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AN INTEGRATED APPROACH TO E-LEARNING IMPLEMENTATION IN A COMPLEX HIGHER EDUCATION SETTING: A CASE STUDY OF THE UNIVERSITY OF THE WESTERN CAPE

by

JULIET STOLTENKAMP

A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE DOCTORAL DEGREE

in

INFORMATION SYSTEMS

in the

FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES

at the

UNIVERSITY OF THE WESTERN CAPE

SUPERVISOR: PROFESSOR LOUIS C.H. FOURIE

JUNE 2012

ACKNOWLEDGEMENTS

My sincere gratitude goes to my supervisor, Professor Louis Fourie, for his unreserved help, firmness where deviations occurred – as well as support and understanding at all times. My thanks also go to my language editor, Dr Patrick Goldstone for his expertise and valuable advice.

My sincere gratitude goes to my children, Razeen, Liam and Layla, for their support, patience and understanding in the midst of a heavy schedule. My sincere thanks to my husband, Rustum Adams for his love and support, in addition to the vital role he played in the end – by saving me from becoming a victim of my own study, and motivating me not to give up.

But most of all, I am grateful to God for his enabling grace and mercy. I wrote this thesis in the midst of establishing and heading an eLearning department, and taking care of my family. God is good and his mercies last forever!

This study is dedicated to my family who have been a powerful motivational force in my life. Last, but not least, to my late father, Julian Stoltenkamp. The mere thought of him has always inspired and motivated me, especially when I was tempted to give up. May his soul rest in peace, Inshallah.

KEY WORDS

eLearning: Electronic learning – also referred to previously as web-based and computer-based learning. eLearning in this study is also referred to as online learning

ePedagogy: The pedagogy of eLearning, namely ePedagogy includes the integration of curriculum and related ICT-supported teaching-and-learning practices

Learning management system (LMS): A 'platform' in which eLearning activities are conducted

eLearning marketing: An eLearning marketing strategy is one that is used to enable users to become knowledgeable of the benefits of eLearning

Organisational culture: An influential power in an institution, constituting members shared values, beliefs and behaviours

Communities of practice

Communities within an eLearning environment, which share knowledge and expertise, thereby assisting users to build on their knowledge and assist each other in a community of practice

Blended learning

A blended-learning approach ensures the integration of face-to-face and eLearning teaching practices

ABSTRACT

An integrated approach to eLearning implementation in a complex higher education setting: A case study of the University of the Western Cape

There has been a global transformation of higher education institutions (HEIs) in response to a wave of dynamic education sector reforms; specifically, this is related to the adoption of educational technologies to enhance teaching-and-learning practices, education management, research and administration. This situation has placed a strain on HEIs in South Africa and elsewhere, due to changing societal expectations, the inevitable integration of technology, and specifically eLearning into traditional interventions; and at the same time, the increasing pressure on practitioners to deliver quality education. Equally important, the question arises whether Information and Communication Technology (ICT) is indeed constructively impacting teaching-and-learning practices. Consequently, a need has arisen for ePedagogy training and support for academics and students within challenging, complex HE settings.

Within this context, the research has endeavoured to position the eLearning discourse within a global perspective; as well as to explore the theoretical underpinnings which impact the application of learning, and specifically eLearning. In particular, the merging of learning theories; different teaching and learning approaches, and technology that enables the creation of effective eLearning models and provides a more structured approach to the implementation of eLearning, were studied. Building on this theoretical basis, the importance and content of models within the discourse have highlighted the recent emphasis on the delivery of quality education.

The principal thrust of this research was, therefore, to highlight the main developmental phases towards the creation of an Integrated eLearning model to influence organisational cultural change in Higher Education Institutions. The research was built on an in-depth case study of a large HEI, namely: the University of the Western Cape (UWC), over the period September 2005 to October 2011. This explorative, longitudinal study was undertaken because of the numerous "unsuccessful" or "incomplete" eLearning implementations in developing countries, as well as the many challenges faced by academics. As a result, the study explored the factors that contribute to the successful implementation of eLearning within the empirical setting of UWC, a complex higher education environment.

This has been an accumulative exercise that started shortly before the establishment of the E-Learning Development and Support Unit (EDSU) and the 'eLearning Awareness Campaign' – reflecting on the deployment of a non-coercive approach to the implementation of eLearning and its impact on the organisational culture of the institution. The result was the development of an Online Course Creation model, which forms the core of phase 1 (September 2005 – December 2006) of the case study. Subsequently, phase 2 (January 2007 – August 2008) of the case study showcased gaps in the Online Course Creation model and emphasised that eLearning implementation in a complex higher education setting should go beyond the focus on ePedagogy with regard to effective online course creation.

Hence, this second phase of the case study involved the development of a revised eLearning model, the Inclusive ePedagogy model. Consequently, phase 3 (September 2008 – October 2011) of the case study highlighted the main developmental stages implemented in the creation of a final ***Integrated eLearning model****, and discussed how these integrated factors contribute to the implementation of eLearning, and ultimately, influence the organisational cultural change within UWC.*

Interaction with various stakeholders during the phases of the study included interviews and questionnaires. As a result thereof, the research reflected on the exponential growth of eLearning; improved attitudes and mindsets; strategic commitment for the infusion of technology and ePedagogy; and the institutional teaching and learning strategy. On the other hand, these results are in stark contrast to the lack of management in the development of the home-grown Open Source platform, coupled with intermittent access to internet connectivity. This shortcoming has often hindered online teaching and learning initiatives and support processes.

Furthermore, the research has indicated how educational technology has positively impacted on prevailing communities of practice, and has even led to sound practices, such as sharing online courses/modules within the institution and with the global community. The escalating numbers of students seeking eLearning training and support have been supported by blended eLearning approaches. These approaches reflect the importance of integrated curriculum design.

*Moreover, the presented Integrated eLearning model, shows that '****eLearning success****' can never be claimed, but is rather a process undergirded by a dedicated support team committed to continuous*

eLearning marketing, together with the review of processes within dynamic, complex higher education settings. Equally important, eLearning implementation within a HEI inherently impacts the organisational cultural changes. This is not just a once-off event, as it entails the difficult task of changing mindsets toward the use of new pedagogies, in order to supplement traditional instruction.

At the same time, considering people-development processes; as well as organisational issues, which include peoples' perceptions at different times of the eLearning continuum, is presented as various factors, which contribute to the successful implementation of eLearning.

The most important factors contributing to successful eLearning implementation, as established through the research, and also incorporated into the proposed Integrated eLearning Model are: the provision of holistic online activities; integrated institutional ICT infrastructure and systems; the support of educators and students; the necessary positive attitude by lecturers to take a hands-on role in the application of blended eLearning practices – aligned to research – and the contribution to the knowledge era; the importance of communities of practice within and outside the institution; the need for motivated formal leadership and educators to take ownership of the development of aligned, integrated curriculum strategies supportive of emergent educational technologies; continuous commitment to eLearning support, and quality-assurance processes; sustainable eLearning change management and marketing strategies; as well as crucial integrated professional leadership, management and support of the elements of the Integrated eLearning model.

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LIST OF ABBREVIATIONS

African Virtual Open Initiatives and Resources	AVOIR
Cape Peninsula University of Technology	CPUT
Centre for Student Support Services	CSSS
Centre for Teaching and Learning	CTL
Community and Health Services	CHS
Communities of Practice	COP
Customer-relationship management	CRM
Department of Public Service and Administration	DPSA
Digital-Academic Literacy	DAL
Economic and Managements Services	EMS
E-Learning Development and Support Unit	EDSU
E-Learning Maturity Model	eMM
Frequently Asked Question	FAQ
Free Libre Open-Source Software	FLOSS
Free and Software Innovation Unit	FSIU
Government-Information Officers' Council	GITOC
Hewlett Packard	HP
Higher Education Institutions	HEIs
Information and Communications Technology	ICT
Interpretive phenomenological analysis	IPA
Instructional-Systems Design	ISD
Instructional Design	ID
Information and Communication Services	ICS
Institutional Operational Plan	IOP
Kewl.NextGen	KNG
Learning Management Systems	LMS
Leadership, Academic and Student Ownership and Readiness	LASO
Massachusetts Institute of Technology	MIT
Marks Administration System	MAS

