they had moved on" (participant #3 interview)
- "As I just said I thought that it was marvellous when I was on holiday and I was able to take part in the Monday online tutorials" (participant #7 interview)
- "As well as that in the first year when we done the live online tutorials I tried to go online but half the time it was too slow so I got fed up… In the second year when ye changed the WebCT I just couldn't get the live online to work at all so I just stopped even before ye all stopped doing it" (participant #1 interview)
- "I live out in the country so I only have dial-up so when I hear about the online discussions I felt somewhat left out" (participant #12 interview)

The asynchronous discussion boards were used to a greater or lesser extent in each module depending upon the level that they were incorporated into the teaching strategy of that particular lecturer. However, it is clear from the diary data that the discussion boards were utilised in all modules with the diarists indicating that they checked in on them albeit with varying degrees of regularity. It was apparent that whilst many of the participants were quite happy to check in on the discussion boards they were less likely to actually take an active part although there were a variety of reasons given for this inactivity. Comments regarding this lack of participation cite lack of time and lack of confidence: "have viewed discussion boards, but finding it difficult to find time to participate" (participant #1 diary entry) and "I wouldn't know what to say and if you say something stupid everyone can see it up there on the webpage forever" (participant #6 interview). However, technical issues are also cited as a reason for non participation: "still unable to access internet at home so only limited use while at work. Have not been able to post responses to lecturer's questions on the discussion board yet!" (Participant #5 diary entry).

This is not to imply that the asynchronous boards were not without their uses. Due to the difficulties that were experienced with the synchronous tutorials which led to their eventual phasing out, the asynchronous discussion boards took on a great importance as evidenced from the author's diary:

> The online tutorial is really a waste at this stage, only ----- and ----- taking part, I know that more have broadband but at this stage some of them obviously got out of the habit or can't get online if they are at work. Just revert to asynchronous discussions for the rest of the time I think, will bring it up at board.

E-mail

The email facility presented far fewer challenges as the participants rarely encountered the technical problems associated with the synchronous tutorials, nor the fear of presenting in public associated with the discussion boards. As can be seen from figures one and two the e-mail was the second most (after obtaining notes) used facility. In the context of this group's working patterns and in particular when they worked night shifts, the e-mail was especially useful as remarked by this participant: "I suppose being on nights I had to use the emails a bit more, texting wasn't really an option because I would be in bed when the others were awake and so on" (participant # 2 interview).

Whilst this facility was used to contact other classmates it was principally used to communicate with lecturers: "I have found it good to be able to email the lecturers and the others, if we didn't have that the course would be just the monthly classes which wouldn't be the same" (participant # 6 interview). Of course this communication was two-way with lecturers using it as a quick and straightforward means of communicating with individuals and/or the class as a whole:

> sent an email to inform them that any formative exercises would be used as a basis for the summer exams, thought that might get them to engage a bit more' and 'checked e-mails two queries regarding assignments ... pushed for time so just acknowledged that I had a quick read' (author's diary).

However, this form of communication was not always without its own problems; amongst the problems reported was a lack of quick response from the lecturers such as this comment from one of the participants: "the not emailing back with a reply quickly was the main issue with some of the lecturers ... I didn't expect a reply straight away but to be fair I think that a reply within 48 hours is not too much to expect'" (participant #7 interview). Dissatisfaction with some aspects of the lecturers' performances whilst not a

major problem was an issue identified by the participants and is subsequently examined in greater detail under the theme of non-technical issues.

Phones – Landline & Mobile

Used to pass on messages, request help or clarification and to provide advice and support for others, the use of mobile phones as a support and adjunct to the course in general and the VLE in particular was the principal tool of communication between the participants. As was clearly seen from tables seventeen and eighteen the most commonly used lines of communication were between classmates, with the phone being the preferred method of communication. Although ascertaining the type of phone connection (landline or mobile) was not a question in the diaries, subsequent interviewing indicated that mobile phones were the preferred method of phone contact rather than landline.

Whilst the internet certainly can be accessed using a range of devices such as palmtops, PDAs and mobile phones, the primary device used by this group to connect to the internet were computers both desktops and/or laptops. Nonetheless, in terms of a communication device the mobile phone presented a number of advantages in comparison to computers chief amongst these is ready accessibility. This advantage was strongly noted by participant # 6 where she stated that:

> I used to use my mobile either phoning or texting with the others a lot, probably cause it was easier and quicker than have to go to the computer. So for me the main technology if you want to put it that way was the mobile phone and not the computer.

This level of accessibility did not necessarily confine itself to the technology; it also meant that the lecturing staff could also be more readily accessible if they chose to be: "I

had the mobile numbers of three of the lecturers including yourself which made it handy if I needed to contact ye" (participant # 4 interview).

Communication Summary

It is very clear from the data that one of the primary activities undertaken with and around the VLE is that of communicating; whether it is to ask a question, pass on a message, request a favour or simply just to help create and maintain the air of collegiality even at a distance. In the discussion chapter this important topic will be explored in greater detail with a view to examining the role it can, and should be utilised in creating a supportive learning environment for adult learners.

Non-Communication Activities

As was noted in chapter two, VLEs are frequently used in a manner not necessarily envisaged by the course designers. Consequently the 'other activities' section of the diaries allowed respondents to indicate if they engaged in supplementary activates that supported either individual modules and/or the course as a whole. For example, participants may have been researching material for their social policy essay through the internet but not via a link provided through the VLE nonetheless the activity is being used in conjunction with and in support of the VLE.

In session one, of the one hundred and fifty eight responses, using the internet to look up material to help with writing an essay accounted for 56% (N=88) of the responses. A further 28% (n=44) indicated that they used the Internet to help clarify or explain a specific topic relating to one or more modules. A further 7% (n=11) indicated that they used the internet to look up material in general support of gaining a better understanding

of the module but with no specific purpose in mind. The remaining 15 responses proved unclassifiable as they simply put an X or similar indistinguishable mark.

A similar pattern of other activity usage was also apparent in session two, although understandably lower in terms of general usage. Locating material to be used for the preparation of assignments was again the most dominant activity with 44% (n=49) of the respondents reporting such patterns of use. Looking for specific information accounted for 29% (n=33) of the responses whilst looking for general non specific information accounted for a further 8% (n=9). The number of unclassified responses rose to 19% (n=21) which may be indicative of the general fatigue in diary completion.

Library Usage

Although not an area of prime research in the initial study's focus the use of the college's online library facility was a theme that emerged during the data collection at the end of semester one (the course's second year). The college's online library facility was available through a link on WebCT as well as a general link on the college's homepage. Through the online facility the participants can access their library records, renew books, obtain journal articles and access databases such as ERIC and CINAHL. Since 2005 the library has also utilised the online book repository know as Ebrary. For all students but particularly remote students this facility presents a way of accessing thousands of books that would otherwise be difficult to obtain. Nine of the twelve participants indicted that they had used the library facility on at least one occasion in the first semester whilst seven of the eight participants in semester two used the library on at least one occasion.

The electronic library facility Ebrary was a facility that was relatively new to both the

students and course lecturers; consequently it was only used in a very marginal capacity if incorporated at all. Two of the lecturing team incorporated into their teaching in semester one, while three of the five subject lecturers used the facility in semester two (year three of the OEL course).

As with many aspects of e-learning the online library facility had a somewhat mixed bag of responses although it must be noted that generally the comments were positive:

- "One thing I really got into last year was using the online library facility. I would renew the books online but I also started to look up books in the catalogue and then email the library and get yourself or ---- to bring the book the next session. The college says a lot about mature students but it needs to make things easier ... and it's not always the big things, for example if you miss a renewal date you can't renew the books online" (participant #12 interview)
- "Easily accessed WebCT. Renewed library books online brilliant" (participant #5 diary)
- "The one thing alright is the online library" (participant #6 diary)
- "Even if you didn't put up web links I would use the internet a lot anyway, although I did use the college's online library a good bit more this year, it's a great resource like I use it for all sorts of things like if we're having a case meeting about one of the children I was able to get some articles" (participant # 8 interview)

Given that the Ebrary facilities were never seriously incorporated or promoted in the teaching and learning strategy of the OEL course the level to which the participants used it at all certainly encourages further consideration, a point which is discussed in chapter five.

Adaptation

From an educational perspective, this theme is arguably the most important in attempting to understand how this particular group of adult learners utilised the VLE. The data in this theme highlights the strategies and approaches that the OEL group adopted in order undertake and successfully complete the degree. A number of the participant's comments highlight this very important theme – adaptation. The adaptive strategy can best be characterised in the two sub-themes of utilitarianism and support. Having a support

network is a great advantage for any student; arguably the need for such support is greater for those with extra demands or limitations placed upon them such as the case with this group of adult learners. In effect the creation of support networks

Utilitarianism

It is important to bear in mind that the range of activities that participants undertook may have been affected by technical issues such as computer specification and connectivity to high-speed internet connection as well as issues such as participant fatigue and time poverty. Remembering that the participants on this programme were all adult learners each with competing roles claiming their time, they had to balance the course requirements with work and general life demands. Some of the responses indicated that when faced with these competing demands the participants, especially towards the end of the course adopted a path of least resistance:

- "If we could get away without doing all the extras I think that we started to do that, I certainly did especially if we had a few assignments due" (participant #1 interview)
- "But the online, sometimes I was just too tired or too busy; I know what you are going to say, I work part-time but I suppose I took the easy way out at times. I often just looked up the material just before a teaching block to see what I had missed" (participant #3 interview)
- "... it wasn't just the WebCT I suppose we all got well I got tired but after three years I suppose everyone gets tired of it especially when we all had so much going on at home and in work and what have you" (participant # 11)
- "It's not that I got fed up with any one thing or anything. I did what I had to do, like if I needed to get notes or something I went online but if one of the others had printed off something I photocopied them" (participant #12 interview)

However, it would be misleading to only infer that the participants were simply adopting a minimalist approach to their learning as a reaction to competing demands on their time. This quote from one of the participants would seem to indicate the adoption of a strategy based on adapting to the individual lecturers requirements: "I know that I said that I really only used the WebCT for notes and emails but if more of the course relied on other activities then I would have used it much more" (participant #12 interview).

It is clear from the previous section that a number of the participants certainly felt a growing sense of weariness with the OEL course by the end of the three years. However, what became increasingly apparent was the development of participant self-awareness of their burgeoning competence and confidence in using the VLE.

- "I'm a lot happier with my own skills this year, just more confident really but still not as confident to put stuff up on the discussion boards. I mean I know how to do it and all just about putting it up on the board, it's like speaking up in class and you know that I don't do that very often either" (participant # 1)
- "I got more used to studying in general you know writing essays, researching all that and got better at using the internet in general not just the WebCT" (participant # 5)
- "I have gotten used to computers as long as everything goes okay but when I have to figure out something it can throw me" (participant # 7)
- "I got more used to just checking things and not wasting a lot of time, you know just emails and notes and some of the discussion boards" (participant # 2)

It is clear from the comments that while there was certainly an increased level of confidence with the technical mastery of the VLE system the confidence to engage in the discussion fora was still less pronounced for this group. The earlier communications section touched upon the manner in which the various VLE communication fora were utilised; however the use of mobile phone technology by the participants as an external communications tool can be viewed as a very important development. In their use of the mobile phone it could be argued that the OEL group were circumnavigating the difficulties that they were faced with.

The issue of communication as an adaptive strategy emerged strongly from the diary and interview data. A number of the participants stressed the importance that the availability and use of mobile phone communication played in achieving a successful outcome to their studies. Two such examples of comments referring to the provision or receiving of support are: "I talk regularly to another student who I work with and I phone and text others" (participant #8 diary) and "I suppose you could say help from some of the others, like we ring or tell each other news" (participant #1 interview). Other participants,

commenting on the potential for information sharing stated that: "If I needed anything or I needed to get a message or email that one of the lecturers had sent or something one of the lads would ring me or send me a text or say it to me if they met me" (participant #11 interview) and "if there was a message ---- or ----- would ring me or send me a text so I wasn't out of the loop or anything" (participant #12 interview).

Another of the participants who acted as a message carrier remarked that he would "ring or text around if anyone was missing or there was any problem with someone or something had changed like last year when we had the trouble with the different venues for the classes" (participant #10 interview). Aside from passing on messages and information and providing support participants also used to phone or text one another to simply ask for help in obtaining course material: "sometimes I rang one of the others and got them to print off notes or something" (participant #5 interview). Time and again this level of mutual help and support were evident as a means of overcoming some of the issues (both technical and non-technical) detailed earlier in this chapter.

Support

The level of friendship and mutual help garnered from participation in the course is evident with this end of course interview with participant #1: "It's been such a big part of my life for three years now it will take a bit of getting used to, I've made new friends and just feel a lot more confident in myself". Aside from family members, fellow classmates also provided a large degree of support and help; support that was both practical and motivational. For example, support of both a motivational and practical nature was highly evident as this quote from an interview typifies:

> Sometimes I rang one of the others and got them to print off notes. ---- and the others have been marvellous. The help, from the others I mean but really in particular ----, she has been

> brilliant. I said it before that without her I would have left the course long ago (participant # 9 interview)

Support and practical help worked both ways with some of the participants' at times seeking help whilst other times they were the providers of help:

> ...if I needed to get notes or something I went online but if one of the others had printed off something I got them and just photocopied them. If there was a message ---- or ----- would ring me or send me a text so I wasn't out of the loop or anything (participant # 12 interview).

For some of the group this level of help and support was not just because there were a large number of altruists in the class. Providing or seeking help particularly in relation to the downloading of class notes or other such material was a direct response to the connectivity issues highlighted earlier in this chapter. In the context of helping others due to a lack of broadband, participant # 6's comments are quite typical of this willingness of those with broadband to help those who relied on dial-up:

> I didn't seem to have many problems at least not compared to some of the others anyway. Actually I didn't mind helping some of the others out. ...Not that I minded helping out, it was easier for me than some of the others.

Due to the work related nature of the cohort, a number of classmates were also colleagues. However, support and practical help also came from a number of other colleagues who were keen to help as demonstrated by this comment: "the lads in work, not the ones doing the course just the others have also been a great help and always asking if they can help or giving me a loan of books and stuff" (participant # 9 interview). Another example of support from a colleague was highlighted in the following diary entry: "had meeting with ---- and my manager about my case study for psychology" (participant # 12). It should however be acknowledged that experiences of support were not always positive as this comment from participant #11's diary entry shows:

> I am getting pissed off with WebCT and e-mails as I don't seem to be able to download most of the notes and can't get to send essay off. I feel I have fallen behind due to this. Feel like giving it all up. On top of that I am getting no support from work; I have left an envelope out in work so people could leave notes or books that would help me out. I left it there for a full month and got nothing.

Mutual help and support played an important role in the experiences of the OEL course for the majority of the participants; for some it was the difference between dropping out and remaining on the course and as such represented an important coping and adaptation strategy.

Another important resource and one that could also be considered to be an adaptive strategy that the OEL participants utilised in an effort to use the VLE was their families. Notwithstanding the previous references to family members sometimes being a source of distraction, the family emerged as an important source of support to the participants both as a source of inspirational and motivational support and as a source of practical support. As outlined previously there was a wide degree of competence and familiarity with computer technology and software hence any help that could be provided was greatly appreciated as is highlighted in this series of quotes:

- "I would have been lost at the start without my daughter, although at times I'm sure I drove her mad. I mean adding attachments and using the emails was what I found difficult" (participant # 3)
- "Ya, I had to get my wife to type out the essays" (participant # 5)
- "I always have ------ [participant's wife] when the need arises (participant # 10)

Apart from getting help using the VLE, the importance of getting help with other tasks was also evident from this quote from participant #9:

> support from my family has been really important as well, they help with the cooking and cleaning …they are used to getting on with things but this has been an extra job for them all but particularly ---- my husband.