Multimedia Education Group	MEG
Multiple-Choice Question	MCQ
New Partnership for Africa's Development	NEPAD
Non-government Organisations	NGOs
Open-Educational Resource	OER
Organisation for Economic Co-operation and Development	OECD
Open Courseware	OCW
Standard Network Access Protocol	SNAP
Student Enrolment Management Unit	SEMU
Trouble-ticketing system	TTS
Teaching and Learning Technologies Unit	TLTU
Turnitin	Tii
University of the Western Cape	UWC
United Nations Educational Scientific and Cultural Organisation's	UNESCO
University of South Africa	UNISA
University of Cape Town	UCT
World Summit on the Information Society	WSIS
Zone of Proximal Development	ZPD

CHAPTER 1

INTRODUCTION AND BACKGROUND

1.1 Introduction and background

Higher Education Institutions (HEIs) globally, in Africa and specifically in South Africa, are not functioning and operating in silos. They are all affected by elements, such as "… *financial flows, technology transfers, information flows and the interpretation of business activities…*" (Houghton and Sheehan, 2000:6). These elements all have an impact on the application of knowledge and require thoughtful "*structural and qualitative changes*" (ibid) that will remodel the foundation – by maintaining the competitive edge. Hence, the witnessing over the past twenty years of a growing reception for the role of emerging, fast-changing Information and Communication Technology (ICT) in escalating economic opportunities – thereby, affecting countries all over the world, both in developed and in developing countries – in the way people live and work (Tilvawala, Myers and Andrade, 2009; Breitenbach, Aderibigbe and Muzungu, 2005; Williams, 2008; Kramer, Jenkins and Katz, 2007).

For example, Information and Communication Technologies (ICT) are seen as tools, which could support health care to disadvantaged communities (Mutume, 2003) or contribute to the elimination of poverty, hunger and inequality.

In the context of this study, it is strongly believed that ICTs can improve the education systems and support educator training (Stienen, 2007:6). Thus, an investment in Africa's education systems through initiatives, such as the New Partnership for Africa's Development (NEPAD) aims to enable 600 000 schools on the African continent to go online, while the National Research and Education Networks aim to set up a multi-gigabit academic fibre optic to support tertiary institutions (Gerster Consulting, 2008:11). Furthermore tertiary institutions play a major role in the pursuit of efficient internet access, to enhance "*information and communication flows*", which could further contribute to socio-economic development (Bon, 2007:123).

Consequently, the rapid development, progress and change of ICT has triggered a great deal of change and interest in government, civil society, the corporate world, and in higher education circles. ICT has altered the face of HEIs throughout the world. The ICT development has changed "*the very nature*" of Higher Education (HE) (Pollock and Cornford, 2000) through continually changing its values and curriculum in relation to the new ICT-based educational technologies (Provenzo, 1999:1), and by infiltrating the strategies and traditional teaching practices by supplementing face-to-face instruction (Murphy, Walker and Webb, 2001:2).

This has increased the number of students who need new innovative ways of dealing with the dissemination of information and knowledge (Sawyer, 2004:18), in order to accommodate the changing societal expectations of HEIs (Sife, Lwoga and Sanga, 2007).

These changes have seen an increased growth of eLearning practices (ICT-supported teaching and learning practices) in higher education. And this, in turn, has enhanced the status of tertiary institutions on a global scale – and more specifically in developing countries (Sife, Lwoga and Sanga, 2007). Many HEIs are now making use of eLearning for academic, support, administration and communication functions (Cronje and Murdoch, 2001). The increasingly diverse demands on HEIs compel the use thereof, namely: learner expectations and quality assurance (Jenkins and Hanson, 2003).

At the same time, a number of authors (Lautenbach and Van der Westhuizen, 2002:1; Van Der Westhuizen, Murdoch and De Bruin, 2004:337; Vovides, Sanchez-Alonso, Mitropoulou and Nickmans, 2007) see the eLearning paradigm as capable of supporting the flexible learning environment:

- It is able to reach learners in inaccessible areas;
- It can provide learning material, which caters for, and is customised to, learners' needs;
- It can support teaching-and-learning practices; and also
- It is able to enhance self-directed learning skills.

Additionally, institutions abroad and in South Africa have also implemented eLearning to support learning and to prepare students for a society that expects graduates to be able to perform under the circumstances of ever-changing challenges (Van der Westhuizen, 2004:157). Moreover, eLearning is

seen as a part of the solution to the challenges these institutions encounter. For example, this (i) influences institutional finances; (ii) it helps to fulfil the need to be recognised as institutions that are driving technological developments; (iii) it enhances the quality of education; (iv) it enables easy access to online resources and tutoring; (v) it adds to the continuing introspection and essential consideration towards the creation of knowledge; and (vi) it helps to attract a bigger pool of learners (Van der Westhuizen, Stoltenkamp and Lautenbach, 2002:1**;** Govender, 2004:45**;** Mitchell and Pienaar, 2004:67; Ngokha and Heydenrych, 2004:24; Wagner, Hassanein and Head, 2008:29).

Practice, however, shows that integrating eLearning with good pedagogical practices is not an easy task (Mason and Lefrere, 2003:259); and practice often challenges eLearning initiatives (Boyd and Fresen, 2004:5). This situation creates an inconsistency as regards the claims in the literature, by accentuating the far-reaching outcomes and possibilities and their actual effective implementation (Guri-Rosenblit, 2005:6; Beamish,Armistead,Watkinson and Armfield, 2002**:**118; IOMA, 2001:6; Organisation for Economic Co-operation and Development, 2005).

It follows that the situation has encouraged leaders in institutions and organisations to deliberate on how to optimally make use of the changes and the potential of educational technologies. Admittedly, eLearning in Africa is still in its early life and although there is evidence of diverse valuable eLearning practices, the eLearning training and design still seem to be the critical focus areas that are still demanding attention (Unwin, 2008). Universities still struggle to integrate ICT into their teaching-and-learning processes, while emphasising the importance of eLearning applications as being supportive of institutional pedagogical practices and the curriculum (Awidi, 2008:69).

As a result, HEIs are immersed in a "*perfect e-storm, linking pedagogy, technology, and learner needs*" (Kim and Bonk, 2006:22).

Consequently, among other themes, the pedagogy of eLearning, namely ePedagogy, has become a concern for ongoing research (Mehanna, 2004). Research on the integration of curriculum content and the related ePedagogy needs of ICT-supported teaching-and-learning practices is therefore critically

important (Nawaz and Kundi, 2010) and is the focus of this study which seeks to establish factors which impact on the implementation of eLearning.

The factors are further emphasised in the section below which highlights the truth that South African HEIs are expected to meet users' expectations of high quality face-to-face teaching integrated with pedagogically sound eLearning courses.

1.2 The problem statement

The paradigm shift of integrating ICT into teaching and learning practices has necessitated a review of traditional teaching methodologies. It has gradually given rise to a new pedagogy within HEIs. Consequently, a need has arisen for ePedagogy training and support for academics, incorporating quality eLearning practices and training (Stoltenkamp, Kies and Njenga, 2007). However, there are numerous other challenges in HEIs that pertain to the implementation of eLearning to enhance teaching-and-learning practices (Mapuva, 2009). Recurring challenges related to eLearning development on the African continent (including many parts of South Africa) include: (i) sustained educator training beyond the focus on ICT, as there is still a technology-driven focus; and (ii) a need for sound infrastructure (Hollow and ICWE, 2009:10).

These challenges have resulted in many HEIs making efforts to overcome the obstacles, with the University of the Western Cape (UWC), South Africa, establishing an eLearning Development and Support Unit, EDSU (Stoltenkamp and Kasuto, 2009). At the inception of the eLearning Development and Support Unit (EDSU) in 2005, an 'eLearning awareness campaign' was immediately initiated under the initiation and stewardship of the newly appointed eLearning, Manager. The institutional reality facing EDSU at such a time was that of marketing and driving eLearning within a resistant environment. For most academics at UWC in 2005, their resistance to the adoption of eLearning partly ensued from their association of the eLearning system with the Marks Administration System (MAS), which had been built into the eLearning system and which (from their perspective) had failed them in the past. The resistance to the adoption of eLearning by UWC academics was further aggravated by their resistance to the Open Source home-grown eLearning System (Stoltenkamp and Kasuto, 2009).

A paradox in eLearning adoption trends at UWC is demonstrated, on the one hand, by a number of academics who have changed their teaching methodologies by supplementing face-to-face instruction with the use of various eTools (communication, content creation and assessment). However, on the other hand, there are urgent calls for the abandonment of the home-grown institutional learning management system at UWC. Despite a progressive organisational cultural change initiative geared to the institutional adoption of eLearning (aligned to the eLearning strategy), the above problem has been compounded by the lack of sufficient ICT infrastructure, human capital and effective back-end support processes.