It is clear from this section that the OEL participants, (each to a greater or lesser extent) both as individuals and as a community of learners became increasingly aware of the

ways that they could negotiate and maximise (or minimise) their use of the VLE.

Subsequent Reflections

As part of the final interviews at the end of the course the participants were invited to comment on their thoughts and feelings regarding their participation in the course.

The interviews were held prior to the final exams so there was some reticence to commit wholeheartedly to reflecting on something that they felt was not quite over. Nonetheless a number of the themes highlighted in the antecedents/background section are again evident notably career advancement and personal fulfilment as shown in this selection of quotes:

- "I used to feel a bit left out at team meetings especially with some of the others who are qualified now I feel a lot more confident about speaking up which surprised me because I didn't think that it mattered that much to me but it must have" (participant # 11 interview)
- "I don't know what I will do after the course but I will certainly miss it. I won't be too long for retiring and this course gave me a taste for doing something more by distance or online or something like that so you never know" (participant # 7)
- "Apart from the computers it gave me a great break from the nights and with the degree hopefully I'll be able to change jobs in the future or at least I will have the chance to change if I want" (participant # 2)

In addition though to feelings of personal satisfaction and/or career advancement there were a number of comments about using the VLE:

- "I think that if you are going to do a more online course all the problems need to be sorted out right from the start otherwise people just start cutting more and more corners and when they don't go onto the net they blame the system, they have a handy convenient excuse" (participant # 12)
- "Look I know that it didn't always run smooth and things could have been better but the main thing is that we got through the course and without it as you said if we only had the classes the course wouldn't have stood so in that way it was important" (participant # 7).

It was evident that there was a general sense of relief and weariness from the remaining eight research participants. However, there was also a tangible sense of pride and satisfaction, the satisfaction that comes from negotiating many hurdles over a period of time and feeling stronger and better equipped for the experience.

In hindsight, it would have been easy to overestimate the importance of technical issues such as connectivity and hardware access due to the regularity that they were cited by the participants. Of course there is no doubt that slow internet access speeds did of course impact on the OEL participant's experience of WebCT and to some degree coloured their perception of the whole experience. However, what also became apparent was that members of the group had (many without realising it) had developed adaptive strategies that included using the VLE in a utilitarian and most functional manner (when necessary) and the mobilisation of support, sometimes from family members but most importantly from other class members.

Chapter Summary

The findings presented in this chapter merely represent a proportion of the data generated. Nonetheless, the use of thematic presentation and organisation provided a vehicle through which raw data was converted into a series of findings thus aiding the reader to navigate their way through what is a rather large raw data set. While it would appear that the main issue or problem was the lack of a reliable high-speed internet connection by which to access the VLE; what developed in terms of primary interest was the way that the participants negotiated and adapted to the situation that presented itself. Thus, the issues of support and communication and adaptive activities consequently became one of the important elements in the story that was the OEL course. What needs to be borne in mind at every step of this story is that these participants were adult learners accessing education through a blended learning programme remote from their college. Full-time students who attend college in person will necessarily utilise a VLE in a different manner than those who inherently rely on the VLE as an integral component of their course. However, any findings whilst informative only constitute one half of the research process. The other half of the process is to discuss and contextualise the findings

with a view to drawing out and understanding the implications of the findings which is undertaken in chapter five.

Chapter 5 – Discussion

Introduction

The genesis, development and delivery of the OEL programme encapsulated many of the issues that pertain to and influence debates surrounding both electronic and adult learning. As such, the study offered a window if you will into the participant's perspective of how they used, navigated and negotiated the VLE as part of a blended learning approach set against the backdrop of their lives as adult learners. The participants were adult learners both male and female ranging in age from early 20s to early 60s, all working in paid employment outside the home living in geographically diverse areas ranging from remote rural areas, villages suburban areas, small and medium sized towns to a large city. With respect to age, prior educational & computer experience, gender and geographical spread the class encapsulated a wide[55] range of adult learner characteristics in Ireland. Thus, the OEL group provided a rich source of data from which to examine their experiences of using a VLE as part of a prolonged academic programme which was presented in chapter four. Whilst analysis and presentation of data is of course at the heart of any research study these findings need to be contextualised and discussed if the maximum benefit is to be derived from a study.

In the previous chapter the themes were presented separately whilst at the same time acknowledging that there was a considerable degree of overlap. Bryman (2004) advises that in order to guide the discussion and maintain cohesion and focus, the research process should at all times be guided by the primary research question. It is therefore important to revisit the study's question providing as it does the framework within which

[55] However, it must be acknowledged that the class did not contain a member of an ethnic minority (foreign or domestic) or a person with a disability

the emergent themes from chapter four are discussed: *In the context of a blended learning programme what were the experiences of adult learners using a VLE?* As indicated in chapter one, the primary question subsumed a number of secondary questions:

1. What beliefs & intentions do adult e-learners display?
2. What learning strategies do adult e-learners display and/or utilise? – How do they negotiate the course requirements? – Do the learners utilise and engage with the course in the way that was envisaged by course designers?
3. Aside from learning strategies, what coping/management strategies do adult e-learners display and/or utilise?
4. What are the efficacious characteristics of an adult learning programme using a VLE?

This chapter answers and discusses the questions in three sections. The first section focuses on the learning activities that the group engaged in with particular reference to the temporal aspects of their use of the VLE, communication and the degree to which they accepted and embraced the VLE. The second section explores the important theme that emerged in terms of adaptation and the way that the OEL group transformed their engagement with the VLE and the course. The final section discusses how management, course designers, policy makers, education technologists, and educators might re-design or re-focus certain elements of VLEs if they were to incorporate some of the issues raised in this study.

Learning & Coping Activities

The earlier discussion regarding the debate within education vis-a-vis the role and purpose of education came was clearly articulated in this study. If the aim of

transformative learning is effect a change within the learner regarding the development of a new sense of self and control over one's learning it could be argued that this was evident in this cohort. The theme of utilitarianism is particularly pertinent focussing as it does on examining the way that some of the participants increasingly adopted a 'path of least resistance' to the continued demands on their time. Combined with the utilitarian approach adopted there was also a reported general feeling of weariness or fatigue which resulted in a drop in online activity. The primary reasons given for this decline were:

1. General weariness from juggling competing demands on time from family, studies and work
2. Developing a greater level of self-belief and an understanding of what workload is necessary in order to successfully pass each stage
3. Feeling that at times there was not enough new content to make it worthwhile to log onto the VLE.

It would be easy to characterise these feelings as being negative but in many ways the groups responses to what was a difficult undertaking can be seen in very pragmatic and (particularly as busy adults) entirely understandable response.

In chapter four the 'activities' theme sought to identify how the participants actually used the VLE, what activities did they engage in and why? Both the designers of the VLE platforms and the course designers may certainly envisage ways and means that the VLE will or can be utilised.

As noted previously, adult learners frequently have a number of competing demands on their time. Thus, as in the case of the OEL group it is not surprising that when they perceived that there was little or no benefit to greater utilisation of the VLE that they adopted a utilitarian approach regardless of the lecturer's intentions. VLEs certainly

present lecturers with an opportunity to create a dynamic and interactive online learning environment. However, where students perceived that some of the learning activities were not critical in order to pass a module or complete an assignment, some of them simply chose to use the VLE as little more than a remote content repository as this quote from participant # 1 highlighted: "If we could get away without doing all the extras I think that we started to do that, I certainly did especially if we had a few assignments due". Paul Jackson (2003) recognises only too well the challenges that need to be met if students are to be convinced of the benefits of web supported learning. Amongst the challenges he argues, is the need for lecturers to integrate activities in a manner that engaging in activities such as synchronous and asynchronous discussions is seen as having a direct benefit to the fulfilment of their overall course and assessment requirements thus "extending usage beyond printing lecture notes" (Jackson, 2003, p. 100). The alternative is aptly summarised by the quote from participant #12: "if more of the course relied on other activities then I would have used it much more".

Understanding the Adult Learner – Temporal issues

McVay Lynch (2002) highlights the importance of effective use of time both for the education provider and the student alike. Understanding the temporal patterns of VLE usage by e-learners is very useful for those dealing with and servicing the needs of adult learners; developing this understanding assumes an even higher level of importance. Armed with such knowledge, education providers can design and deliver an environment that, as much as possible, compliments rather than ameliorates against the learner's world. The reality for many distance online students is that they frequently work alone, often at night and/or weekends. Therefore it can be difficult for such students studying under these "conditions to resolve potentially frustrating problems that can typically be

discussed and resolved more readily in a face-to-face class meeting" (Hara and Kling, 2000, p. 564). Chapter four referred to the demands that were placed on the learners in terms of juggling their time; this time management issue was compounded with the fact that the OEL participants worked shift patterns. Distance learners can indeed benefit from the 'anywhere anytime' facility that e-learning offers. However, this 'anywhere anytime' facility is not always easily afforded particularly when there may be different expectations of effort, interaction and response between lecturers and students. This can be further complicated when the different groups work different time-frame such as the OEL group who worked different shift patterns involving late shifts, early shifts and night shifts while the lecturers worked regular hours from approximately 9am – 5pm.

Mason and Rennie (2004), along with many others posit that e-learning offers a number of advantages such as flexibility in terms of temporal and spatial consideration, access to a wide range of resources and the facilitation of engagement with a community of learners and tutors. They go on to argue that these advantages should be available to rural and urban dwellers alike. However, they also point out that this apparent equality between urban and rural dwellers is undermined if:

> some students who when logging on and accessing the course over low-speed, unreliable networks, browsing WebPages, and accessing multimedia materials, take significantly longer and are subject to many technical hitches (Mason and Rennie, 2004, p. 2)

The situation that Mason and Rennie highlight was certainly consistent with the experiences of the OEL participants; there was a significant difference in the learning experiences of the two groups of participants i.e. those who connected to the internet using dial-up and those who connected using broadband.

Another temporal aspect regarding VLE usage was evident in Hara and Kling's (2000) study of the factors that cause stress in web based distance courses in which they highlighted a number of issues one of which was the time lag between a student's query and the time it took to reasonably expect an answer from the lecturer. As participant # 7 commented in chapter four: I didn't expect a reply straight away but to be fair I think that a reply within 48 hours is not too much to expect'. On the face of it the comment about forty-eight hours would seem to be a reasonable timeframe, forty eight hours is of course quite a long time, especially when one is waiting for a reply that may be necessary before commencing an assignment. However, when the two protagonists worked different time patterns (as was the case with the OEL participants and the lecturers) this time lag may be more easily explained or at least understood. Many lecturers in higher education now spend a considerable amount of their time creating and responding to e-mails, time which is rarely factored into their working week. This particular facet of lecturer workload is to be found in Hara and Kling's (2000, p.566) study where they reported that:

> The instructor also commented that at the beginning of the semester she was spending all day reading and responding to e-mail messages. Later in the semester, she was able to reduce her workload, but still spent a large amount of time on this course.

Even where a lecturer is teaching standard face-to-face classes, students often use e-mail to contact staff. When one combines student driven message with the plethora of e-mails that colleges generate anyway it can be easily appreciated that this type of work is taking on a bigger role year on year. The reality for many lecturers who are now attempting to use VLEs in some form or another is that they are often still teaching and supporting traditional students with face-to-face lectures; in this case monitoring VLE communication on a regular basis can prove to be an extra burden (Kear, 2007). The response of John Lee of Dundee University (cited in Minshull 2004, p. 12) demonstrates

the need for lecturers to develop an understanding and appreciation of the needs of distance adult e-learners:

> Teaching online requires much more of a mindset change than just being able to do it - if the staff aren't thinking about how they will structure their teaching to match the environment, then they will require a lot of work from me later on to advance their use to be something more effective.

Response rates, scheduling and tasking issues take on a different aspect when dealing with students who are trying to manage their lives against a backdrop of different temporal considerations, care responsibilities, employment and the other elements that characterise the lives of adult learners. In most cases the students may simply have to contend with these difficulties as a consequence of undertaking the course. However, by acknowledging these difficulties lecturers can by their actions develop strategies and teaks that do not add any unnecessary burden to the students.

The OEL participants could access the course content and participate in asynchronous communication at a time of their choosing. However, the creation of a synchronous learning community was hampered by the shift patterns that the OEL participants worked. Out of the eighteen people on the OEL course, at any time approximately four/five of them would be in work, four/five would have finished work; four/five would be waiting to go into work with the remainder on a day off. This may not have been such an issue if the work computers were available for online tutorials which would have allowed at least another four or five to participate in live tutorials. Taken in combination with the difficulty that some participants had with regard to access to high-speed internet connectivity, for a course that incorporated synchronous group tutorials this clearly presented a problem. Macdonald's (2006) concerns on the implementation of blended learning were well borne out in this study – synchronous communication for the group was indeed problematic if not downright impossible. Devising learning activities that

relied on group synchronous communication without fully acknowledging the problems that would be faced by the participants working different shift patterns was an issue that should have been greater attention. Certainly the difficulties presented to the course designers and coordinators by the inability of the HSE units to facilitate the live tutorials contributed to the situation. Nonetheless, greater use of the asynchronous communication tools enabled the maintenance of a group learning dynamic albeit without the sense of immediacy that synchronous communication would have afforded.

Communication

Powell and Minshull (2004) highlighted a number of benefits that VLEs offer to the learner, these benefits include providing a way for learners to communicate (both formally and socially) and widening access to education from "home or work - the "any time, any place" principle' (p. 9). The benefit of the 'any time, any place' aspect was particularly evident to this group, which is not surprising given that the majority of them worked shift patterns that encapsulated early day, late day and night shifts spread over a rolling seven day period.

Descanctis et al.'s (2003) three forms of interaction that can be facilitated using e-learning were evident to a greater or lesser degree with the group. The three levels require increasing levels of cooperation and sophistication moving as they do from Declarative and Procedural information exchange of information to Transactive sharing information about the capabilities and boundaries of knowledge to sense-making is the process of developing shared mental models (Descanctis et al., 2003, pp. 567-8). It would appear from this study that the most common form of information exchange was the

Declarative and Procedural exchange of information often regarding such topics as organising car pooling and informing others that there was new information:

> I used to ring or text around if anyone was missing or there was any problem with someone or something had changed like last year when we had the trouble with the different venues for the classes (participant # 10 interview)

In addition to the sharing of information and providing clarification as discussed above the most common cause for communication was to either seek or provide help. It would certainly appear that even if the participants were using the higher end communication tools (synchronous and asynchronous discussion fora) sparingly they certainly utilised the information transaction capacity of the VLE. In this sense it could be argued that undertaking the course was with respect to the development of the group was a transformative action. However, at a more prosaic level the communication element operated at quite a functional level with straightforward transactions of knowledge, help and advice.

Computer Access and Communication

In order to understand the experiences that the learners underwent one needs to be aware of the context and antecedents, consequently it is important to discuss the difficulties faced by the OEL participants in accessing computers and the concomitant communication difficulties encountered. Bates (2005) asks that organisations, prior to utilising new technologies consider what organisational changes including the removal of barriers or impediments need to be implemented. However, the problem with addressing these needs is that the motivation and capacity to tackle these issues may vary from institution to institution. The trouble with inconsistent approaches may be compounded when as in the case of the OEL programme, two large organisations fail to fully understand these issues and thus fail to ever fully address the issues through a process of

planning and preparation. The issues of work based computer access and synchronous communication failure due to firewall problems is a very good case in point of this failure to plan. These issues presented a very good opportunity to explore how factors such as technical, non-technical and contextual can combine to present the adult learner with a problem that can be difficult to negotiate, not of their making and outside of their domain of influence or control.

Where work based computers were made available to the participants their use proved to be extremely limited due to three main reasons. The first was that some of the units initially did not have internet access of any kind. However, within approximately three months of course commencement all the units where the participants were employed had internet access. Secondly, despite the course being driven and funded by the HSE, the different elements (regional management, computer services, area management and line management) within the organisation did not seem to be agreeing with each other with regard to drawing up an agreed protocol for participants to use the unit computers. Issues such as the length of time participants were allowed to use the computer, whether participants could be temporarily released from duty to take part in synchronous discussions clouded the situation and seemed to vary from unit to unit as can be seen from the comments in chapter four with some participants allowed to use work computers whilst others were not allowed. The third issue was that of firewall protection which did not allow participants to access some or all of the functions of the VLE, notably the synchronous 'chat rooms' designed to be part of the teaching strategy in the form of live online tutorials. This issue was also noted in Marriott (2005) where he noted that:

> All NHS organizations will have firewalls in place to safeguard their networks. Unfortunately, depending on the way in which these are configured, they can also prevent

> students from accessing perfectly legitimate resources housed on the Web by their parent institution (Marriott, 2005, p. 263).

It was only when the participants tried to open the synchronous communication chat rooms using HSE computers that the problem of access arose; the HSE blocked access to the college site and therefore the students in these remote locations were unable to see the chat rooms. The HSE were notified of the situation but it was never successfully resolved; thus the live online tutorials that were intended to be an integral component of the programme were gradually phased out and eventually discontinued.

Either as a result of access difficulties and/or due to the inventive and adaptable nature of adult learners Creanor et al. (2006c, p. 10) enjoins the e-learning course designer to consider that 'there may be many informal as well as formal or VLE based communication channels'. As previously noted in chapter four there were a number of communication tools not all of which were elements of the VLE yet became an integral component of the overall remote learning experience. Notwithstanding the synchronous and asynchronous forums and email facility, the most commonly used communication device by the participants was the telephone, most notably the mobile telephone.

Synchronous & Asynchronous Communication

The problems with connectivity, software and hardware certainly added to levels of frustration and difficulties experienced; but it also provided some of the participants a justification for not logging on to the synchronous discussions. Using Salmon's (2000, p. 112) analogy of '*swimmers, wavers and drowners'* regarding the different it is possible to discern three distinct groups in terms of the analysis and discussion of participation in synchronous and to a lesser extent asynchronous CMC forums. Firstly, there were approximately four to five participants in the '*swimmers*' group; people who were active

and committed participants in the synchronous discussions who had confidence to as Salmon (2000, p. 112) describes it – '*dive in*'. The participants in this group would be the students who saw distinct advantages in CMC participation and would regularly start and maintain discussion threads on the asynchronous boards such as participant # 7: 'I thought that it was marvellous when I was on holiday in Spain and I was able to take part in the Monday online tutorials'. The second group of approximately four participants could be described (again using Salmon's typology) as 'wavers'. This group did need a lot of help and encouragement to even try to participate in the online tutorials although they were somewhat more likely to participate albeit in a limited manner to participate in the asynchronous boards. The remaining participants were; again using Salmon's (2000, p. 113) typology the 'drowners' of the course; Salmon characterises this group as participants who see CMC participation as time-consuming and irrelevant. The following quote from participant # 12 typifies this sentiment very well:

> I never went into the live tutorials, mainly because I always seemed to be at work when they were on but I also know that they are fine if you can get onto them but it's not the end of the world if you don't.

Similar to the findings of this study, Morón-García's (2002, p. 1954) study found that:

> ... the discussion forums were used with varying degrees of success, but there was some resistance from students and lecturers were unsure how to make best use of it; 'chat' was only used by one lecturer.

The implications of this as highlighted in the 'adaptation' section of chapter four is that students may simply take the path of least resistance do what is required to maintain a minimum level of course activity and little more. Morón-García's (2002) went on to argue that teachers and course designers using WebCT need to take account of the situation where if students are required to undertake additional work that is perceived (by them) to have little direct benefit they may not take part in these activities regardless of the course designer's aims and teaching methodologies. This problem can be further

exacerbated as more and more of the group increasingly see CMC participation as superfluous thus contributing to the loss of the critical mass necessary to encourage and maintain group dynamics such as has been previously noted by Jackson (2003:96): 'critical mass problems in particular affected the use of the discussion functions within WebCT'. However, it needs to be acknowledged that this attitude did not necessarily reflect a simple unwillingness to engage with synchronous communication. As highlighted in chapter four, technical issues also impacted upon the participants' ability to utilise CMC notably the issues of connectivity and software requirements.

Phone Use

In both the semesters the phone was the principal communication tool when participants wanted to contact other members of the class. As noted in chapter four mobile phones were the type of phone generally used, either to make a phone call or to send an SMS text. Of the twelve original participants 11 (92%) possessed and used a mobile phone in some form or other in support of the course. This very high rate of mobile phone usage is consistent with the LEX (Creanor et al., 2006, p.11) study were they noted that 'while the majority (71%) had access to a computer from home ... an even greater number (85%) made frequent use of a mobile'. Given that the national levels of mobile phone ownership[56] over the period of the study (September 2006 – May 2008) rose from 111% to 115% (ComReg, 2008) it is not surprising that intra-class communication was dominated by mobile phone usage.

[56]'Mobile penetration is recognised as the standard metric internationally to describe the adoption of mobile services, and is calculated based on the number of active SIM cards per 100 of the population' (ComReg 2008: 42).

Participant # 6's comments regarding the benefits of mobile phone use that 'it was easier and quicker than have to go to the computer' echoes the comments of participants from the JISC/LXP (Conole et al., 2006, p. 58) report: 'mobile phone messages are generally picked up quicker than emails, so better for urgent messages'. There is little doubt that mobile phones presented a quick and accessible form of intra-class communication however as participant # 7 commented:

> ...would text or ring us if there was any news. I don't think it was always a good idea. Don't get me wrong he is a lovely man and does an awful lot for the class but it just meant that some of them got a bit lazy I think.

This sentiment about not needing to log onto the WebCT because others would communicate and provide course material was noted by a number of participants over the two years but with slightly more regularity in the second semester of study (January – May 2008). One result of the availability and widespread use of mobile phones is that some of the participants increasingly regarded the role of WebCT in the course as marginalised at best and unnecessary at worst. Thus, it can be seen that the functionalist and utilitarian approach was not confined just to the communication elements of the VLE; rather for some participants at least it encompassed their overall approach to their use of the VLE.

The recent emergence and growth of mobile technologies has made education much more feasible and convenient for a whole range of learners including adult learners (Kinshuk and Chen, 2005). A growing number of institutions have begun to make greater use of mobile technology as part of their overall e-learning strategy or to be more exact: m-learning (Cavus and Ibrahim, 2009). Quinn (2002) defines m-learning as 'e-learning through mobile computational devices: Palms, Windows CE machines, even your digital cell phone'. In fact, given the huge increase in functionality and computational power of

the latest versions of mobile phones the distinction between palmtop computers and mobile phones is becoming less obvious (Cavus and Ibrahim, 2009). In a subsequent section the implications for potential greater incorporation between VLEs and mobile phone technology is explored.

Technology Acceptance

Although this study did not set out to research technology acceptance it became apparent during the literature review process that the predispositions, fears and experiences that adult learners bring to any education/learning environment must be acknowledged. With regard to using computers, the levels of ability, qualifications and experience that the group brought to OEL course was quite low although not untypical for a group of adult learners. Aside from students having prior computer experience, studies (Arbaugh, 2000; Howland and Moore, 2002; Venkatesh et al, 2003; Kabonoki 2008) have shown that there appears to be a number of factors that influence technology acceptance or rejection such as gender and age. However, in this study neither age nor gender appears to have had any degree of influence (acknowledging the small sample size); the most prolific user of the VLE of the two semesters was both a woman and the oldest of all the participants. Furthermore, this particular participant (# 7) had very little experience in using computers save some low level word processing in her place of work and a beginners' computer course with her local adult education provider.

An important element of technology acceptance is the level of compunction that people are faced with when called upon to use and accept the new technology. In the case of the OEL course compunction would not appear to have been a very strong theme, perhaps because all potential participants were fully aware of the blended learning element of the course. As such, in terms of the participants needs using the VLE was consistent with

their needs/desires to obtain the social care qualification. In addition to obtaining the qualification there were a number of the participants who were already quite used to computers and certainly were not fazed by what lay in store as typified by participant #12's comments: "I was one of the people who really bought into the idea of the live online classes…I think I imagined something like video conferencing as well".

This is not meant to imply that every participant was fully conversant or happy with the technology based element of the course. Even for those who were self confessed technophobes they accepted that if they wanted to obtain the degree qualification they would have to accept (if only at a minimalist level) the computer based element of the course. For example, participant # 4 when commenting about his feelings towards computers remarked: "I'm a disaster I just want to get this over and done with; I have no big plans sorry". Participant # 7's sentiments regarding her use and adoption of e-learning and ICT could not have been further from her colleague's. Remarking that she had seen a time when to have a phone was very rare and the most common way to keep in contact at a distance was by post; she was still very much in awe of a system where she was able to participate in an online tutorial while on holiday.

Participant Responses – Adaptive Learners

Returning to the problems previously identified in chapter four: course governance, IT support, broadband connectivity, access protocols and library services provision; it can be appreciated that adoption of the critical transformative perspective implies a far more inclusive and participatory way of resolving these issues. For example, the provision of services (such as IT support) should be designed in conjunction *with* adult learners rather than designed *for* them should be the goal of educators, education providers and policy

makers. Ted Fleming posits that by adopting a humanist transformative approach "education would be redefined as an exercise in democracy, teaching democracy and aiming to instil democracy in classrooms, communities, the workplace and in society" (Fleming 2008: 15). Thus, learning becomes more than a transactional exercise; it becomes a vehicle for partnership, change, emancipation and empowerment. The consequence of this empowerment is that the education of adults becomes a political as well as educational exercise that "mandates participatory democracy as both the means and social goal" (Mezirow, 1996, p. 66). The goal of education should therefore be about more than just a functionalist transaction of information; as Professor Ron Barnett states:

> If higher education is to be in any form of business, it has to be in the highest forms of human development. If education is an intentional set of processes aimed at producing worthwhile forms of human development, higher education has to be in the business of producing the most advanced forms of human development. A higher education designed to bring about critical persons capable of working towards a learning society can be no other.
>
> (Barnett, 1997, p. 162)

The preceding sections began with an acknowledgement that assessing the characteristics should begin with asking the question what is the VLE to be used for. The same could also be said in relation to identifying the characteristics of the successful VLE user; namely what type of learner will be using the VLE? There are a large number of studies that have looked at the ways that VLEs are used by participants, however as noted in chapter two the majority of these have looked at the experiences of full-time undergraduate students. Whilst there are certainly elements of the other studies that overlap with this study although it must also be again acknowledged that the experiences of the OEL group whilst not unique did raise issues that are not common to the majority of other undergraduate students. The OEL group did have monthly face-to-face class contact; however, aside from these sessions they spent long periods of time away from lecturer support. In some cases the participants lived and/or worked close to other

classmates but in a number of cases a participant was remote from their classmates. Even where classmates worked in the same unit they did not necessarily work the same shift patterns so the opportunity to meet face-to-face was often limited. As proposed in chapter four, arguably the most important theme to emerge was that of adaptation. To a greater or lesser extent the participants adopted strategies that enabled them to use the VLE in a manner that best suited the situation that they found themselves in due to varying conditions such as previously outlined e.g. poor connectivity, limited time etc.

Support

Conole et al. (2006) highlight the importance of acknowledging that 'students are part of a wider, networked, community of peers. They are members of a range of communities of practice - to share resources, ask for help and peer assess'. In addition to needing and getting support they may be very capable of providing support to their fellow students and teaching staff alike. The results from this study are broadly similar to other studies (Timmis et al., 2004; Conole et al., 2006; Creanor et al., 2006 and 2006a) who all noted the importance of support both for students and teaching staff. Jackson (2003) notes that students are part of a wider networked community of peers; this community membership can help with the sharing of resources, to provide help, advice and guidance. Time and again participant after participant referred to the role that support played in maintaining their place on the course. Family members played an important role in providing support but this was generally more of a moral or inspirational types support although in two cases family members were cited as providing practical computer support. The practical support provided by classmates was a very strong feature of this study and arguably was very instrumental in the successful retention of so many students. The task for online course designers should be to harness this sense of community; thus learning activities

should incorporate and utilise networks in a way that promotes independence and empowerment of the adult learner.

Adaptation

The point about the participants adopting a utilitarian attitude was previously discussed in terms of the adoption of pragmatic response to the situations that the participants found themselves in with regard to a busy work –life balance, technical problems and changing lecturer pedagogical expectations. However, this process was only possible because a number of the participants provided support to others in terms of supporting communication and providing copies of course notes. The quote from participant # 1 demonstrates how others supported his reduced engagement with WebCT:

> I know that there might be messages and stuff but if there was anything I was missing then ------ or ------ would ring me or send a text telling me to log on or that, if it was ----- then she would print off whatever I needed.

A consistent feature that emerges from the data was the ways and means that the participants adapted to the problems that they faced. For example if they lived in an area where there was no broadband and consequently downloading large amounts of course content was problematic they often arranged to have the course notes printed off as indicated in the quote above. Some of the participants, especially in the first year of the programme went to local libraries or internet cafes to access the VLE if they were experiencing difficulties accessing from home.

One can view the lower levels of engagement with the VLE in a number of ways:

1. Lower levels of engagement were a pragmatic response to the problems faced by many of the participants. They simply adapted their course activity in response to the complex situation that they found themselves in and did what had to be done

in order to get through the course. In effect the participants empowered themselves.

2. The Lower levels of engagement were a direct result of the failure of the principal stakeholders: the ITT and the HSE to fully plan for and resource the course and consequently the eventual course became a watered down version of what was intended which could be negotiated with far lower levels of interaction and engagement.
3. Problems such as broadband coverage, computer access, software compatibility and variable teaching and learning requirements provided a convenient excuse for some participants to reduce course engagement to a minimum.