All the above-mentioned factors indicate that the eLearning challenges at UWC stem from the absence of an integrated eLearning model that could guide policies, strategies and practices in this field. As has been noted, accommodating and adaptable eLearning strategies are valuable frameworks within which to encourage innovation and to improve the pedagogical practices to promote effective eLearning. However, it should be noted that the same eLearning policies, strategies and practices could have different results in different higher educational institutions, even if they have similar cultural groups across their institutions. Thus, there is a need for deeper investigation into the elements regarding the effective use of ICT, in order to enhance teaching-and-learning practices (Czerniewicz and Brown, 2009:130).

From the above, it is evident that there is need for research on an integrated eLearning model that could inform eLearning (strategic) decision-making, policies and support processes. There is also need to encourage sound pedagogical approaches in the use of technology for teaching and learning (ePedagogy, as mentioned earlier) in higher education institutions in South Africa, and specifically at the University of the Western Cape, which is the empirical setting of this study.

1.3 Rationale and aim of the study

People who have been at the forefront of implementing eLearning include educational leaders, managers, policy-makers, educators, trainers and developers in organisations and HEIs. Many efforts to initiate ICT into the education sector have resulted in both positive and negative results. It is important that lessons learnt be continuously documented, to enable institutions to share risks and success stories and to create more awareness amongst policy-makers for future ICT implementation and development in the education

sector (Stienen, 2007:7-10). Moreover, there is a need for HEIs to take heed when applying extreme, impractical stances of "*rejectionism and boosterism*" to eLearning development, which should be preceded by thorough planning, and reflection on both the "*possibilities and the potential risks*" (Le Grange, 2004:96).

Furthermore, it should be highlighted that there is limited research in HEIs in South Africa that could assist in positioning the pedagogical guidance for eLearning. Effective eLearning in Higher Education (HE) should be guided by a pedagogy that aims to (i) improve student learning processes and outcomes; (ii) engage educators in creating meaningful learning material; (iii) prepare students for participation; and (iv) prepare educators for the mind shift from traditional to new ways of teaching and learning (Stoltenkamp, 2003:62;Mann, 2000:vii; Lilliam and Graciela, 2002:70; Samarawickrema, 2005:49; Macpherson, Homan and Wilkinson, 2005:44; Watkins, Leigh and Triner, 2004:1; Van Der Westhuizen, Murdoch and De Bruin, 2004:344).

A report on ICT and the South African Higher Education Landscape by Czerniewicz, Ravjee and Mlitwa (2006:21) emphasise the repeated critique about the dumping of content, which does not do justice to the interactive communication advantages of educational technologies. So, once an explanation of what good quality design is, then it would be possible to enhance the educational practices of those who use this technology (Kordel, 2008:12).

Despite the fact that there are challenges and barriers that limit the effective pedagogical use of eLearning, South African institutions as others globally, are facing rapidly changing end-user expectations (Lloyd, 2012). As relatively little research has been done on eLearning in HEI in South Africa (Czerniewicz, Ravjee and Mlitwa, 2006:38), references to educational technologies in various educational policies exist, but only in an *ad hoc* fashion. There currently is no definite educational technology policy or strategy that can position pedagogical guidance for eLearning in HE (Czerniewicz, Ravjee and Mlitwa 2006:28). The question, therefore, arises whether the effective pedagogical use of eLearning is actually happening in practice.

Nevertheless, educators are compelled to integrate ICTs into teaching-and-learning practices, while experiencing various difficulties, namely: "…*lack confidence, lack of competence, lack of access to resources …and effective professional development*" (Bingimlas, 2009:243). There is an acknowledgement that the prevalence of all these factors augments the effective integration of ICT into teaching-and-learning practices (Bingimlas, 2009:243). It is on this premise that the study proposed to explore the integrated factors which contribute to the application of sound and effective pedagogical approaches and blended eLearning practices. As shown in this research, these factors are, amongst other things, dependent on:

- The availability of suitable infrastructure;
- Appropriate front-end and back-end support structures; and
- Sound leadership and marketing, linked to aligned strategies and resources.

However, these factors prior to this study were not presented in any integrated way that could sufficiently help in addressing the eLearning challenges faced by UWC. Thus, this research aimed to explore and present a more integrated and structured approach to the implementation of eLearning at the University of the Western Cape. And this might also be useful to other similar HEIs in South Africa.

This research, therefore, proposes that, for the effective implementation of eLearning, HEIs will have to take cognisance of the complex higher educational domain and the various factors that contribute holistically to the implementation of eLearning. An *Integrated eLearning model* is presented that aims to guide policy-making, strategy and eLearning practice for users who wish to embark on eLearning initiatives. It could also help those who have already implemented eLearning to assess their progress and the quality of their eLearning initiatives and to deal with challenges that they encounter. Additionally, the model could be used to evaluate the organisational cultural changes that have been implemented within a higher educational setting for the adoption of eLearning practices. Importantly, the model incorporates certain factors, which could be used to measure successful implementation, such as: (i) eLearning blended practices; (ii) ePedagogy skills; (iii) exponential adoption of eLearning by academics; (iv) the availability and sustainability of appropriate resources; and (v) eLearning marketing strategies.

At the same time, emphasis is placed on significant factors that could be considered when implementing eLearning at universities in a developing country. It is envisaged that the resultant *Integrated eLearning model* would empower eLearning decision-makers and users to optimally use eLearning for the core business of the institution, namely: teaching-and-learning and research; as well as forming partnerships with other stakeholders and communities of practice. All of this, once implemented at UWC, would make the institution competitive in the knowledge society, which is currently based on the effective use of ICT.

The study deliberates on these factors, which are a direct result of the implementation of eLearning practices. These will be explained in greater detail in the case-study in Chapter 7, entitled, 'Phase 3: The development of an *Integrated eLearning model*'; as well as in Chapter 8, which is entitled: 'Discussion and interpretation of an *Integrated eLearning model*'.

In essence, this research aims to develop an *Integrated eLearning model* presenting causal issues relating to the need for the research; structural issues relating to the development of the model; and information relating to the useful interactions and cyclical nature of the modelled factors involved.

1.4 Research objectives

As discussed above, the main aim of this study is to establish the contributing factors to successful eLearning implementation in a complex higher education setting. In order to achieve this aim, it was necessary to fulfil the following objectives:

- To explore and apply relevant literature in order to determine the new demands of teaching supported by eLearning and to interpret these demands in the context of learning theories and global trends;
- To identify the factors which enhance or restrict the successful implementation of eLearning at UWC;
- To develop an integrated eLearning model for use at the University of the Western Cape;
- To present an integrated eLearning model for implementation at the University of the Western Cape and possible adoption by other higher education institutions.

1.5 Research questions

The study investigates the paradox of eLearning adoption trends at the University of the Western Cape from September 2005- October 2011, as well as the factors that contribute to an *Integrated eLearning Model* that could inform the eLearning strategy and decision-making of higher education institutions.
Within this context, the main research question of the study was formulated as follows:
What are the factors that contribute to the successful implementation of eLearning at the University of the Western Cape (UWC), and how could these factors be optimised?[1]

In order to answer the primary research question, it was necessary for the study to respond to the following sub-questions:

- To what extent do learning theories impact eLearning practices?
- How do global trends in eLearning impact its implementation in HEIs in developing countries?
- How can HEIs create enabling environments for the transformation of organisational culture reflecting blended eLearning practices and communities of practice?
- What are the factors which enhance and inhibit successful eLearning implementation in HEIs in general, and at UWC in particular?
- How can an integrated eLearning model provide a guide to HEIs for the development of oriented plans and strategies for educational technologies?

1.6 Methodology

It is generally accepted that there must be no room for uncertainty in explanatory research, such as the one presented in this thesis. The investigation should fulfil some of the "*criteria of logic rigour*" for diverse problems and circumstances, through procedures encapsulated within a research design (Bless, Smith and Kagee, 2006:71). Research design provides the glue that holds the research together; it provides the structure, which shows how all the major parts fit together; and it determines the optimal

[1] "Optimising" factors in the context of this study means managing these factors in a way that would produce benefits from eLearning practice. In other words, it means managing the identified eLearning factors by using a well-informed framework, such as the one (*Integrated eLearning model*) developed and presented in this study.

sampling and data-gathering methodology used to address the central research questions of the research project (Miles and Huberman, 1994:40). It further connects these issues to the analysis and the conclusions (Creswell, 1994:21).