In reality the three perspectives could be applied to most of the participants at some stage over the three years of the OEL course. However, when one considers that only two of the original twenty in the OEL group did not complete the course it should be acknowledged that despite the difficulties presented this was a dedicated and adaptive group. In terms of being consistent with the existing needs values and past experiences of potential adapters, WebCT was largely accepted at least in terms that it was consistent with what the participants needed i.e. obtain the social care qualification. The majority had at least some computer and internet experience so once again whilst the VLE was a new platform; many of the elements of WebCT were in one form or another familiar. Familiarity with existing technology such as mobile phone technology was discussed in the previous section in terms of activities and usage patterns. However, in the context of adaptiveness it could also be argued that the OEL participants' use of mobile phones was one of the most proactive and adaptive strategies that they adopted. The use of widespread mobile phone usage was also noted in Conole et al.'s (2006) '*Student*

experiences of technologies' study involving 8 case studies of a range of third level students. Similarly to the results of this study, Conole et al.'s (2006) research found that mobile phones were well used for communication between classmates and to a much lesser extent with teachers. In the case of this study the lower level of use for student-lecturer communication via mobile phones may reflect a number of issues such as: (i) non ownership of a mobile phone by two of the lecturing staff (ii) unwillingness on the part of lecturers to provide their mobile phone number due to concerns about boundaries and/or privacy and (iii) no provision made for, or consideration given to the use of mobile phone as an integral and embedded component of the overall e-learning strategy.

Clearly items (i) and (ii) are very much a matter of personal choice on the part of lecturers. However, incorporating greater use of mobile phones into the overall VLE platform is an important and potentially very useful development. The high levels of mobile phone ownership and use by the participants would indicate that they were comfortable with the technology; indeed they used it very well as a reactive and proactive communication strategy when necessary to overcome difficulties with accessing the VLE.

As discussed in the previous sections many of the participants adopted a utilitarian pragmatic approach to the VLE, simply using the VLE when, how and where it suited their needs. For these participants' technology acceptance or not was not necessarily the result of a love or hate of technology, rather it was a reasoned response resulting in strategy that utilized the available technology in the most appropriate (to their needs) manner. Technology acceptance is more likely if the users or potential users perceive there to be a demonstrable benefit to using the new technology. These potential benefits might relate to improving pay or promotion prospects in work; enhancing their work

performance or simply to gain some form of competitive advantage. Simply put, if there is no perceived tangible benefit or advantage to be gained by using a technology it is far less likely to be adopted.

On one side of the debate the lower of engagement levels can be seen simply as disenchantment or fatigue. However, it could also be argued that an ability to adapt and personalise their learning situations can just as easily be viewed as being a positive outcome. This ability of e-learners to adapt and personalise their e-learning situation have been noted by many studies (Entwistle et al., 2002; JISC, 2007; Conole et al., 2006b; Mimirinis and Dafoulas, 2008).

Lifelong Learning?

As discussed in chapter two there exists a dichotomy of opinion regarding the role and purpose of education. The functional/managerialist with its emphasis on skills and knowledge transference on one side and the humanist side of the debate who argue that education is about transformation of the individual and by extension the wider community. Therefore when discussing the findings in the context of what a VLE can offer a group of adult learners the question must be addressed in the context of what type of learning does the use of a VLE support and help deliver. As highlighted in chapter two Coffield's (1999) 'guises' provide a useful framework against which the participant's engagement with the VLE can be gauged, briefly they are again: (a) an agent for change, (b) a buffer against change, (c) a means of increasing economic competitiveness, (d) an arm of social policy as a means of combating social exclusion and (e) a vehicle for personal development (Coffield, 1999). While it is difficult to discern clear elements of guises 'a' to'd' in the findings, one could certainly argue that there is evidence that participation in the course and the use of the VLE did act as a vehicle for personal

development. Whether all the group members did engage in lifelong learning in the sense of learning for learning's sake is debateable. However, it is apparent that there were (to varying degrees) elements of development through the learning process.

Learner Characteristics Summary

This group of learners represented a diverse set of adult learners in terms of age, experience, available resources and geographical spread. However, what they did possess was a strong support network. Even when faced with difficulties they developed coping strategies that enabled them to overcome or at least negotiate these difficulties. Many of these strategies relied on the support network that developed in the class. The OEL participants consistently demonstrated an ability to negotiate problems and issues that arose throughout the three years. They developed a number of coping and adaptive strategies that enabled them to deal with the issues rather than wait for someone else to sort the issue; in effect they empowered themselves, somewhat tentatively at first but as the course progressed this was more evident. The characteristics of a successful e-learner as outlined in chapter two by Clark (2004) were certainly in evidence with this group. Whilst they might not all have been 'confident and competent users of ICT' they certainly possessed an 'ability to collaborate and co-operate with other learners' combined with effective communication skills and a motivation to succeed (Clark, 2004, p. 6). These characteristics of the OEL group learners are very reminiscent of the characteristics reported by the Creanor et al. (2006b, p. 9) LEX study notably the fact that technological capabilities were not deemed to be core to being an effective e-learner; rather it was ability to:

> ...cope with life, learning and technology; the capacity to network with others through a variety of communication channels; highly effective time management skills; and most crucially, the skill to integrate and balance learning with work, leisure and family commitments are key.

Adaptation and self-empowerment to take control was arguably the strongest theme to emerge. The group continually demonstrated an ability to adapt, to overcome the problems that they were faced with. If they could not deal with issues head on such as poor connectivity leading to a difficulty with downloading notes, they simply went around it by getting a classmate to print off the course material. The group utilised the VLE in a manner that demonstrated a high level of reflexivity in that they consciously developed strategies that facilitated their course participation to the extent that each one deemed necessary. In effect they became increasingly aware and of their situation and became increasingly sophisticated in the manner that they used the VLE – one could almost argue that some of them at least had developed meta-cognition with regard to use of the VLE (Wall and Higgins, 2006). Returning to the lifelong learning debate, as previously noted while all the members of the OEL group might not be described as lifelong learners they all developed as learners and thus there was some element of transformation.

What type of VLE? Responding to Issues

VLEs certainly have a lot to offer adult distance learners, however a number of issues need to be highlighted and addressed if VLEs are to make a more meaningful impact for this group of learners, particularly for the many people who live in rural areas. It is ironic that the very group of potential learners who can most benefit from VLEs are the group who find it most difficult to access VLEs. The following sections look at how VLEs might be used to greater effect for adult distance learners.

National Policy and Delivery

The claims made by proponents of e-learning can induce feelings ranging from incredulity to paroxysms of hope for the future. On the face of it e-learning certainly seems to offer a ways and means of widening educational participation making education 'life wide'. Delving deeper into e-learning; VLEs seem to offer a useful platform whereby content, teaching and learning can be married into one meaningful alternative learning environment; and not just an environment regarded as supplemental to traditional learning. As previously noted in chapter two, well designed e-learning environments have the capacity to provide meaningful learning environments that encourage and facilitate reflective learning (Jones and McCann, 2006). However, e-learning platforms exist within a milieu that is reliant on issues such as connectivity, access and user experience and abilities, all of which impact on the potential effectiveness of said platforms. Whatever policies, protocols, think tanks, committees, legislation, commissions or memorandums are drawn up, designed or implemented, the reality for most adult learners on the ground so to speak is frequently very different from the aspirations of such instruments or bodies. It is quite clear that aspirations and mission statements need to be turned into concrete executive decisions and actions.

As stated earlier, the planned rolling out of broadband throughout the country remains an aspiration as of mid-late 2009; approximately 10-15% of the population are still without broadband connectivity (ComReg, 2009). Ironically, in mid 2009 approximately eight months after the planned Next Generation Networks (NGNs) was launched, even a basic level of nationwide broadband connection was not available. In late 2008 a number of influential bodies (Forfás, Industrial Development Authority, Enterprise Ireland and Science Foundation Ireland) published their response the 'Response to the Department of

Communications, Energy and Natural Resources' Next Generation Broadband Consultation Paper' wherein they argued that provision of NGNs will:

> ...provide the basis for a new range of information intensive service industries, particularly in the areas of business and consumer software applications, digital media, entertainment, education, and health. (Forfás et al., 2008, p. 3)

With specific reference to rural areas they argue that NGNs can help maintain sustainability by allowing rural dwellers greater access to services (such as health and education) while still remaining in their respective areas. However, they are under no misapprehension regarding the size of the task that awaits the Irish government if it is to make NGNs a reality:

> Ireland's current telecommunications industry structure, infrastructure and market characteristics make the timely availability of next generation services very unlikely unless Government plays a strong role in progressing the range of actions necessary to ensure that advanced services become available in Ireland no later than they become available in leading European countries (Forfás et al., 2008, p. 5).

The ability for individuals and groups to influence macro policy issues such as the provision of nationwide broadband coverage is limited. However, this should not imply that one does not strive to change or influence policy direction. Nonetheless at the same time, rather than simply wait for national policies to change the aim should be to maximise whatever resources are available and be adaptable and proactive.

Course Planning, Implementation & Governance

Arguably, the implications for course planning and governance are one of the key issues in relation to this particular study. The importance of preparation, planning and role definition when designing and implementing e-learning environments has been highlighted in a number of papers (Minshull and Powell, 2004; Timmis et al., 2004; Tisaun and Vanthienen, 2005). At a regional level the HSE was committed to up skilling their existing social care staff and were keen to embark on the course as quickly as possible, thus the social care response was equally committed to a delivering a quick

response. From inception to course commencement was a period of approximately four to five months (some of this time incorporated the academic holiday period) the relative speed of which subsequently proved to be an issue when it came to course planning and delivery. However, this speed subsequently led to some lack of clarity between the college and the HSE, and within the college regarding boundaries and responsibilities between academic staff and the various support components such as the academic team, IT support and WebCT support. The lack of foresight and clarity regarding roles and expectations was clearly evident regarding a number of key elements:

- Practical access issues such as firewall protection and participants' release from work duties during synchronous tutorials was not clarified between the college and the HSE prior to course commencement which led to ongoing problems.
- There was a clear need for Institute's lecturing staff to adopt a more uniform position regarding the use of the VLE in terms of activities, content and presentation.
- The support provided by the college's library and IT unit needed to tailor their services to a greater degree to meet the needs of remote adult learners; needs which are not necessarily the same as on-campus students.
- The planning of the course involved some elements of learner involvement, primarily in terms of the ICT skills survey prior to course commencement. However, thereafter there was little formal engagement of the participants in the ongoing design process of the course.

Cooper et al. (2007, p. 231) argue that "accessibility and usability are intrinsically inter-linked"; and if this usability and accessibility is to be accomplished it can only be achieved through a process of careful initial planning and ongoing periodic reviews. While being responsive is a commendable management trait the aim should also be to

take a lead, to envisage potential problems and be proactive rather than simply being reactive. For a group such as the OEL group who were remote adult learners already labouring under a number of limitations even seemingly minor issues could easily become very irritating problems.

Minshull's (2004) report on mainstreaming VLEs raises some very pertinent points regarding the importance of planning and governance if VLEs are to deliver on the promise of widening education participation that many people believe they offer. Minshull believes that the first and most important question that should be asked is: "what is the reason for buying a VLE?" (Minshull, 2007, p. 20). Quite simply there is no point in investing time, money and resources into a major project if it does not fit with the college's strategic goals; in effect the college authorities need to have a clear answer to the question - what is the potential of a VLE for furthering these goals; goals such as the creation of a richer learning environment for all students through the use of VLEs; the provision of more remote leaning opportunities for non-standard students. Each goal positions the role of VLEs differently relative to different student group needs.

On the other hand a more transactional didactic approach may require far less functionality in the VLE's component parts. Depending upon whether the VLE is used for blended learning, content delivery, collaborative learning, on or off campus or for learning support will impact on factors such as staff development, software functionality and IT support. As Minshull (2007, p. 7) argues:

> ...a supportive Senior Management Team (SMT) is essential, preferably with a member of the SMT having overall responsibility for ICT and e-learning, which should include VLE implementation.

The importance of this last point cannot be overstated. If course design and delivery and coordination is left in the hands of the course designers and lecturers the course team may well lack the requisite authority needed to harness the different elements that are necessary to fully support distance adult e-learners. Fleming (2008, p. 7) argues "that the commercialisation of HE [Higher Education] is one example of how the functional imperatives of the management model have come to hold a dominant position in HE". It is clear that there is the potential for tension between the intended pedagogical approaches and delivering what is possible within the constraints of practical considerations. According to the Brown and Voltz (2005) there are six central elements that should be incorporated into the design phase of an e-learning project; one of these elements they categorise as 'delivery'. This term refers to the tension that can be faced by e-learning designers when attempting to reconcile the gap between trying to create engaging learning spaces without recourse to high technical specifications that render the e-learning task accessible only to a few.

There follows a number of sections that looks at specific ways and means that this planning and governance might be implemented in a practical manner with regard to the provisions of support and the greater use of mobile phone technology within VLEs..

Support Elements for the VLE – IT & Library

Discerning the characteristics of an effective and appropriate VLE is a complex task because it asks the question, or it should ask the question – what is the VLE being used for? A VLE that is being used as a supplemental support to on-campus full-time students has a completely different role and rationale to a VLE being used as the primary or sole teaching strategy to distance students as part of a blended or fully online course.

Particular attention and targeted responses have to be paid to meeting the distinct the needs of this group; quite simply one size will not fit all.

IT Support

It might seem self evident that IT support one be one of the main characteristics of an effective blended learning course, however, as discussed in chapter two there appears to be no consistent approach to supporting the needs of distance learners using VLEs. The inability to log on was one of the most consistently reported problems that were cited in the diaries. The trouble was that participants were often unsure what the nature of the problem was, therefore they were unsure who to ask for help. A study (Marriott 2005) carried out on behalf of Trent Strategic Health Authority (SHA) in the UK entitled 'Access to learning resources for students on placement in the UK' made a number of recommendations both in relation to IT support, software (notably firewall issues) and access to libraries for students who were away from their base academic institution. Whilst these other two issues (firewall and library) are dealt with in other sections, the comments in relation to IT support are succinct and to the point emphasising the importance that 'it would be expected that IT support for both set-up and maintenance of the PCs would come from the academic institution' (Marriott 2005, p. 263). Ingraham et al.'s (2002, p. 34) evaluation of VLEs in five UK universities were unequivocal arguing that if VLEs are to have a meaningful impact there is a real need for "24 hour a day support, 7 days a week, 365 days a year even for institutions that are largely concerned with campus-based activities". For smaller colleges such as ITT the provision of twenty four hour a day support may well be unworkable in terms of cost benefit ratio. However, the experiences of the OEL participants would certainly add weight to Ingraham et al.'s

(2002) call for dedicated out of hours VLE support in addition to the regular IT support teams.

Library Usage

Using a college's library is perhaps one of the most central roles or activities a student might engage in over their period of study. Although online library usage was not an initial focus for this study its use as an important activity emerged over time notably during the second semester (January 2008 – May 2008). When the participants began their course in September 2005 they received the standard library information sessions that provided a guided tour of the on-campus library and the library's online resources. Subsequently, aside from informal sessions provided by the author regarding the use of Ebrary (the online book repository) there were no other library information sessions provided.

The provisions of user friendly library facilities both virtual and physical are now an integral pre-requisite of every third level course. However, the protocols and procedures that are designed for students who attend the campus on a regular basis may not be suitable for remote students. Jill Needham of the Open University (OU) and Kay Johnson of Athabasca University (Canada's version of the OU) have proposed ethical guidelines for the provision of library support to distance learners that comprise ten principles. Amongst these principles two of particular note call for college libraries and authorities to:

- Provide distance learners with access to equivalent levels of library services, resources and support as students at campus-based universities;
- Acknowledge the reality that distance learners may need library services that are more personalized than those for on-campus students

(Needham and Johnson, 2007, p.119)

The comments from participant #12 in chapter 4 provided a good summary of both the positive and negative aspects they found of accessing the library remotely and are worth revisiting. On a positive note:

> One thing I really got into last year was using the online library facility. I would renew the books online but I also started to look up books in the catalogue and then email the library and get yourself or ---- to bring the book the next session.

However, this participant (# 12) also reported a number of negative experiences which certainly add weight to points raised by Needham & Johnson (2007):

> There should be a better facility for students who are off campus ... and it's not always the big things, for example if you miss a renewal date you can't renew the books online. One time I owed some money so I had to drive to Tralee otherwise the fine would have added up.

It is worth pointing out that in order to physically hand in the books to the library the drive to the college campus represented a round trip of approximately ninety miles for this participant. Notwithstanding this particular episode the same participant (# 12) went on to praise the online library facilities:

> That said, the online library is a great facility, especially since I started to use the eBooks in Ebrary. I think that the eBooks should be used a lot more. I really found them useful especially since we just can't walk into the library like other students.

The Online Computer Library Center Inc. (OCLC) represents[57] a significant voice in the library world both academic and general. As far back as 2003 the OCLC's E-Learning Taskforce report argued that "course-management systems (CMS) should be viewed as another means for academic libraries to become more engaged in the learning and teaching missions of their institutions" (OCLC, 2003, p. 1). This point has also been well made by Gibbons (2005, p. 12) where she argues that:

> ... to remain relevant, academic libraries must go where the students and faculty are. More to the point, libraries need to be where the learning is happening, even if this is the virtual environment of a CMS.

[57] More than sixty thousand libraries in over one hundred countries

Incorporating a greater role for library facilities and staff as part of overall VLE provision can have a positive impact on the learning experience of remote adult learners. For example, in Central Missouri State University, librarians became co-instructors on a number of online courses becoming what they referred to as "embedded librarians" (Dinwiddie, 2005, p. 8). Working alongside the course instructors in the development of their Blackboard course the librarians designed library assignments that related to and incorporated course material (Dinwiddie, 2005). Adult learners who are also distance students operate with a number of disadvantages not least of them access to library facilities. There were clearly a number of problems and shortcomings with the library element of the OEL programme which could certainly have been minimised if the college had a policy of greater personalisation of library services for off-campus students.

M-Learning

The initial research questions conceptualised the use of the VLE in terms of computer and internet access. However, as the study progressed it became more apparent that the use of phones, in particular mobile phones was a bigger component of the virtual experience. It is apparent from this study that the use of mobile phones came to represent a significant component for the participants yet its importance was only belatedly acknowledged and incorporated albeit on a minimal basis with the author using his mobile phone to send group text message. Perhaps, somewhat ruefully, the JISC (2009, Internet) note that "despite the almost ubiquitous ownership of mobile phones, the adoption of mobile technologies in post-16 teaching practice is still in its infancy".

There are clearly a huge range of activities and learning opportunities that even the relatively humble mobile phone can perform. At the most basic level the mobile phone

can be used by the instructor as a communication. With very little training instructors could be taught to set up contact groups on their phone's memory thus contact can be made easily and quickly to all of the class relatively inexpensively. However, an initiative in Africa has demonstrated how mobile phones can be used to greater effect in the provision of distance education. The Dunia Moja project (*'dunia moja'* means *'one world'* in Swahili) is a pilot programme led by Stanford University in conjunction with three African[58] universities to test the use of mobile phones to deliver educational content. As part of a distance education environmental course students in all four universities can use the phones to access the course Web site, send text messages, and post media to mobile blogs. In addition, the students also receive a memory card loaded with pre-recorded lectures which include video and PowerPoint slides which have been created by all four universities (BizEd, 2007). Many distance education models now incorporate the internet as an integral delivery mechanism, however "those models do not take into account the fact that Africa lags behind the rest of the world in traditional, computer based Internet access" (BizEd, 2007, p. 58). However, poor internet access and low broadband coverage also makes this form of distance learning potentially very applicable in areas of poor or non-existent broadband coverage such as the two counties (Cork & Kerry) that the OEL participants were drawn from. Clearly, providing memory cards with pre-loaded videos and lecture notes helps overcome some of the problems associated with accessibility and usability. Allocating the time and resources necessary to develop such learning objects would present a number of challenges, but challenges that are not insurmountable and given the opportunities that mobile phones present in the face of patchy or non-existent broadband coverage they offer an alternative worth considering.

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[58] Makercre University in Uganda, Mweka College of African Wildlife Management in Tanzania, and the University of the Western Cape in South Africa.

Whilst m-learning would seem to offer a number of benefits it still has to contend with a number of technical issues such as "usability, compatibility and accessibility related questions that hinder seamless mobility and m-learning" (Cavus and Ibrahim, 2009, p. 79). Salter (2009) while recognising the potential that m-learning offers, advises a note of caution as there are some serious concerns to be addressed[59].

Nonetheless while it should be acknowledged that these issues can impact on the immediate usefulness of m-learning they are far from being insurmountable. Moreover, given that mobile phone ownership at the end of 2008 was 120% (ComReg, 2008) of the population and signal coverage currently stands at approximately 99% coverage (ComReg, 2009) compared to the 85-90% broadband coverage as previously discussed it can be appreciated that m-learning particularly for rural distance students offers an area well worth further investigation. The high levels of mobile phone use by the OEL participants would seem to indicate that they were comfortable and familiar with the technology if only for a communication tool. Not that using the mobile phone as a communication tool should be seen in negative terms. Habermas's Theory of Communicative Action (1984, 1987) argues that the maintenance of a democratic society

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- [59] Lack of good educational applications. This lack of applications may result in a 'catch 22' situation where educational institutions may baulk at investing in technology until there is appropriate software while at the same time software developers may wait for the market to develop.
- Small screens. The design of the interface can have a significant impact on user satisfaction, "...for example, users prefer not to scroll through multiple screens of information" (Salter, 2009, p. 807).
- Inputting text. Even for young people who may be used to text messaging mobile devices commonly do not allow for easy input of text particularly a large amount of text. However, a potable add-on keyboard and/or speech recognition can help overcome this problem.
- Lack of standards. In many areas of e-learning such as the interchange of content e.g. SCORM[59] there are internationally agree standards; there currently are no such standards for mobile technology.
- Lack of printing capability. However, Salter (2009) does acknowledge that data can be readily transferred to other devices that can print.
-

is predicated on the creation of a learning society; a learning society that is characterised by free, open and public discussion. Alternative discourses to rational capitalism facilitated through greater levels of public engagement and associational life can help form, inform and reform opinion and in turn effect change. One way of promulgating this discourse is through new media technologies; therefore technologies if used effectively and appropriately can create alternative discourses and in turn bring about change (Barton, 2005; Fleming and Murphy, 2006). Critical education pedagogy requires a discussion space, a place where learners can interact and create their own communicative arena. The use of the mobile technology can be viewed as examples of where the OEL group took charge of the situation themselves thus overcoming some of the communicative issues they faced.

Kairos

The use of metaphors helps and guides both the researcher and reader providing as it does a conceptual shorthand and reference point to what are often quite abstract concepts (Miles and Huberman, 1994). The term Kairos[60] is borrowed from the journal of the same name which aims to explore the intersections between rhetoric, technology and pedagogical practices. In this study it is used to try and represent the relationship that the technology had on pedagogical practices and vice versa From the instructor's perspective the manner in which the VLE is to be used may be informed by educational perspectives about how teaching and learning can and should be structured, in other words examining the underlying course pedagogical approach.

[60] *Kairos* is a refereed open-access online journal exploring the intersections of rhetoric, technology, and pedagogy. For further information access: http://kairos.technorhetoric.net/about.html

Returning to Weller's (2002) categorisation of online course as outlined in chapter two, it can be appreciated that adopting a constructivist approach to teaching and learning will necessitate activities that encourage and facilitate opportunities for exploration and clarification of the course topics and hence will incorporate elements such as Computer Mediated Communication (CMC). The course designers' aim was to produce a learning environment that was underpinned by constructivist approaches to teaching and learning. If one was to relate the OEL course to Powell and Minshull's (2004) model of VLE functions – the OEL's primary functions were 'mostly communication' and 'mostly content' with no overt management functions such as tracking and monitoring.

From the outset, the OEL course incorporated synchronous communication in the form of bi-weekly live online tutorials. These tutorials were intended to act as an interactive learning environment where the participants would be encouraged and facilitated to learn in a supportive and constructivist manner. However, due to a number of reasons notably the issues of connectivity and firewall protection the live tutorials proved to be increasingly unworkable for the majority of the OEL group. In fact, eight was the highest number of participants who ever took part in one of the live tutorials. In years two and three of the course individual module lecturers gradually phased out their live tutorials as there was a feeling that the provision of consistent learning environment (even if it entailed a reduced level of interactivity) was preferable to high interactivity but only to a limited number of the participants. During the year two teaching semester the number of live tutorials gradually declined; four of the six module lecturers discontinued their use before the semester was over.

In year three the remaining[61] module lecturer (the author) delivered one last live tutorial before discontinuing their use as well - the number of participants who took part in this last tutorial was only two. The course development team certainly had an expansive view on the role of education as a transformative vehicle delivered through teaching strategies that were designed to encourage constructivist teaching and learning. The practicalities of delivering e-learning through a VLE clearly can be compromised by the availability of technology. Regardless of the educational theories underpinning the pedagogical approach to a course (behaviourist, constructivist or critical) the reality is that learning activities need to be structured in such a way that the aims and objectives of the course are capable of being delivered. This is not to imply that all pedagogical commitments have to be discounted, for example a commitment to using communication fora to create a sense of community and shared knowledge development can be created using different forms of asynchronous communication. Nonetheless the example of the synchronous communication demonstrated the potential pitfalls if pedagogical aspiration are not tempered by practical realities.

Chapter Summary

The key issue from the start of this research was to explore how the OEL participants as adult remote learners used and negotiated their use of the VLE. Crucial to developing this understanding was the acknowledgement that this group were all adult learners working remotely from the host college, some of them over seventy miles from campus. As such this group, unlike full-time attending students, were not using the VLE as an adjunct or supplemental exercise, for this group the VLE was an integral part of a blended learning approach. How and why they used the VLE offers a useful and illuminating insight into one small group of learners as they tried to grapple with the

[61] The number of modules went from six in year two to five in year three

complexities of balancing work, life and study commitments. Certainly from an interpretative research perspective the usefulness of any study is arguably that it gives voice to the participants allowing others to view the event from the insiders' point of view (Sarantakos, 2005).

That 'voice' from the data produced a number of useful findings. Firstly in asking what have VLEs to offer the adult learner one must acknowledge the complexity of the adult learners' life; if VLEs are not part of the solution then perhaps they are part of the problem adding another burden to an often overcrowded lifestyle. For example, as reported in chapter four simply proving support and ancillary services that are tailored for full-time campus based students fails to acknowledge the special conditions that face adult learners. Secondly, but closely related was the need for careful planning and governance. Transformative education is not simply about creating proactive communicative learning environments; it also acknowledges that the learner needs to be involved at all stages of planning and delivery. Failure to incorporate thoughtful and considered planning is not simply an educational perspective; from a managerialist perspective as well it is desirable to have a VLE (or any resource for that matter) that is used to its full extent. Reported problems with course content, lack of access and the upgrading of WebCT give weight to the argument that shortcomings in the planning process will heavily impact on the VLE experience. The third principal finding relates to the manner that issues such as connectivity and computer access impacted on the pedagogical approach. Regardless of whatever pedagogical approaches that a course designer may envisage in the delivery of a programme, technical realities and capabilities can and in the case of this programme did impact. The adoption of a constructivist perspective may require a greater level of communication and interactivity than for

example a more functionalist approach. However, as demonstrated in chapter four the group displayed an ability to overcome and adapt and maintain to some degree at least the intended constructivist pedagogical approach. Technical issues certainly can influence pedagogies but they should not, to the detriment of the programme, enforce a narrow range of pedagogical approaches. It is this ability to overcome and adapt that as noted previously noted is arguably the strongest theme to emerge. While there is certainly a gap between the rhetoric and reality in terms of e-learning provision; in a perverse way one might argue that this gap has (to some degree at least) been 'plugged' by the ability of the adult learners to adapt and overcome.

If claim in the report of *The Taskforce on Lifelong Learning* (2002) that open and distance learning can indeed ameliorate the geographical and temporal barriers faced by rural dwellers seeking to access education using mobile information and communication technologies is to be realised then the issue of countrywide hi-speed internet access must become a reality. Jackson (2003) argues that having a supportive and facilitative external environment is crucial if distance online learners are to have positive experiences of VLEs. Despite the rhetoric and best intentions of legislators, educational technologists and instructors, the reality for the distance adult learners who

> ...may not have access to home computers, the issue of good quality computer facilities, coupled with fast access and printing is critical in developing the use of groupware. Poor facilities will severely hamper adoption of groupware by students, despite the best efforts of lecturers, Jackson (2003, p. 100).

Pedagogically there were (due to the previously outlined reasons) limitations on what could be achieved; nonetheless the use of the VLE for the most part did facilitate the building of a successful community of adult learners. The use of the VLE in this course certainly supported adult distance learning. A purely online course using the VLE in this instance would have been very problematic and it is doubtful if the course completion

rate of over 80% would have been maintained without the benefit of monthly face-to-face classes the importance of which was commented on by the participants. Nonetheless the participants recognised the importance of incorporating the VLE into the course, without which delivery of the course (up to standards acceptable to the college registrar in order to qualify for the degree) would have been impossible. It would appear that a community of learners was created, perhaps not as transformative as some critical pedagogues would argue that lifelong learning should be. Nonetheless, after three years the members of the OEL group graduated with a Bachelor of Arts degree, which it could be argued, transformed their sense of self, both professionally and personally. This is not to imply that the acquisition was the only concern for the delivery team or the participants. From the delivery team's perspective there was certainly a commitment to create (technical limitations notwithstanding) a constructivist learning environment that was appropriate to the teaching of adults, adults who had years of personal and professional experience.

The study of the experiences of the OEL group gave insight, albeit on a small scale to the issues and problems that can beset adult distance e-learners. Their experiences are not necessarily typical of other adult learners such as those who attend campus-based lectures or those adult learners who utilise e-learning technologies who live in areas where availability of high-speed internet access is an issue.

Chapter 6 – Conclusions & Recommendations

Return to the Rationale

Technology has certainly changed the ways and means by which all people can potentially be educated; in fact it has fundamentally changed the sense of where people can be educated. However, one should be mindful of accepting at face value the claims that the proponents of e-learning have sometimes made. Ted Fleming (2008, p. 7) contends that "HE [Higher Education] is in danger for becoming uncritical in its acceptance of technology ... perceiving all problems as amenable to technical solutions" or as Freire (1970, p. 37) characterises this technological domination: "modernization will proceed to mythologize technology".

From the outset, the study's primary aim was to explore the ways and means that adult learners use a VLE as an integral component of the teaching and learning strategy of an undergraduate programme. The aim of this study was not to evaluate if the learning outcomes of the OEL programme were achieved. Nor was the aim to evaluate the technology (in this case the VLE WebCT/Blackboard) used as the primary delivery and teaching mechanism used to facilitate and support the OEL programme. While these two areas would certainly have provided legitimate areas of inquiry they would have been at odds with the author's stated epistemological interpretative approach to research. Aside from the author's position it is apparent that there is a preponderance of e-learning utilisation studies that have utilised the positivistic evaluative approach, particularly studies that focussed on full-time college students (Salaway 2004, Browne et al. 2006, Browne et al. 2008, Cosgrave et al. 2008). Therefore, the study purposively adopted an interpretative approach to the exploration of adult learners' experiences of using a VLE.