In addition, it is important to choose a research design, which is "*valid, workable and manageable*" (Kumar, 2005:22), since the research design entails choices related to the topic, population, research methods and the rationale of the study (Babbie, 2008:120). The longitudinal study presented in this thesis consists predominantly of a qualitative research design. This, however, should not be viewed as an easy substitute for a quantitative study, but rather, as an appropriate tool for facilitating the exploration, comprehension and assessment of the context within which eLearning practices are being perceived and implemented at the University of the Western Cape.

The research design asserts that "*a variety of factors including the complexity of the social phenomena under study, the individual properties, the status acquired by the researcher…biases as well as reactivity effects prohibit a full replication of a qualitative study*" (Baumgarten, 2012: 12-13). To this end, the research design of this study consisted of interviews, questionnaires, and the analysis of internal documents – with the aim of developing an *Integrated eLearning Model,* which could guide and inform users and decision-makers when implementing eLearning – in a developing context - within a higher education institution.

Although this study predominantly entails qualitative research, the author has decided to utilise a blend of qualitative and quantitative research methods of data collection and analysis. In other words, the qualitative data collection and analysis is supported by some quantitative data. A qualitative research design yields valuable understanding of diverse social occurrences (Babbie, 2008: 313), involving the study of human action in a natural setting, through the eyes of the actors themselves, together with an emphasis on a detailed description within the appropriate context (Babbie and Mouton, 2001: 278); whilst the quantitative data are needed when a number, rate or proportion related to the target population must be assessed (Casley and Kumar, 1988).

The numerical (quantitative) data were derived from interviews, questionnaires and the ongoing data collection at UWC (for example, in the form of blog analyses); and these data were used to supplement the qualitative data. The quantitative and qualitative data were collected within the timeframe of September 2005 to October 2011, with a particular focus on the voluntary number of eLearning users (lecturers), who had received training from the eLearning support team, as well as the number of students who had received eLearning training on request, by lecturers who had adopted eLearning practices.

Furthermore, the quantitative measures reflected on the number of online courses developed within the Learning Management Systems (LMS) to support face-to-face teaching and learning practices, as well the number of lecturers making use of specific communication, content creation and assessment eTools (such as the discussion forum; blog; announcement; file manager; assignment; multiple choice question and workgroup eTools).

The data collection was conducted in three phases:

Phase 1 involved an extensive literature study related to eLearning implementation within HEIs. The literature review was threaded through various chapters of the study. The review included a focus on an eLearning awareness campaign within a higher educational setting; and the development of an *Online Course Creation Model*. Supporting quantitative statistics (or evidence) gathered from the direct influence of the non-coercive implementation approach was presented, in order to illustrate the number of lecturers who had voluntarily contacted the eLearning support team for training; the number of students trained; and the number of courses developed online during this period.

Phase 2 involved an email questionnaire, which was administered to a purposive sample of the following stakeholder groups:

- Academics at UWC, who had voluntarily enquired about and participated in eLearning training and the possible use of eTools of the Open Source eLearning system;
- Institutional leaders;
- eLearning support staff;
- eLearning experts; and
- Consultants at other higher educational institutions (HEIs) in South Africa.

Furthermore, this phase also included stakeholder group interviews with: (i) Institutional leaders; (ii) Information Technology (IT) support staff; and (iii) eLearning support staff at the institution. These participants were purposively selected, based on the significance of the role they play in the successful implementation of eLearning. The institutional eLearning Strategy document (currently the only existing strategy or policy document on eLearning at UWC), was used as a reference point for the data-collection process. Supporting quantitative statistics were also presented in this phase, to reinforce the qualitative evidence of eLearning implementation within the institution. Using the provisional model as a frame-of-reference, a revised *Infused ePedagogy Model* was developed.

Further interviews were conducted in ***Phase 3*** with a purposive sample of academics and students within the institution. The interviews were conducted both verbally and online, making use of a structured questionnaire in order to ascertain the extent of eLearning adoption amongst the campus community. Furthermore, as in the previous phases, supporting quantitative measures were also used. Eventually, these data led to the development of the final *Integrated eLearning Model*.

All the phases in the data collection and analysis were aimed at discovering the factors that support, or potentially hinder, eLearning theory and practice and finding the way of optimising these factors in an *Integrated eLearning model*.

1.7 Scope and limitations

The main objective of the study, given in the previous paragraph, was achieved by empirically focusing only on the University of the Western Cape, which imposes some limitations to this study's generalisation. Although the research, presented as a case-study, may provide valuable general insights with regard to the factors that contribute to the successful implementation of eLearning, the results cannot be generalised to all other Higher Education Institutions (HEIs) without some further research encompassing more of these institutions. The focus was primarily on academic staff (lecturers), leadership and eLearning support staff within the institution; and it also included the perspectives of students. It was presumed that this kind of participation would be valuable and crucial in meeting the objectives of this study.

Additional limitations of this research were imposed by the fact that undertaking a study in a complex higher education institution presents challenges, which may influence the results of the study in the following way:

- Unpredictable responses from some academics, who were not willing to participate in the study; and
- The research was conducted within an institutional culture, which reflects a history of resistance and lack of trust, especially towards the eLearning home-grown Open Source platform.

However, as the utmost effort was made to mitigate the identified limitations and to eliminate any possible biases, these limitations did not significantly influence the data collection, the analysis and the results of this research.

1.8 Ethics statement

It was the intention of the researcher to ensure that ethical consultations and deliberations were adhered to during the course of this study. Research participants were requested to participate in the study through an email letter or hard copy; and confirmation of participation was done in writing. Participation in the study was voluntary.

The participants were also requested to consent to having the interview audio-recorded for data-analytical purposes. The audio-recorded interviews were coded and stored in a protected facility. Participants were able to disengage from the study at any time, and the researcher undertook all possible means to ensure the privacy of the participants.

In this study, the researcher avoided leading questions that could influence the responses given; and she was also aware of the dangers of bias in the use of interviews. The researcher also ensured that all references were acknowledged.

1.9 Chapter outline

1.9.1 Chapter One: Introduction

This chapter includes an introduction to the study contextualising the case study in relation to changing societal expectations related to ICT and the growth of eLearning in higher education. It examines the eLearning-related factors within a higher education institution and the need for optimising those factors through a model, such as the *Integrated eLearning Model* presented in this thesis. The chapter states the rationale and the aims of the study; it presents the formulation of the research question; and it provides an overview of the empirical research design and the methodology.

1.9.2 Chapter Two: Learning theories and their impact on eLearning

Chapter Two provides the theoretical framework on which the rest of the study is built**.** The theoretical underpinnings that inform eLearning are explored, as well as how the merging of learning theories; different teaching and learning approaches and technology can enable the creation of effective eLearning models. The discussion endeavours to provide a more structured approach to the implementation of eLearning.

Every piece of research should be theory-grounded (Strauss and Corbin, 1990:33). Currently, the term 'theory' is continuously used by researchers to refer to the creation of theory or the provision of a framework for data analysis and understanding (Wu and Volker, 2009). The major strength of using theory is its specific approach to laying the groundwork for arguments, which support the notion that there should be a continuous interplay between data collection and analysis. This continuous interplay between data collection and analysis was implemented in this study.

For the purpose of this study, the theories explored are: behaviourism, cognitivism, social communal constructivism and emerging connectivism. The study also explores how these theories have impacted on the application of learning, and specifically on eLearning. Holmes and Gardner (2006:77), for example, maintain that eLearning has the potential to overcome some of the limitations of traditional learning, including, most importantly, the fixed times and locations of traditional learning.

The following eLearning models are, therefore, discussed in greater detail in this chapter:

- Sound instructional design principles to support the implementation of eLearning;
- Structured approaches to support interactive online environments;
- Knowledge-building and sharing in online communities of practice;
- Supporting and sustaining online environments;
- Supporting and sustaining blended-learning approaches;
- Management of ICT integration processes;
- Management of teaching processes to enhance effective use;
- Management of implementation processes; and
- Management within complex HEIs.

1.9.3 Chapter Three: Global eLearning trends in higher education

In Chapter Three the research seeks to put the eLearning discourse within a global perspective, and how this has impacted on technological developments within HEIs. Consequently, it is necessary to deliberate on eLearning in the global context of higher education (HE), with particular emphasis on the concepts of globalisation and the knowledge era; the changing higher educational context; and the global legislative framework of higher education institutions underpinning the creation of enabling ICT environments.

At the same time, eLearning is increasingly being used in HEIs globally, as well as in Africa. Moreover, in South Africa, HEIs are also being challenged to meet users' expectations of high-quality face-to-face contact integrated with online learning in line with global trends (Stoltenkamp and Kasuto, 2009). However, at the same time, questions arise as to whether a changing higher education context would be able to cope with the ever-changing demands of globalisation; and whether there is any emerging proof that ICT is indeed constructively impacting teaching and learning processes; especially in terms of how growing eLearning initiatives can contribute to the quality of higher education. Hence, the chapter discusses learning management systems (LMS), in relation to the adoption of learning management systems within higher education institutions in the Western Cape. It further reflects on the actual experiences in a higher education setting – where there is a strong sponsorship for open source systems.

1.9.4 Chapter Four: Empirical research design and methodology

This chapter identifies the empirical research design and methodologies that were used to collect and analyse the data for this longitudinal study. The study is explorative, in terms of exploring a rather unknown relatively new field of eLearning, namely: the implementation of eLearning initiatives in a higher educational institution (HEI) in a South African context, with a strong stakeholder sponsorship for a home-grown Open Source eLearning system.

The empirical research design incorporated a case study of the University of the Western Cape, a HEI in a developing country. A mixed-methods approach, or methodological triangulation, was applied to the study to minimise any personal bias and subjectivity, and to improve the quality of the data. Purposive and random sampling procedures were used to identify the requisite participants for the study. Interpretative phenomenological analysis (IPA) was used to analyse and interpret data, as "*the main currency for IPA is the meanings that particular experiences, events and states hold for participants*" (Smith and Eatough, 2008:36)

The chapter further describes the data collection in three phases: from September 2005 to October 2011. This involved an extensive literature review related to the implementation of eLearning within HEIs, with a specific focus on an awareness campaign within the University of the Western Cape; an email questionnaire; stakeholder interviews; and the analysis of the institutional eLearning strategy document. Furthermore, the quantitative data (or evidence) gathered on the direct influence of the implementation approach is presented to illustrate the result of the progressive non-coercive awareness campaign. The quantitative data are also used here to support the qualitative evidence for the success of the implementation approach.

1.9.5 Chapter Five: The University of the Western Cape case study: Adopting a non-coercive eLearning implementation approach to learning (September 2005- December 2006)

This first phase of the case study highlighted how a non-coercive approach can be deployed to support the implementation of eLearning, and the impact this has on the organisational culture of the institution.

This necessitated the development of an *Online Course Creation model*, which forms the core of phase 1 of the case study.

The chapter reports on an implementation approach to eLearning within the University of the Western Cape (UWC), with a special focus on some of the challenges that the institution has encountered and continues to encounter in the transition between a pioneering phase (where a small number of educators are introducing eLearning) and the institutionalisation of eLearning (where it becomes an integral part of teaching and learning throughout the university).

The chapter discusses the establishment of the eLearning Development and Support Unit (EDSU) at UWC, as an illustration of organisational change to support eLearning across a university characterised by limited resources and an insufficiency of human capacity.

Chapter Five briefly reflects on the situation prior to the inception of the eLearning Development and Support Unit (EDSU) at the institution. The different focus areas of change: the management and communication strategies of an 'Awareness Campaign' are presented within a resistant, complex environment. The quantitative data gathered on the direct influence of the marketing and implementation approach are presented here to illustrate the results of the progressive non-coercive awareness campaign. Moreover, this chapter highlights the fact that the success of the implementation approach is not only measured through quantitative statistics, but also through the ever-growing recognition of an eLearning support team, as an important role-player in the core business of the institution, namely: teaching and learning, as well as research.

1.9.6 Chapter Six: University of the Western Cape case study: Implementation beyond the focus of ePedagogy (January 2007- August 2008)

The development of an *eLearning model: Online course creation* opened up gaps, which showed that eLearning implementation in a complex higher education domain, in a developing country goes beyond merely focusing on ePedagogy as applied to effective online course creation. Hence, this phase of the case study involves the development of a revised eLearning model, which is an improvement on the initial eLearning model. A revised *Inclusive ePedagogy model* is developed in Chapter Six based on the

processes of the development of an eLearning model deliberated in phase 1 and the further data-collection processes utilised during this phase. Qualitative data retrieved from an email survey; stakeholder interviews; and data retrieved from the eLearning Strategy document were all used.

1.9.7 Chapter Seven: University of the Western Cape case study: Indications of a changing organisational culture (September 2008-October 2011)

Chapter Seven seeks to highlight the main developmental stages implemented in the creation of a final *Integrated eLearning model*, and how these have influenced the organisational cultural change within UWC for the period September 2008 – October 2011. This phase of the case study is based on the findings of the previous chapter, as well as on the development of a revised *Inclusive ePedagogy model*. A blend of methodologies and theoretical considerations was employed in this chapter, which further reflected on the attitudinal changes among the respondents. The data were mainly gathered through interviews and the administration of questionnaires.

1.9.8 Chapter Eight: The presentation and interpretation of an integrated eLearning model

This chapter presents the significant factors that should be considered when employing eLearning at a university in a developing country. The researcher employs interpretative phenomenological analysis (IPA) to analyse and interpret data. It is envisaged that the resultant *Integrated eLearning model* would enable eLearning decision-makers and users to optimally implement eLearning for the core business of the institution, namely: teaching and learning; research and community outreach. The development of a revised *Inclusive ePedagogy model* (phase 2 of the case study) further emphasised the gaps that led to the development of an *Integrated eLearning model* in phase 3.

The integrated eLearning model highlights the integrated factors that contribute to the implementation of eLearning in a complex higher educational environment.

The chapter brings together themes drawn from the participants during phases 2 and 3 of the case study and provides the current trends in eLearning practices within the institution. These trends also correspond with the literature review and the quantitative data obtained from the study. The chapter also reflects on

the cumulative supporting quantitative results of lecturer and student training, as well as the number of online courses for the period September 2005- October 2011. Finally, the chapter presents and interprets the final *Integrated eLearning model*.

1.9.9 Chapter Nine: Conclusion and recommendations

Conclusions were drawn from the results to provide a logical ending to the longitudinal study undertaken at the University of the Western Cape from September 2005-February 2011, after it was realised that there are many challenges facing lecturers when implementing eLearning practices. The case study enabled the researcher to formulate theory by exploring the factors that contribute to the successful implementation of eLearning within a higher educational institution, as well as the development of an eLearning model.

The chapter concludes by reflecting on the achieved objectives of the study as regards the establishment of the factors, which contribute to the successful implementation of eLearning within a higher educational setting. Moreover, it highlights the fact that organisational cultural change within a complex higher education institution is a continuous process that does not happen overnight.

Chapter Nine also discusses the limitations of the research; and it provides recommendations for further research. Furthermore, it points out that the study has incited and opened up a number of areas for possible future debate.

CHAPTER 2

LEARNING THEORIES AND THEIR IMPACT ON E-LEARNING

2.1 Introduction

The previous chapter gave an introductory road map to the study. Guidelines and methodologies employed in the study – to collect information from respondents and experts – also formed part of Chapter One. Building on the introduction, this chapter provides a theoretical framework as well as discussing the existing empirical studies, on which the study will be based. Both Chapters 2 and 3 will be found to respond to the research objective, which reads:

To explore and apply relevant literature, in order to determine the new demands of teaching supported by eLearning in relation to the learning theories and global trends.

The relationship between research and these theories is twofold. Research helps to enhance comprehension and seeks to expand theoretical knowledge (Reeves, Albert, Kuper and Hodges (2008). At the same time, the use of theory in research is important, as it has an effect on the research design and it reinforces the methodology (Kelly, 2009). It directs the research process; it facilitates the design of the research question; it directs the choice and understanding of relevant data; it clarifies the findings and recommends details related to reasons and influences (Reeves, Albert, Kuper and Hodges, 2008:631).

Furthermore, even though meaningful understanding of real-life occurrences cannot always be underpinned by theory, the importance of the use of theory in the literature review is unquestionable (Tavallaei and Talib, 2010). It is equally important that theory should fit within an appropriate context, thereby providing a "*lens by which the researcher discovers aspects of the target phenomenon*"; however, when interpretations fail to fit, the researcher has to develop the theory further (Wu and Volker, 2009: 2729).