This group of people: adult distance learners living and studying remote from the college campus characterise in many ways the very people that e-learning as a concept is purportedly intended to help. However, while the OEL group encompass many characteristics of adult learners in general it was not the intention to generalise the findings, a case study is after all about illuminating a small aspect of a phenomenonon (Yin, 1994). In adopting an interpretative qualitative approach the researcher is effectively acknowledging that they are not the 'expert'; in this case it is the research participants who are the experts, it is their voices that give the study its legitimacy (Crotty, 2005). Consequently the study focussed on exploring and 'capturing' the ways and means that the participants used the VLEs in the context of their lives. The collection (or 'capturing') phases of the study generated a large data set which when analysed using NVivo identified twenty topics thematically presented into four major themes: backgrounds/antecedents, difficulties and issues, activities/usage patterns and learner adaptation.

Although not an aim of the study one issue that arose in the process was the question as to whether the OEL group were lifelong learners in the sense that they were seeking to engage an education programme simply for the sake of personal development. While they were certainly adult distance learners it was apparent from the backgrounds/antecedents theme that there were a number of reasons for the participants embarking on the course. While there certainly was a strong element of career associated reasons for embarking on the programme a number of the participants also reported that personal achievement and personal development was a factor. Interestingly, a number of the participants noted that while they may have initially began the course for quite specific career reasons they developed an increasingly strong sense of personal

achievement as the course progressed. By the time that the course was drawing to a close they reported to me in an anecdotal way that they were really looking forward to the graduation simply because it would mark the achievements in a concrete and visible manner that had nothing to do with their place of work or future career plans. In terms of ascertaining if participation in the OEL programme had any lasting outcomes in terms of encouraging further educational pursuits, personal or career development it would be a useful exercise to carry out a follow-up study of the OEL participants.

Findings & Their Implications

It is important to remember that while social researchers generally present their findings in distinct sets of data to aid conceptual mapping there is often a degree of overlap and mutual influence or impact (Blaikie, 2007). This does not diminish the power of the findings to inform, it simply places a responsibility on the researcher to draw together the different threads.

In this study the primary technical issue reported were difficulties connecting to the internet. The activities/usage patterns were clearly influenced by some of the technical issues notably the communication element of the activities. As stated previously the course intended to adopt a constructivist approach to teaching and learning. Consequently communication fora both synchronous and asynchronous were deemed to be of great importance in the pedagogical approach (Weller, 2002). The availability or non-availability of a high-speed connection to access the internet came to assume greater importance as the programme progressed. The change from WebCT version 4.0 to version 6.0 entailed a greater degree of functionality that dial-up connections found increasingly difficult to be able to facilitate. The attendant difficulties resulted in a need to re-examine the pedagogical approach somewhat or at least tailor the approach.

However, the changes did not preclude the use of communicative pedagogical activities, simply a reworking of the synchronous communication requirements. This does however raise the issue of what role VLEs should play in dictating the pedagogical approach.

The reported difficulties regarding the provision of support and ancillary services required by the participants certainly echoes Skilbeck's (2001) plea that in relation to e-learning provision more of the same is not enough. Education providers need to acknowledge that one of the most striking features of being an adult learner is the very complexity of their situation (Ryan et al., 2009). Understanding and acknowledging that adult learners bring prior attributes, knowledge, prejudices and experiences is an important feature of adult learning. The prior skill levels reported by the participants would certainly not give a great deal of encouragement to those who profess that we are living in an information knowledge society. While not every adult learner works shift patterns such as this group, the findings certainly demonstrated the importance of understanding and incorporating a temporal dimension to design and delivery of a distance course incorporating VLEs. Far from presenting the group as passive it should be noted that the group displayed great levels of adaptability. When participants found it difficult to download materials they frequently contacted another class member and got them to download the material. Returning to the point about adaptability and self-empowerment it is open to debate how many of the OEL group developed meta-cognition abilities in relation to their use of the VLE in the course. However, there is certainly some evidence to support the point regarding meta-cognition. A number of the participants were clearly were very self-aware of how to utilise the VLE to a greater or lesser extent realising what elements of the VLE and what activities they needed to utilise in order to achieve their ends. Increasingly, some participants adopted a pragmatic

utilitarian approach to their use of the VLE; with regard to what they had to engage in, what activities they could avoid or at least engage in, in a minimalist fashion.

While extra time for planning would certainly have helped course implementation it needs to be undertaken in a realistic fashion that begins with an appraisal of the opportunities, resources and threats that can impinge on the delivery of the programme. However, along with planning there needed to be a shift in corporate responsibility. In this situation, the expectations of role and responsibility needed to be widened. For example, provision of VLE technical support appeared to be nobody's direct responsibility. Careful planning would have helped deal with the issues of computer access during working time, firewall access and the introduction of the new version of WebCT. The crucial element in this theme is the crucial development of shared understandings about what constitutes appropriate e-learning and what are the expected roles and responsibilities necessary to meet these understandings and expectations. There is no doubt that e-learning potentially offers many benefits to students, educational providers and educators alike, however one needs to adopt a critical stance and ask what and whose needs take primacy? From Marcuses's (1991) warnings in 'One-dimensional Man' first published in 1964 that technologically-enabled productivity enslaves rather than liberates through to Habermas's colonisation of the lifeworld (1984; 1987), "critical theorists have identified and examined new forms of domination, control and exploitation, enabled by technological development" (Cecez-Kecmanovic, 2005, p. 31). Alluding to an almost Orwellian world of social control Fleming's critique of e-learning is clearly influenced by Habermas where he argues that:

> E-learning offers another example of how the system imperatives can invade pedagogical practices. The constant ability of the tutor through the computer system to monitor, measure and mark the interactions of students on-line is good examples of these dangers (Fleming, 2008, p. 8).

This is not to imply that there is no potential for change, far from it. Habermas's Theory of Communicative Action (1984, 1987) argues that the maintenance of a democratic society is predicated on the creation of a learning society; a learning society that is characterised by free, open and public discussion. Alternative discourses to rational capitalism facilitated through greater levels of public engagement and associational life can help form, inform and reform opinion and in turn effect change. One way of promulgating this discourse is through new media technologies such as ICT; therefore technologies if used effectively and appropriately can create alternative discourses and in turn bring about change (Barton, 2005; Fleming and Murphy, 2006). Whilst e-learning could potentially be viewed as a pervasive and intrusive entity the facilitation of this discursive environment is also possible through the use of mass communication devices such as Wikis, Blogs and discussion boards (Barton, 2005). However, it is important to maintain a critical attitude to technology and its role in society rather than simply following modernist unquestioning acceptance that technological development is inherently beneficial (Feenberg, 2005). Nonetheless, particularly in his later writings Habermas (1996) became increasingly optimistic of the power that the public sphere can form a buttress against the state/economy system colonisation process. Despite the adversity faced by the participants they eventually triumphed and completed the course, but the completion was not without frustration and annoyance at times. Undertaking something as onerous as a part-time degree programme will always be a difficult and at times frustrating, but it should not be any more frustrating or difficult than necessary, careful and inclusive planning could have had a major impact in ameliorating some of the reported difficulties.

What Type of Adult Distance E-learning?

In the final analysis one must return to where one started – the research question/s: *In the context of a blended learning programme what is the role of VLEs in the facilitation of distance adult learning?* Although the preceding sections have all discussed the various elements of the overall question it is a summative exercise to explicitly attend to the embedded four sub-questions that attempted to tease out some of the elements contained within the primary question. They were:

1. What beliefs & intentions do adult e-learners display?
2. What learning strategies do adult e-learners display and/or utilise?
3. What coping/management strategies do adult e-learners display and/or utilise? – How do they negotiate the course requirements? – Do the learners utilise and engage with the course in the way that was envisaged by course designers?
4. What are the efficacious characteristics of an adult learning programme using a VLE?

What beliefs & intentions do adult e-learners display?

In this study there appeared to be a number of different groups each with their own perception and pre-disposition towards technology. One or two of the participants could be classified as being very doubtful either about the ability of an online platform to deliver an education programme or their ability to use the VLE. Atwell's (2005) study found that "people with a prior qualification were more likely to use ICT for learning, regardless of what the course was (cited in Conole et al., 2006, p. 102). In this study a positive predisposition to technology regardless of levels of prior educational qualification appeared to be more important regarding use and acceptance of technology. The strongest finding in terms of learner intentions and beliefs was a commitment to

complete the course regardless of the difficulties placed before them. A positive predisposition to e-learning will count for little if not matched by drive and commitment.

What learning strategies do adult e-learners display and/or utilise?

The variety of learning strategies that e-learners display has been well documented (Entwistle et al., 2002; Salmon, 2003; Conole et al., 2006). For example Salmon's model incorporating the swimmers, the divers and the drowners was certainly applicable to this study. Participation in CMC is as previously noted (Salmon, 2003 and 2007) not to everyone's taste or inclination. On such a small sample size and considering the difficulties encountered it is very difficult to discern a preference for a preferred learning style or strategy. The coping or course management strategies adopted by the participants were more evident in this study than the learning strategies. The sense of community building was evident in the levels of mutual support provided but it would be stretching the point to much at this stage to claim that this strategy was a learning strategy except in the broadest sense.

What coping/management strategies do adult e-learners display and/or utilise?

It is no great surprise that participants utilised the VLE in a variety of ways not all of them envisaged by the design team. The utilisation of mobile phones was certainly a far bigger factor than envisaged. Arguably it developed as a response to the difficulties already discussed at length. However, it could also be argued that their use was a proactive choice rather than characterising it as a purely reactive strategy. In the context of how the participants utilised mobile phones Sharpe et al. (2005, p. 4) advise that in order "to see e-learning from the learner's viewpoint, we must see technology in the broadest possible sense including perhaps the mobile phone, e-mail, instant messaging

and PDAs". Understanding the adult learners' perspective requires the adoption of a holistic view to understanding the totality of the learners lives (Sharpe et al. 2005). The manner that the participants generally used the VLE could be characterised by the term adaptation. This adaptation should be viewed in positive terms, the use of mobile technology, online libraries and electronic libraries certainly demonstrated a willingness on the part of many of the participants to engage with technologies that they found useful.

The efficacious characteristics of an adult learning programme using a VLE?

Deciding what constitutes a successful adult distance learning programme is fraught with the difficulty of deciding what constitutes success. However, if one adopts a position that completion of a sustained (in this case three years) course of education constitutes a success it could be argued that with a completion rate of 80% then yes in this case it was a successful programme. If the success is defined in terms of the programme operating smoothly for the participants then the answer would be less endorsing. Successful effective blended learning is primarily about the people, not about the technology (Kenny, 2006). From the findings from the over-arching theme of planning and governance certainly give an indication of the efficacious characteristics: (i) a shared understanding by all parties responsible for delivery and support about their roles and their mission (ii) a realistic appraisal of the resources available to the provider prior to and during the programme and (iii) a mechanism that facilitates change or modification to the programme if the resources become compromised or there is a change in external or internal circumstances.

Key Points Revisited

Returning to the primary question it is clear from this and preceding chapters that this question is best answered by acknowledging the influence exerted by the two polemic positions discussed at length in chapter two that influence adult and lifelong learning – manageralist/functionalist and the humanist transformative approach. As such each position regards the role of education and in this case VLEs in a different manner. The roles of the learners, the teacher and the provider will all be altered to some degree by adoption of either position. Fisher (2006, p. 157) commenting on the level of debate in Ireland about the role of higher education stated that "outside of the economic benefits of higher education there is less debate as to what is meant by 'public good". The learners who participated in the OEL course certainly engaged in a protracted accredited educational experience as adults, in this sense they engaged in a sustained learning activity.

The debate regarding the underpinning philosophy of lifelong learning and the resulting impact on e-learning has been characterised in rather polemic terms – functionalist or humanist, training or education , transaction or transformation? It is important to acknowledge that for some adult learners this debate may be of little consequence. In the case of the OEL learners they utilised the VLE with varying degrees of expertise, enthusiasm and ability as part of their BA programme. What is apparent from the learners is that at times they adopted a very pragmatic functionalist approach to the OEL programme. At a micro level for some of the learners it was a very reductionist endeavour, however at a macro level the act of undertaking the course with all that it entailed including using the VLE the overall result had a more transformative effect where they displayed resourcefulness and adaptability. The key point is that (by and

large) they took personal responsibility for the use of the VLE; in many ways it could be argued that they succeed and developed as learners because of the technical difficulties.

The Future?

Since the Irish economy officially entered a recession in late 2008, the provision of all public services (including education) was curtailed. The provision of adult and continuing education has historically been under-funded; therefore such a financial curtailment may result in rolling back many of the gains made in the last ten years. Ms. Berni Brady, the Director of the National Association of Adult Education (AONTAS) in urging the Irish Government to honour its commitment to continuing learning argued:

> During that time [the 1980s] the adult and community education sector experienced huge cutbacks in funding. Economic prosperity led to a small increase in resources for the sector, but we are still picking up the pieces from that time ... Funding for the adult education sector currently stands at just under 2% of the overall annual education budget.(Brady, 2008: Internet)

A rolling back in the levels of funding may end up with calls for greater accountability and value for money. These calls may result in a more focussed and functionalist discourse regarding adult education where the emphasis is placed on meeting the needs of the economy rather than the needs of the individual learner. As has been previously shown there is an ongoing debate between policy makers, learners and educators regarding the degree to which adult education should provide a vehicle for personal empowerment and development as opposed to meeting the needs of society in general and the economy in particular. This debate is significant because, whatever underpinning rationale of education dominates the debate has far reaching implications in terms of levels of funding, governance and general support.

Moving to a 'knowledge economy' demands the provision of more learning facilities and opportunities (A-Bard, 2005), however, as previously noted by Conboy (2002) those with

the lowest level of qualifications are least likely to engage in further education or training. The rolling back of adult education as a social right may result in a greater emphasis being placed on individuals to fund and take greater responsibility for their own learning. "This may work for the well educated and professional, who have been successful in the educational system" (Tight, 2000, p.42), for those who have poor experiences of previous education this rolling back of may simply compound their level of social exclusion. VLEs potentially offer learners a very useful learning environment. For the adult learner, particularly for those who study at a distance they afford an opportunity to participate in meaningful learning opportunities. However, the unquestioning and uncritical modernist belief in technological advances serves nobody, least of all the very people that are supposed to benefit from the democratisation of education.

Recommendations

- It is clear that technical issues such as broadband connectivity can impact on pedagogical considerations. Given the current economic climate the expected provision of nationwide comprehensive broadband coverage (as of September 2009) would seem to have run into a resource and funding cul-de-sac at least in the short to medium term. For those charged with delivering e-learning in rural areas where broadband coverage is sporadic or non-existent the possibilities offered by m-learning are certainly worth considering. The example of the Dunia Moja project in Africa demonstrated the possibilities the innovative use of mobile phone technology can offer. VLEs should not be considered just in terms of computers; the virtual in VLE can and should refer to any technology that enables a meaningful remote learning environment. M-learning in this instance offered the possibility of regaining some of the pedagogical possibilities that VLEs can present. Hence education providers utilising VLEs as part of their delivery strategy should always investigate at the initial planning stage a possible role for m-learning as an integrated component of the overall VLE experience.
- In relation to planning and governance one of the findings that certainly emerged was the use and importance of involvement at the planning stage and the incorporation of library services. The close involvement of library staff at the planning and implementation phases of a course can enhance the learning environment and experience for lecturers and students alike. The concept of embedded librarian as outlined previously by Dinwiddie (2005) where library staff would be a central member of the course delivery team would certainly merit a strong recommendation.