Consequently, this research has included a theoretical framework as part of the study, as it seeks to identify the success factors and circumstances which influence or inhibit the successful attainment of the

educational goals. Among the theories that have been used in this study are: (i) Behaviourism; (ii) Piaget, Bruner and Vygotsky's Cognitivism; (iii) Constructivism and Socio-constructivism; (iv) as well as an emerging Connectivism, respectively. These theories seek to understand how human beings adapt to learning situations, and whether their levels of mental and physical growth, as well as external factors like their living environment, have any bearing on their ability to grasp the learning concepts.

Because of the infiltration of ICT into the strategies and traditional teaching practices, it is necessary to deliberate on the various theories of learning, which explore the behaviourist, cognitivist, and constructivist theories and their variants. The dynamic changes in education undoubtedly command the full attention of theorists from all education-related disciplines, as they attempt to inform strategies and policy-making by explaining and predicting the trends and developments in education (Salmon, 2004). Furthermore, it is crucial to study how these theorists have impacted online education delivery.

Equally important is the necessity to deliberate on the different eLearning models and their constructions, which inform the application of technology to teaching and learning. Moreover, as stated by Engelbrecht (2003), eLearning models provide constructive frameworks for the consideration of the blend of technology and pedagogy, and could possibly assist in ascertaining the crucial differences between the present and preferred relations regarding the implementation of any new teaching technology.

In addition, it is necessary to reflect on the encouragement of faculty to apply and integrate new online pedagogies into traditional teaching and learning practices, especially because of the residual uneasiness regarding the appropriate integration of these technologies into teaching and learning, as was highlighted by Duhaney and Duhaney (2000). At the same time, most of the institutions in developing countries are still in need of adequate resources to implement eLearning effectively (Guri-Rosenblit, 2005).

Unless emergent eLearning enterprises scrutinise promising pedagogical practices and techniques that may already be entrenched (Mason and Lefrere, 2003), eLearning will be considered merely as an add-on to key developments. Hence, it is necessary for this research to highlight the fact that although eLearning may be fundamentally technology-dependent, it is not devoid of the necessary theoretical underpinnings.

It has been argued that research should be theory-grounded, and as such, this study will now explore the theories of learning, as perceived by the various theories of Behaviourism, Cognitivism, Constructivism and Socio-constructivism, and an emerging Connectivism.

2.2 Exploring learning theories

In exploring the theories of eLearning, the study attempts to determine the extent of their alignment with the entire teaching and learning process. It is commonly acknowledged that theories set parameters along which all practices are grounded. Accordingly, this research (section 2.2.1 -2.2.4) will deliberate on the Behaviourist, Cognitivist, Constructivist, as well as the Connectivist theories, as they pertain to the creation of suitable teaching and learning environments; and specifically how they impact eLearning interventions. Furthermore, "*the concepts comprising e-Learning have emerged from a number of different traditions and fields, notably from education itself, as well as from psychology, computer science and sociology*" (Holmes and Gardner, 2006:77).

2.2.1 Behaviourism

The Behaviourist theory (also known as Behaviourism and the Stimulus-response Theory) was initiated by John B. Watson in 1913, mainly prompted by the Russian psychologist Ivan P. Pavlov during the early 1900s; and it progressed into the Radical Behaviourism of B.F. Skinner in 1959, in relation to usefulness and practicality (Shameem, 2010). The fundamental thrust of the behavioural school of thought is that "*…decisions follow outcomes, rather than the other way around…and that few actions are premeditated and few are the result of choosing one behaviour among a set of alternative possible courses of actions*" (March and Woodside, 2005:121). In addition, this school takes a position that with adequate repetition of an experience; and increasing reinforcement of behaviour, certain behaviours can be '*taught*' (Holmes et al., 2001:56).

Furthermore behaviour can be learned, unlearned and altered (Gornell, Janusz and Pate, 2007); and that the learning displays itself as a change in behaviour (Ashworth, Brennan, Egan, Hamilton and Sáenz, 2004). This frequently takes place via a response to positive reinforcements (Wortham, 2003). Hence, a

person's induced behaviour has become a focus of the behaviourists – and is demonstrated by Pavlov's (classical conditioning), Thorndike's (connectionism) and Skinner's (operant conditioning) in experiments with animals. Moreover, it is used to find out more about human behaviour (Holmes et al., 2001:56).

Accordingly, behaviourism and learning in humans are often studied in relation to the systemic application of well-defined principles like modelling, shaping, cueing, reinforcement, punishment, contracts and extinction (Gornell, Janusz and Pate, 2007). In addition, the Behaviourist theory is also partly rooted in an Associationist/Empiricist perspective; whereby focus areas can be analysed as definite associations, articulated as behavioural objectives; and then progresses further into the analysis of the complex coordination of tasks, themes and feedback – as the learner is promoted in sequence from less complex to more complex tasks – or demoted accordingly (Mayes and DeFreitas, 2004; Mödritscher, 2006: Khardon, 2004).

Behaviourism has been denounced as being too simple; and since it is associated with teacher-centred approaches, its strength can be ascribed to the educators' persistence in relation to skills development and training, computerised and programmed instruction, active learning with immediate learner critical feedback, the development of learning outcomes aligned with clear objectives, instructional strategies and assessment methodologies representing the current agreement on pedagogical practices in HE (Cbraziel *et al*., 2006; Mayes and DeFreitas, 2004; Ashworth, Brennan, Egan, Hamilton and Sáenz, 2004).

Turning to the application of ICT to teaching and learning, it has emerged that there are many benefits and rewards to be derived, as compared to the sole use of traditional means of information dissemination. Subsequently, eLearning has become an indispensable teaching and learning tool, and in this study the researcher intends to reflect on the extent to which its utilisation has enhanced literacy, competence and the general application of various eTools for teaching and learning purposes within higher education.

Modern debates on the applicability and relevance of the behaviourist school in these days of technological advancement have been that the behaviourist approach should be used sparingly, while accommodating the dynamic environments that have been brought about by eLearning, which is fast

changing the face and shape of teaching and learning within the globalised village (Mödritscher, 2006:15; Whitfield, 2012).

The influence of behaviourism in eLearning can often be seen in modern instructional design, and in particular in the organisation of learning into incremental, repeated teaching steps, and integrated constructive feedback. Generally, the behaviourists advocate a "*structured, deductive approach to designing an online course, so that basic concepts, skills, and factual information can rapidly be acquired by the learners*" (Mödritscher, 2006:5; Deubel, 2003). Further inferences for eLearning can be encapsulated by the notion of drill and practice, chunking material, assessing the levels of learners' achievements and constructive feedback.

Based on the behaviourists' argument, learners' repeated exposure to a learning situation can result in the reinforcement of a particular desired behaviour. Admittedly, educators continue to find the benefits of this theory, in relation to learning, due to the provision of the right blend of motivation, support and punishment (Shameem, 2010). However, many instructional designers have become less convinced with the results of the behaviourist approach, and have turned to other approaches (Allen, 2007:40).

2.2.2 Cognitivism

Cognitivism has been cited as the antithesis of behaviourism, since cognitivism "*focuses squarely on the mind and the learning processes of the brain*"; distinguishing between authentic understanding and merely producing the correct behaviour. Cognitivism thus rejects behaviourism on the basis of an oversimplification of complicated human behaviour: to simple cause and effect (Holmes and Gardner, 2006:82-83; Fritscher, 2011; Wortham, 2003). However, recently the two theories have merged into an all-inclusive cognitive-behavioural theory, which entails the descriptive study of how cognition acts as a critical determining factor in human behavioural patterns; as cognition refers to the processes of "*grasping knowledge,, remembering it, applying it, developing beliefs on it, reasoning and retaining it*" (Karthik, 2012).

Progressively, the social cognitive theory is a branch of cognitive theory, which emphasises the truth that behaviour is mainly learnt, focusing on how humans observe and model the behaviour of others and become knowledgeable contributors in their own environments (Fritscher, 2011; Flamand, 1999-2011; Wortham, 2003).

Accordingly, cognitivists take into account how memory works to support learning; especially as the processes of sorting and encoding are vital to educators (Nakalema, Kemeza, Kobusingye, Zami-Atibuni and Ndyareeba, 2010). The proponents of the cognitive school of thought include Piaget, Bruner and Vygotsky, amongst others, Piaget's strand of the cognitive theory is dominated and largely characterised by developmental stages, either in the readiness of learners to take on particular type of learning, or in the type of learning itself. Despite having left a mark in educational and pedagogical circles, Piaget's cognitive theory has been criticised in relation to individual learning styles and differences, including retardation – both physical and mental – and inflexible learning opportunities (Holmes and Gardner, 2006).

Vygotsky suggested that social interaction significantly affects cognitive development; and in contrast to Piaget, he highlighted the Zone of Proximal Development (ZPD), as the "*difference between what one can do alone and what one can do with assistance*"; hence, asserting that a "*life-long process of development was reliant on social interaction and that social learning actually leads to cognitive development*" (Riddle and Dabbagh, 1999:1). Recently, this ZPD concept has been receiving much attention, as currently society is experiencing many cultural changes, especially related to the infusion of ICT.

Thus, society is also asserting that societal and cognitive development is not disjointed (Riddle and Dabbagh, 1999:2). Vygotsky's theories emphasise important "*elements that would be beneficial in a dynamically changing classroom: social interaction among peers, engagement between students and teachers, meaningful instruction, incorporation of social and contextual elements into learning and more*" (Massman, Undated). Moreover, this ZPD concept involves support, acknowledges individual differences, and that individuals may entail various ZPD's for different disciplines (Lautenbach and Van der Westhuizen, 2005).

In addition, proponents of complex cognitive theory assert that the whole learning process is one of scaffolding and guidance (Holmes and Gardner, 2006); which provides a useful way for a learner to develop – however, with the necessary levels of support (Eddy, 2010). Hence, the educator (i) facilitates understanding; (ii) provides complex tasks to enable the learner to realise relationships between notions in a self-directed manner; and (iii) uses information appropriately (Nakalema, Kemeza, Kobusingye, Zami-Atibuni and Ndyareeba, 2010).

Furthermore, as cognitive psychology focuses on learners receiving and processing information, in order to transmit and store it via long-term memory, instructional designers have to consider the various facets of online learning; such as for example, the chunking of learning material and the support of various learning styles – including, higher levels of encouragement and teamwork (Mödritscher, 2006; Ally, 2004b). However, it is a very expensive and time-consuming undertaking for the designer, who has to ensure that suitable guidelines are developed for all skill levels and understandings, if learners do not have the necessary prerequisite knowledge on which to build (Mödritscher, 2006; Soller, 2001). Hence, because of the multifaceted, complex structure of cognitive theory, it is often not optimally implemented, and is criticised in relation to practical implementation and dynamic environments (Flamand, 1999-2011).

2.2.3 Constructivism and socio-constructivism

An underdeveloped argument maintains that constructivism has emerged from cognitivism. It ignores the important fact that it also slants toward behaviourism; and the position of the learner's situation. Hence, there is a growing appreciation of situated cognition, which slants towards the cognitive theory. As may be expected, a difference has emerged between cognitive constructivism (based on the work of Piaget) and socio-cultural constructivism (based on the Vygotskian approach) (Mayes and DeFreitas, 2004; Atherton, 2011).

In the past three decades, it has become evident that people do not merely gather data – without first dealing with it in a realistic manner - in order to add value. Learners do a great deal with the amount of data they receive; they actively organise and attempt to comprehend it. This is usually performed in an exceptional and specific manner. A number of constructivism theories now demonstrate learning as a

more complex construction involving the reconstruction of knowledge. It is not merely the absorption of knowledge from the surrounding world (El-Hindi, 1998; Greening, 1998; Ormrod, 1999).

Learning should rather be seen as a process whereby knowledge building occurs individually or socially, based on the learner's previous knowledge; and moreover, it needs to recognise the learner as being actively involved in "*a joint enterprise with the teacher*" (Atherton, 2011).

Consequently, learning within the framework of Social Constructivism is made possible through (i) cognitive tools, (ii) idea-based social constructivism, and (iii) a situated cognitive view (Facundo, Howard and Shuford (2006). As a result, instructional models based on social constructivist approaches do not assume that expertise can be built on the educator's knowledge; but should rather emphasise the building of new knowledge on the pedagogy of existing models in relation to the following issues: (i) reciprocal teaching; (ii) collaborative work; (iii) problem-based teaching; (iv) experiential learning; (v) shared and negotiated learning; (vi) social contextualization of learning; (vii) independent, self-directed learning; and (viii) guided exploratory learning and reflective practices (Facundo, Howard, and Shuford, 2006; Mayes and DeFreitas, 2004; Ashworth, Brennan, Egan, Hamilton and Sáenz, 2004).

At the same time, current global changes include concepts such as distant education, eLearning, flexible learning and lifelong learning. These concepts force HEIs to take a practical stance in understanding how a teaching-and-learning practice impacts on the students' learning processes **(**Ashworth, Brennan, Egan, Hamilton and Sáenz, 2004). This study investigates the application of socio-constructivism – a sub-set of constructivism – to eLearning, in order to establish how it affects the adoption of knowledge through the use of technology.

On the one hand, socio-constructivism highlights people's perceptions of how individuals gain knowledge in a social context, and it expands the constructivist theory to collaborative learning as a means of improving performances within a learning organisation – through reflection and sharing (Holmes and Gardner, 2006). On the other hand, eLearning takes the concept of "*community of learners*" a considerable step forward by enabling less formal communities – less formal than the organisational

structure of business enterprises or a school or university – to create a self-sustaining communal learning environment (Holmes and Gardner, 2006:74).

Recently, the focus has been on socio-constructivism also referred to as 'communal constructivism'. This learning approach emphasises a process whereby people construct their own knowledge (constructivism) as a result of social learning (social constructivism), but actively contribute their learning to the creation of a communal knowledge base for other learners (Salmon, 2002:208). ICT presents the important tools whereby a social constructivist environment can realise its goals (Chen, undated); and "*online learning affords individuals the linked community, the knowledge bases, the knowledge-creation tools and the facility to provide their learning to others*"(Holmes and Gardner, 2006:76).

Even though there are considerable barriers to knowledge, it spreads fast (Salmon, 2002:208). Knowledge spreads in various ways, mainly through, but not confined to, books, articles, key-note addresses, story-telling, discussions, and the 'trial and error' of the teaching practice. One of the more modern ways is by using technology; for example, where structured online activities continuously afford knowledge building and information sharing (Salmon, 2002). As a consequence, learning becomes a progression of enculturation into a community of practice (Chen, undated).

In the context of ICT-related teaching and learning, community essentials, such as "*people, shared purpose, guidelines, technology, collaborative learning and reflective practice"* are important, but social presence is a vital component of the online environment (Pallof and Pratt, 2005:3). Undemanding participation in an online classroom through guidelines helps the students, but it does not suffice for the creation and sustainability of an online community, which requires questions posed to develop lively asynchronous discussions and community building. Moreover, the online responsibilities of the student and facilitator are vital for the building of an online learning community, which differs from a straightforward correspondence online delivery (Pallof and Pratt, 2005).

Lecturers' presence (or the lack thereof) could affect learner satisfaction and progress. Accordingly, a greater consciousness toward social presence is important, without forgetting that this should be enhanced by a cognitive presence also (Greyling and Wentzel, 2007).

As "*learning focuses on developing new knowledge, skills, and attitudes, eLearning faces the problem that psychomotor, affective and higher-level objectives are hard to reach within virtual learning phases*" (Mödritscher, 2006:8). It is suggested that the availability of methods, such as interactive tasks, context-based learning, and open-ended assessment questions that could lead to the realisation of these educational aspects. Constructivism presents various advantages, such as content presentation from various viewpoints. However, it also faces disadvantages, such as the lack of adequate evaluation of the learning process or limitations on directing the learning process into a specified definite direction. For example, reference is made to the high science drop-out rate "*due to a lack of extrinsic motivation for students with low capabilities on self-directed learning*" (Mödritscher, 2006:8).

2.2.4 The interrelatedness of the well-known theories and an emerging 'Connectivism'

The discussions above are brought together in a tree representation by Holmes and Gardner (2006:79), depicting how the various theories of learning are interrelated, and how they affect each other, as illustrated in Figure 2.1 below. During both face-to-face and eLearning sessions, facilitators have to take their teaching and learning processes beyond the traditional, teacher-centred model to "*reflective practice*"; thus not starting "*with what the new technology offers…examining instead what students need…*" (Laurillard, 1996:1-7). This situation has led to increasing attempts at pinpointing best learning theories in terms of the new eLearning environment.