- All studies are to a greater or lesser extent incomplete. Although carried out over a period of two years this case study was quite limited in its focus. From an interpretative research perspective the aim was of course to give the participants a voice. The exploratory nature of a small case study was never intended to produce generalisable results. However, taken in conjunction with other similar case studies carried out in other colleges could certainly help to inform the utilisation of VLEs in blended distance courses by adult learners. Consequently, another recommendation would be to encourage other educational researchers in other Irish third level institutes to undertake a series of case studies with a view to building up a more detailed picture of the ways that adult distance learners use VLEs with a view to improving practice.
- The provision of IT support services is another important issue in relation to planning and governance but also it is about acknowledging the specific needs that the adult off-campus learner present. As highlighted in chapter two the provision of IT and VLE support services to lecturing staff and students varies from institute to institute with no clear line of responsibility within many colleges. While many colleges possess some form of VLE (Cosgrave, 2008) there appears to be a clear lack of uniformity regarding the provision of VLE support. For on-campus students this can create some problems, for those who principally rely on a VLE this can present a major problem if they need support. Colleges utilising VLEs for off campus learners should provide dedicated VLE support personnel who can be contacted outside of the standard working week timeslots.

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Information Communication Skills Questionnaire
OEL Programme

Name: _____

Work Location: _____

Contact Number: _____

Please Answer All Questions

Please indicate your level of knowledge with the following applications:

	None	Beginner	Intermediate	Expert
Microsoft Word				
Microsoft Excel				
Microsoft PowerPoint				

Use of Internet

Can you?	YES	NO
Use an Internet search engine (such as Yahoo or Google)		
Can you retrieve articles from the Internet and save them		
Can you send and receive e-mails		
Can you send and receive e-mail attachments		
Have you participated in an online discussion		

Comments:

_____

_____

_____

_____

_____

_____

Appendix B

D.Ed. Research

Participant Diary Instructions

The aim of this diary is to explore and understand how you use and manage the WebCT Virtual Learning Environment, particularly in the context of balancing the work, social, family and study elements of your life. Your participation is greatly appreciated, without your input it would be impossible to complete this study. Furthermore the results of this study will hopefully be utilised to advance our understanding of how lifelong learners utilise and manage e-learning and in turn be used to improve the quality and nature of the e-learning experience for future lifelong learners.

Completing the Diary:

The aim of any research is to present as complete a picture as possible, hence the need for as much completed diary data as possible. Where possible the diary should be completed as near as possible to the time after you have used the Internet. In reality this may be at night or even the next day, however it would be appreciated if the diary were completed within 24 hours of using the system. The retrospective entry is only used to indicate where diary entry is more than 24 hours after using the Internet. In this case enter today's date on the left hand side and the date to which you are referring to on the right hand side. The important thing is to put an entry into the diary even if you have left it for a day or two.

Section A

This section simply requires you to put a tick in the appropriate box or leave blank if you have not accessed a particular module or activity.

Section B

Some of the activities may not be directly guided by the course team such as having to access course material or log on to a discussion board. Nonetheless you may use the Internet for course related activities, for example you may use the Internet to research a forthcoming essay or use the college's online library. Other topics might include accessing the college's examinations office, study skills.

Sections C, D and E

These sections are interested how and where you accessed the Internet. Some of you may access the Internet more than once in a 24 hour period, therefore these three sections allow for up to three separate sessions; however you are only required to complete one diary entry for a 24 hour period.

The time segment of section C should be completed as accurately as possible, however, if you cannot supply the exact timing then a best guess is acceptable.

Section F

This section is intended to investigate the contact, type and nature of the communications that were used. The subject section could include: query regarding assignment submission, permission sought for assignment extension, asking to clarify a topic etc.

The study is also interested if communicate about the course but do not use the Internet. For example you may contact a classmate by text to alert them of new material or query some element of the course. In this example, if this was your only activity for the day you simply need to complete this section only.

Section G

This section allows you to write in an unstructured manner picking whatever topics you choose. Points could include: difficulties in connection, instructions or material that was easy or difficult to follow, time constraints that impacted on your ability to satisfactorily use the system. You may have spent some time searching for resources on the Internet or using the online library, please indicate your experiences. If you feel that there is nothing of note that you wish to convey that is also acceptable.

Section H

I realise that sometimes you may not get a chance to log onto the system. Nonetheless it is still very important to gather data even where there is apparently no data. Where you have not used the system in the previous seven days it is important to complete section H anything which precluded you from using the

system is very important information. It would be helpful if the information that you supply indicates a degree of detail. For example rather than simply saying that you were too busy with work; a little bit of detail such as unit short staffed, covering for holidays and so on.

Initials: _____

D.Ed. Research – O-*E*L Participant Diary Entry Sheet

Today's Date: _____ **Time Completing Entry:** _____ **Retrospective Entry (Date Accessed)** _____

Section A: **Activities Engaged In: (Please Tick Where Appropriate)**

Module/s	Course Notes Obtained	Participated in Live Online Tutorial	Checked Discussion Board	Posted Comment on Discussion Board	Followed Web Link	Checked E-mail
Sociology						
Social Policy						
Legal Studies						
Health & Leisure						
Psychology						
Communications						

Section B

Module/s	Other Related Activities
Sociology	
Social Policy	
Legal Studies	
Health & Leisure	
Psychology	
Communications	
Other Topics	

Section C

Time/s		Where Logged On	Connection (Please Tick)	
Logged On	Logged Off		Dial-Up	Broadband

Appendix C

Section D

Were Session/s?

1. **Before Commencing Work ☐ In Work ☐ After Work ☐ A Day Off ☐**
2. **Before Commencing Work ☐ In Work ☐ After Work ☐ A Day Off ☐**
3. **Before Commencing Work ☐ In Work ☐ After Work ☐ A Day Off ☐**

Section E

Were you generally?

1. **Free to work without disturbance ☐ Some Minor Disturbance/s ☐ Erratic work due to many disturbances ☐**
2. **Free to work without disturbance ☐ Some Minor Disturbance/s ☐ Erratic work due to many disturbances ☐**
3. **Free to work without disturbance ☐ Some Minor Disturbance/s ☐ Erratic work due to many disturbances ☐**

Section F

Did you communicate with? Yes ☐ (please complete table below) No ☐ (Move onto section G)

With	Via				Subject
	E-Mail	Text	Phone	In Person	
Tutor					
Fellow Students					
Mentor					

Section G

Any overall comments, observations?

_____

_____

_____

_____

Section H – If you did not log onto the course website in the past seven days can you please indicate any difficulties or reasons?

_____

_____

_____

Initials: _____

D.Ed. Research – O-*E*L Participant Diary Entry Sheet 2008

Today's Date: _____ **Time Completing Entry:** _____ **Retrospective Entry (Date Accessed)** _____

Section A: Activities Engaged In: (Please Tick Where Appropriate)

Module/s	Course Notes Obtained	Participated in Live Online Tutorial	Checked Discussion Board	Posted Comment on Discussion Board	Followed Web Link	Checked E-mail
Skills Laboratory						
Legal Studies						
Psychology						
Leading & Managing						
Communications						

Section B

Module/s	Other Related Activities
Skills Laboratory	
Legal Studies	
Psychology	
Leading & Managing	
Communications	
Other Topics	
Other Topics	

Section C

Time/s		Where Logged On	Connection (Please Tick)	
Logged On	Logged Off		Dial-Up	Broadband

Appendix D

Section D

Were Session/s?

1. **Before Commencing Work ☐ In Work ☐ After Work ☐ A Day Off ☐**
2. **Before Commencing Work ☐ In Work ☐ After Work ☐ A Day Off ☐**
3. **Before Commencing Work ☐ In Work ☐ After Work ☐ A Day Off ☐**

Section E

Were you generally?

1. **Free to work without disturbance ☐ Some Minor Disturbance/s ☐ Erratic work due to many disturbances ☐**
2. **Free to work without disturbance ☐ Some Minor Disturbance/s ☐ Erratic work due to many disturbances ☐**
3. **Free to work without disturbance ☐ Some Minor Disturbance/s ☐ Erratic work due to many disturbances ☐**

Section F

Did you communicate with? Yes ☐ (please complete table below) No ☐ (Move onto section G)

With	Via				Subject
	E-Mail	Text	Phone	In Person	
Tutor					
Fellow Students					
Mentor					
Other					

Section G

Any overall comments, observations?

_____

_____

_____

_____

Section H – If you did not log onto the course website in the past seven days can you please indicate any difficulties or reasons?

_____

_____

_____

Preliminary Interview Schedule

Q1 Reasons for beginning the course

What was the primary motivation

Q2a At the start of the programme what were your hopes?

Q2b At the start of the programme what were your fears?

Q2c At the start of the programme what were your expectations?

Q3 Before starting the course what was your knowledge of ICT?

Did you have any qualifications and/or experienced?

Q4 How would you describe your experiences of last year?

Q5 Do you have any comments or observations that you would like to make regarding last year or the upcoming year?

Post Semester 1 - Interview Schedule

Although the actual wording of the questions would be modified to take account of individual differences the interviews would take the same basic structure.

The first questions would begin with a reference to the diary data these are some examples:

You only had four comments and about nine diaries, but you didn't seem to have any issues, at least nothing apparent from the diaries.

The dairies seemed to dry up a little towards the end in terms of comments but many thanks for submitting them. You seemed to have problems early on but what about after that?

---- it would seem from the diaries that connectivity and the new WebCT seemed to be the major issues for you would you say that is a fair summary?

I've been trying to put some shape on the data from the diaries; you seem to have had a few issues, mainly not being able to log on and no material would that be it?

The second questions would provide an opportunity to open up the discussion:

You've covered a lot there, is there anything else that you feel we haven't covered so far so?

Are there any other aspects that you would like to raise that you didn't comment on in the diaries or that you haven't mentioned yet?

Apart from those two topics I notice that you spent a lot of time on the internet, in fact you had the longest single time compared to anyone else; what sort of things would you be doing for that long?

If there was something else of notes mentioned in the diaries this would also be clarified:

There was a section on levels of disturbance; you had a few times where you ticked the higher levels of disturbance section, how much of a problem was that?

Post Semester 2 Interview Schedule

Although the actual wording of the questions would be modified to take account of individual differences the interviews would take the same basic structure.

The first questions would begin with a reference to the diary data these are some examples:

Just the one general comment entry about being a bit fed up with it all?

You had a good few diaries with only a few reporting problems or issues, would that be a fair summary of your experiences this year?

The same as last year, you seemed to have used the WebCT more than anyone else and you submitted more diaries than anyone else; although you seemed to have a few issues yourself?

Compared to some of the others you didn't seem to have too many problems with the WebCT and used it regularly, judging by the diaries. How would you describe your usage?

The second questions would provide an opportunity to open up the discussion:

Aside from what we've just talked about is there anything that we haven't talked about so far that you feel you want to say but wasn't really in the diaries?

The interviews finished with a general question inviting the participant to reflect on the overall experience of the three year programme:

Finally, are there any other comments regarding your overall experiences over the three years in general and the WebCT in particular?

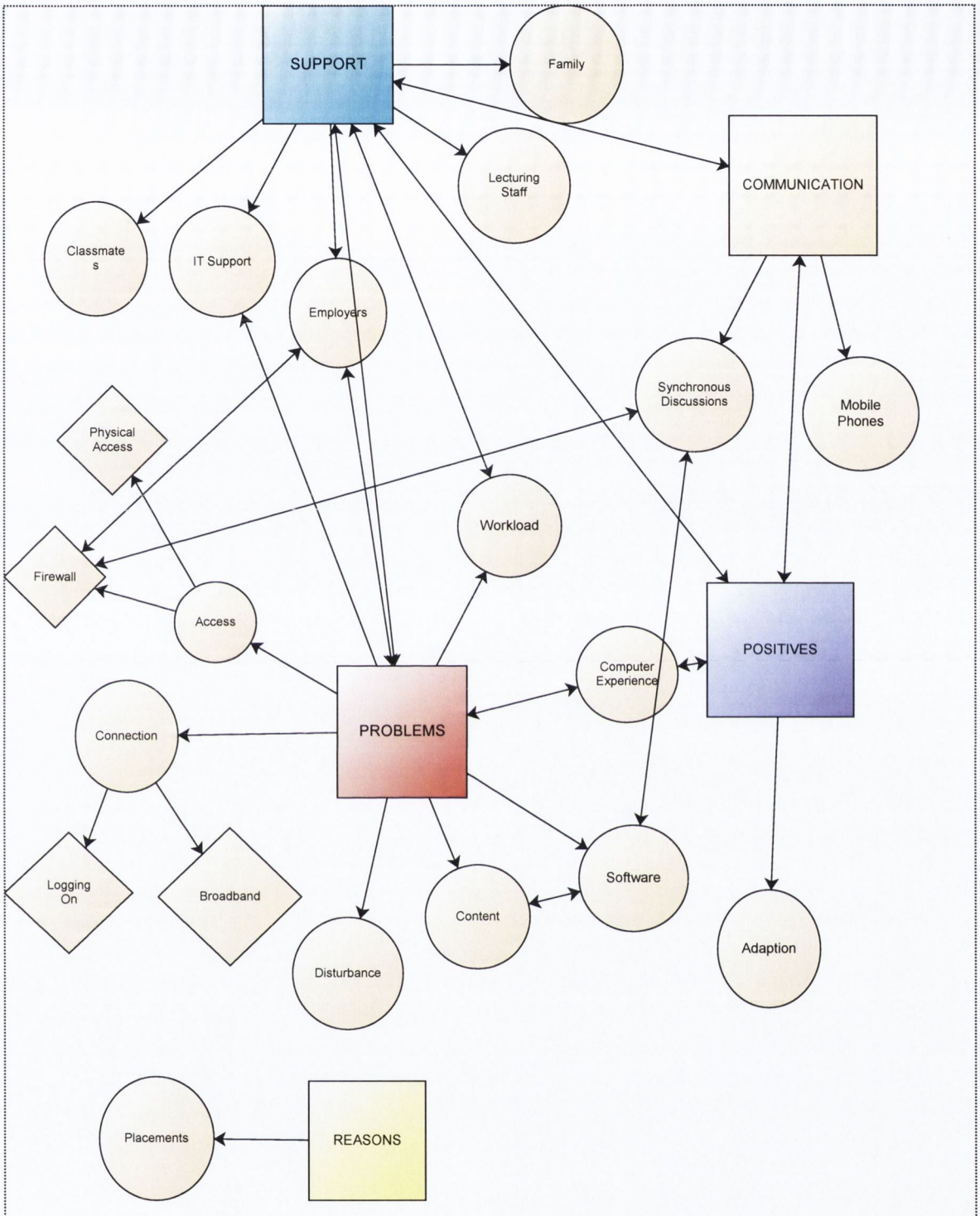
Free Nodes

Name	Sources	References
Access	3	3
Activities	16	24
Adaptation	10	16
Assignment Workload	12	18
Benefits of Course	3	5
Break from study	1	2
Break From Work	1	1
Broadband	25	40
Class Contact	6	7
Colleagues	3	3
Communication	17	26
Computer Experince-Quaif	18	23
Connectivity Issues	37	65
Content	5	8
Diary	24	27
Difficulties Encountered	18	24
Disturbance at home	4	5
EMail	13	19
Employer - Management	11	12
essay	1	1
Events	5	8
Family	23	37
Fatigue with...	6	13
Fear of ICT	3	4
Fellowship	3	3
Firewall	7	8
General Stress from combi	15	19
General Use	2	5
Hardware	7	12
Helping classmates	4	6
IT Support	7	9
Lecturer	11	15
Library	5	10
Live tutorial experiences	6	8
Logging On	9	11
Mobile Phones.Phones	9	9
New Placement Opportunit	5	5
Participation in Online Disc	16	24
Personal Fulfillment	6	9
Previous Academic Experi	6	7
Problems with specif page	3	3
Promotion or Career Adva	10	10
Reasons for Logging on	8	9
Reasons for not logging on	10	17
Reasons for starting cours	10	13

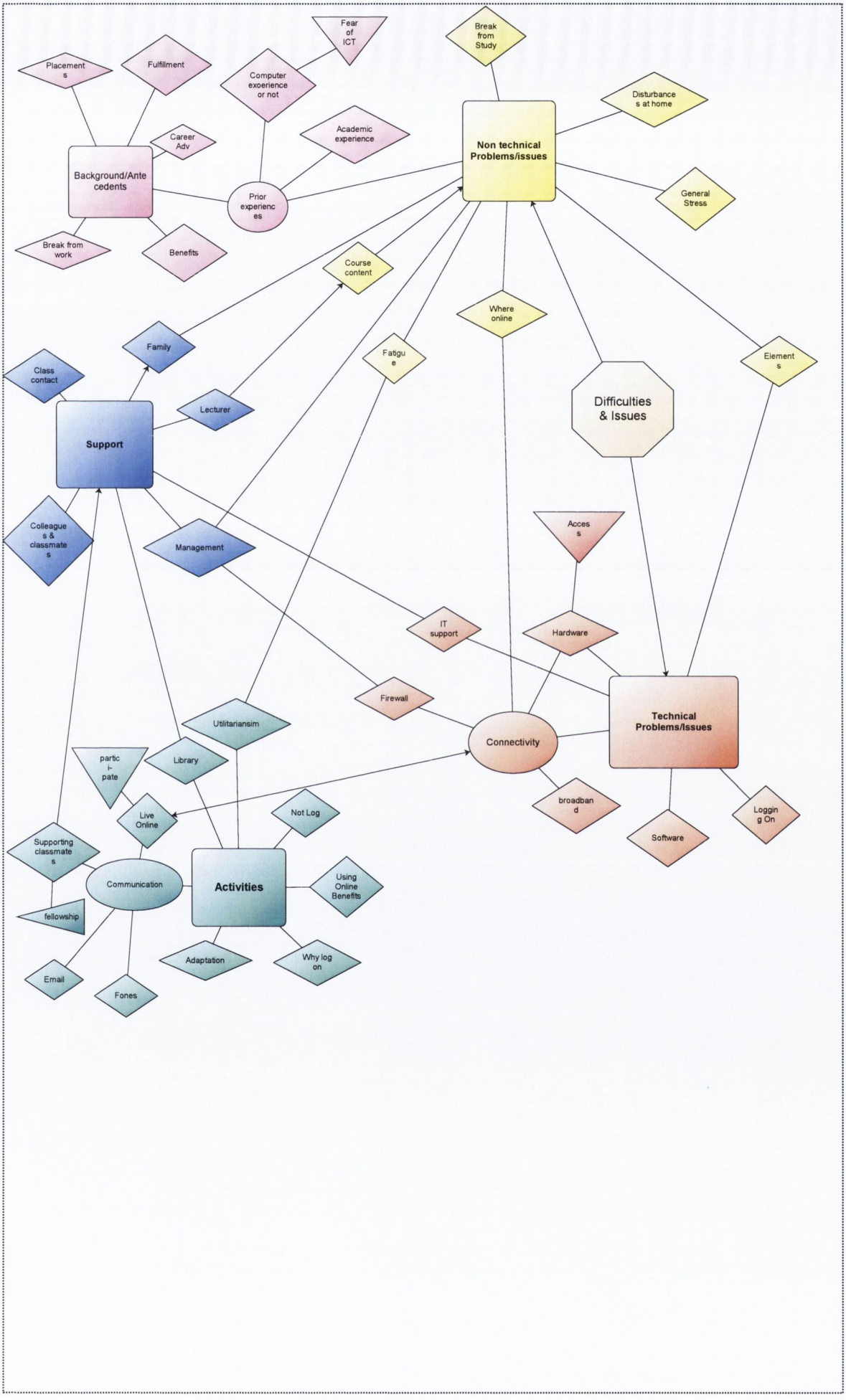
Free Nodes

Name	Sources	References
Released from work	4	4
Software	8	17
Support	22	30
Support from Lecturing Sta	6	7
Using Online Benefits	2	3
Utilitarianism	4	9
WebCT Content	23	38
Where online	10	13

Appendix I


SUPPORT
Family
COMMUNICATION
Lecturing Staff
Classmates
IT Support
Employers
Synchronous Discussions
Mobile Phones
Physical Access
Workload
Firewall
Access
POSITIVES
Computer Experience
PROBLEMS
Connection
Logging On
Broadband
Software
Content
Disturbance
Adaption
Placements
REASONS

Appendix J


Fear of ICT
Break from Study
Placements
Fulfillment
Computer exoerience or not
Disturbances at home
Career Adv
Academic experience
Non technical Problems/issues
Background/Antecedents
Prior experiences
General Stress
Break from work
Benefits
Course content
Where online
Family
Fatigue
Elements
Class contact
Difficulties & Issues
Lecturer
Support
Colleagues & classmates
Management
Access
IT support
Hardware
Firewall
Technical Problems/Issues
Utilitariansim
Connectivity
participate
Library
broadband
Logging On
Live Online
Not Log
Software
Supporting classmates
Communication
Activities
Using Online Benefits
fellowship
Adaptation
Why log on
Email
Fones



Co. Kerry
26-07-2006

Dear

Further to my conversations in class regarding participation in a case study for my Doctorate in Education, I am writing to you formally to provide an outline of the study and to obtain your consent to participate in my research.

I am currently undertaking a 4 year Doctorate in Education programme in Trinity College Dublin. My supervisor is Mr. Keith Johnston of the Education department, Trinity College (keith.johnston@tcd.ie). As part of this programme I am required to complete a thesis that provides original research and findings in the area of education.

I am very interested in the area of Lifelong & Adult Learning and the possibilities offered by Internet usage. Whilst there have been a number of studies undertaken that look at undergraduate study incorporating e-learning these have all involved full-time students. Therefore I am proposing to research a group of students who have to try and balance study, full-time work and their general life using an e-learning platform, in this case: WebCT.

In order to undertake this research I am proposing to carry out a study that incorporates qualitatitive and quantitative data sources – namely interviews, diaries and usage figures. What I am profoundly interested in is to try and understand (from your perspective) how lifelong work-based learners use (or don't use) the e-learning platform. In order to capture your perspective I am proposing two main research tolls: interviews and diaries. The interviews will take place prior to and after the academic learning block: Sept. 06-Dec. 06 and after the second academic learning block Jan. 08-May 08, there will be three interviews in all. These interviews will be recorded for ease of transcription afterwards. In addition to the interviews; and central to the research, I will need you to complete a number of diary entries over each block period.

As part of the first interview session (late August 06 or during the first week of September whilst you are in the college) I will provide an explanation and guidelines on diary entry and submission. I realise that I am asking you to undertake a bit of extra work in your already busy schedule and would fully understand if you do not wish to participate in the study. Please be assured that your participation or non-participation in the study in no way effects or impacts on your participation in the BA (Social Care) course.

Attached is a letter of consent, I would be obliged if you indicate your choice on participation or non-participation and return it to myself using the enclosed stamped addressed envelope.

Yours truly,

_____

Tom Farrelly

Appendix L

VIRTUAL LEARNING PLATFORMS & ADULT EDUCATION : A CASE STUDY

Doctoral Student: Mr. Tom Farrelly
Supervisor: Mr. Keith Johnston

Undertaking from Doctoral Student – Mr. Tom Farrelly

1. All computer based records will be maintained securely in compliance with the Data Protection Act (1988)
2. All non-computer records (such as tape recordings, transcripts) will be maintained securely and will not be available save to thesis supervisor/s
3. All records will be destroyed upon successful completion of the Doctorate
4. Confidentially and anonymity will be maintained. Respondents will be referred to by number and/or an alias.
5. Mr. Keith Johnston of Trinity College Dublin is available to you in the event of a complaint or query

Conditions of Consent:

1. I fully understand that my participation is voluntary
2. I fully understand that I can withdraw my participation at any time during the study
3. There are no inducements to participate
4. I am aware that my participation or non-participation has no effect on my study with the Institute of Technology, Tralee
5. I comprehend the undertakings from Mr. Tom Farrelly

I do **NOT** wish to participate in the aforementioned study □

Please Print Name: _____

Having read the conditions and undertaking from Mr. Tom Farrelly I agree to participate in the Adult Learning and Virtual Learning Platforms case study.

Name (Please Print): _____

Signature: _____ Date: _____

Address: _____

_____

Phone Number/s: _____ _____

Tutor

Legal studies

Re – WebCT

Start time of classes next week

Can't log on

Extension for essay next week

Couldn't download notes, won't work for me

Queries to tutors re subjects

Looking for feedback re an idea for essay

E-mailed ---- to see if he got my essay

Tutorial unavailable

Fellow Students

Law and sociology

All subjects in general

Legal, sociology, psychology

Discussed CA's with ----- and planned a study morning

Java download to access WebCT

Spoke with -------- about law essay titles and getting new books

Discussed with fellow students about the course

Research topics

Assistance to 'find' WebCT

Regarding downloading Java

The exams coming up

Arranged study day

Ideas and resources for assignment

Discussed assignments and college

WebCT in general and in awe of what I need to do

Next weeks test

Discussed Health and Leisure Journal

Arranged with ------ about staying in Tralee next week

Spoke to other students re assignments

Discussion – Social Policy

Forwarding info found on web

Course notes, discussion plus clarify some details

Organise lift for next week

Question re law assignment

Can't make class asked ---- if they can pick up any notes for me

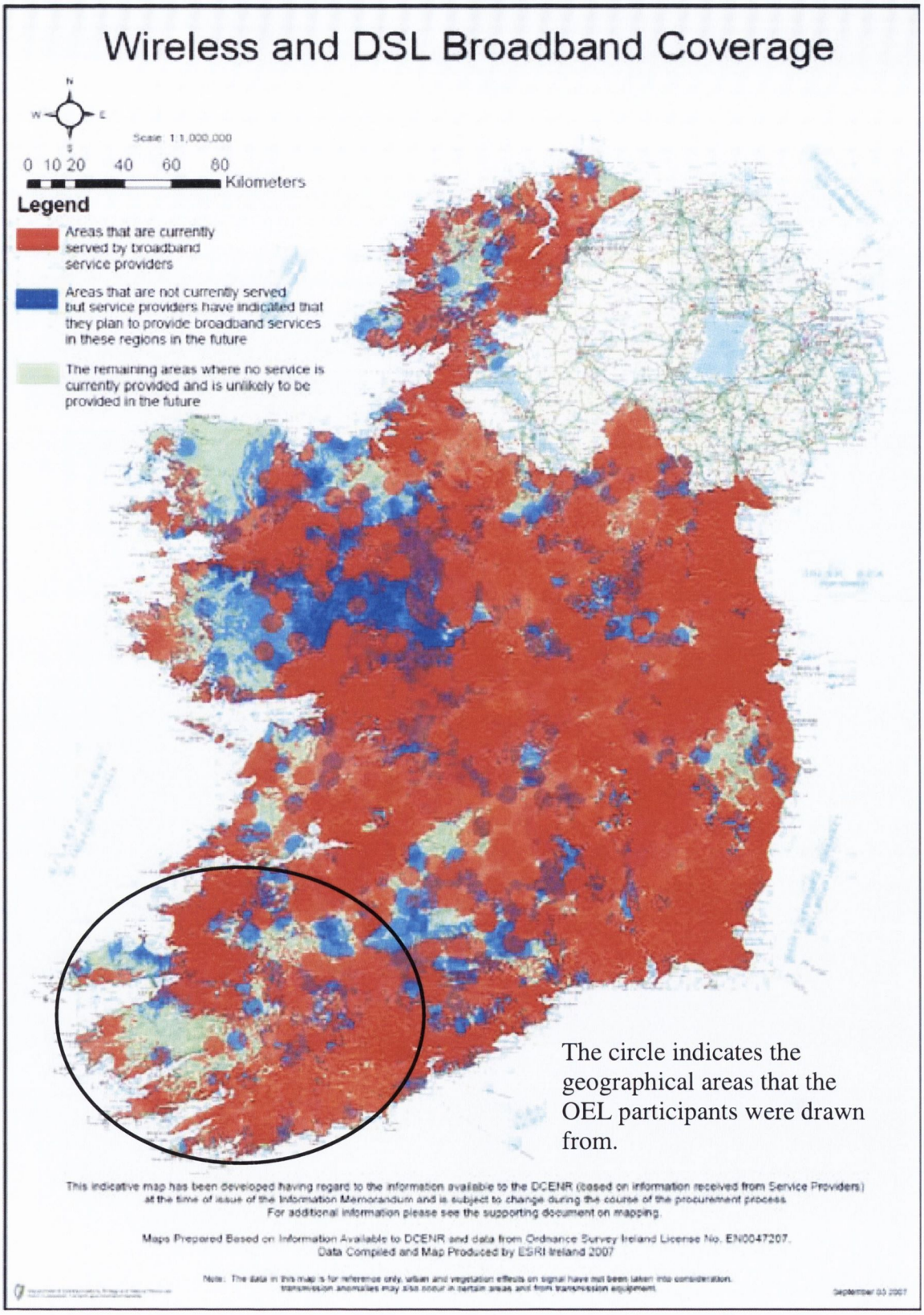
Mentor

Re – College in general

Getting fed up with course and work

Choosing law assignment and where to gather appropriate information

Appendix N


Wireless and DSL Broadband Coverage
N
W
E
S
Scale: 1:1,000,000
0 10 20 40 60 80
Kilometers
Legend
Areas that are currently served by broadband service providers
Areas that are not currently served but service providers have indicated that they plan to provide broadband services in these regions in the future
The remaining areas where no service is currently provided and is unlikely to be provided in the future
The circle indicates the geographical areas that the OEL participants were drawn from.
This indicative map has been developed having regard to the information available to the DCENR (based on information received from Service Providers) at the time of issue of the Information Memorandum and is subject to change during the course of the procurement process.
For additional information please see the supporting document on mapping.
Maps Prepared Based on Information Available to DCENR and data from Ordnance Survey Ireland License No. EN0047207.
Data Compiled and Map Produced by ESRI Ireland 2007
Note: The data in this map is for reference only, urban and vegetation effects on signal have not been taken into consideration.
transmission anomalies may also occur in certain areas and from transmission equipment.
September 03 2007