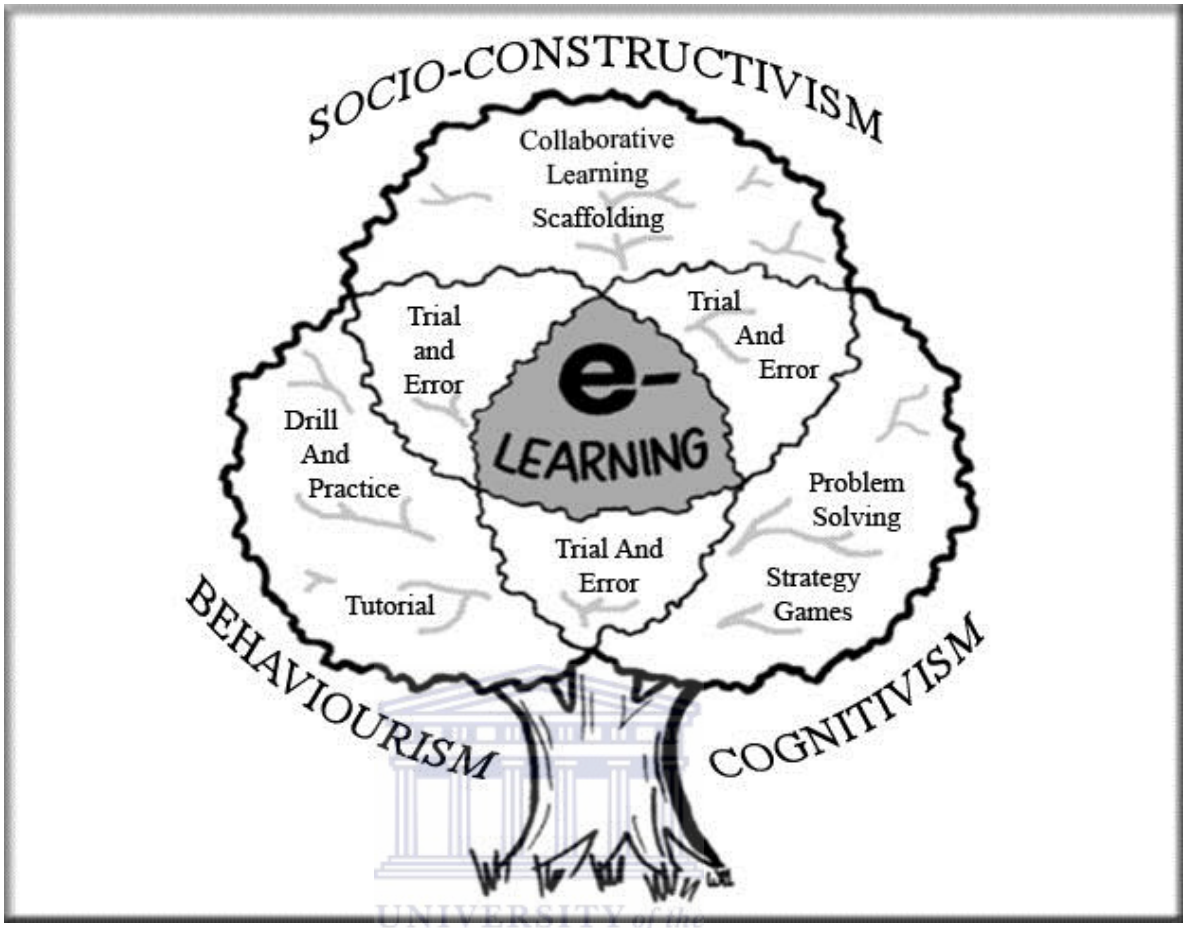


Figure 2.1 :Overlapping theoretical underpinnings for eLearning [Holmes and Gardner, 2006:79]

Associating the creation of effective online environments with one particular theory is not always realistic, because actual prescriptions of theory are not always practically applicable. Educators and online facilitators have to find what works for them, and apply this accordingly. The online environment can be adapted to accommodate constructivist values. However, there are various levels of learning; and some learning requires inflexible solutions, whilst others are more prone to learners taking control of the environment. Content, too can be structured in incremental steps of complexity, progressing from prerequisite learning to learners taking control.

This interrelated, eclectic approach to the creation of online environments knits behaviourism, cognitivism and constructivism together. This approach takes the learner on an eLearning journey where they are familiarised with the major concepts of the course and then progress to a level of self-directed learning. Hence, the tree representation in the figure above indicates that there is a place for each theory

within the discipline of eLearning. Furthermore, it is in line with Nichols (2003:3) who highlighted that "*Skinner's behaviourism, Piaget's cognitive constructivism and Vygotsky's social constructivism can all be facilitated through eLearning*".

Learning theories, such as behaviourism, cognitivism and constructivism have impacted on the design structure of technology in the educational sphere. However, significant questions arise when well-known theories of learning are continuously reviewed and advanced to apply to technology. As circumstances have changed so considerably, further updates and reviews of existing theories do not make much sense; and thus the need for a new approach arises (Siemens, 2005) – thereby giving birth to the recent discourse within the blogosphere regarding the position of Connectivism as a learning theory for the current digital age (Kop and Hill, 2008).

The concept of Connectivism introduces a learning model that recognises: (i) Technological societal changes; (ii) the usage of new tools; and (iii) that learning is not an activity, which only takes place internally within an individual, but it exists in the world (Siemens, 2005). Thus, Connectivism recognises that considerable developments in learning have emerged and that learning needs and theories should be contemplative of the fundamental social domain. It also affords more insight into what learners need, in order to develop in a technological era (Siemens, 2005).

Moreover, learning within realms of the Connectivism concept is regarded as a process of making use of technological tools for informal information exchange within a structured network. The learning process is recurring, thereby connecting learners to an information sharing network, whereby they would be able to change their ways of thinking. Furthermore, it allows for sharing within the network and for searching once again for new information (Kop and Hill, 2008). The enthusiasm to search and make sense of information increases within collaborative tasks. These, in turn, escalate as personal social networks become the space in which informal sharing of the know-how and communities of practice can grow (Bessenyei, 2008).

Even when a paradigm shift is taking place, the emerging Connectivism cannot be classified as a new theory, since it proposes a perspective similar to the Activity Theory of Vygotsky (knowledge exists

within systems accessed by people taking part in activities) and the Social Learning theory of Bandura (people learn through contact). Rather, the emphasis should be placed on its vital stand in the development of innovative pedagogies where the focus is moving away from the tutor to a progressively more independent learner (Kop and Hill, 2008).

Subsequently, it is often the merging of these learning theories, i.e. merging teaching and learning approaches and technology, that facilitate the creation of effective eLearning models and endeavours to provide more structured approaches to the implementation of eLearning. The next section will discuss how HEIs make use of eLearning models that leverage traditional classroom instruction to the eLearning domain (Huynh, Umesh and Valacich 2003:48).

2.3 eLearning models

Many practical eLearning models have emerged since 1998; and these chiefly stem from distance learning approaches, on the one hand, and the fast changes and progress of educational technology, on the other hand (Huynh, Umesh and Valacich, 2003). Even so, there is a need for all-inclusive approaches which include valuable learning principles (Tergan and Schenkel, 2003). Consequently, eLearning models are efforts to develop frameworks to contend with the learner and the difficulties of the technology, in order thereby to facilitate effective online learning (Engelbrecht, 2003).

This study will be underpinned by an eLearning model; this will endeavour to depict important concerns that need to be analysed and integrated into institutional strategic eLearning planning and implementation. Hence, the discussion around the following eLearning models that follow, is an attempt to provide a theoretical base for the empirical case study; and it will address – as Engelbrecht (2003) has highlighted: (i) the need for strategic planning that should recognise the needs of the users (staff and students); (ii) the design and development of quality learning material; (iii) the creation of environments that promote knowledge building; and (iv) the effective use of technology to enhance the teaching and learning process. In the paragraphs below, various eLearning models will be considered in their relation to:

- Sound instructional design principles to support the implementation of eLearning;

- Structured approaches to support interactive online environments;
- Knowledge building and sharing in online communities of practice;
- Supporting and sustaining online environments and learning approaches;
- Management of the ICT integration processes:
- The management of teaching processes to enhance their effective use;
- The management of the implementation processes;
- Management within the complex HEIs.

2.3.1 Sound instructional design principles to support the implementation of eLearning

Instructional Systems Design (ISD) has been portrayed as the most extensively applied methodology for designing and developing teaching and learning material. ISD models are based on the systemic growth of teaching and learning; and they consist of the basic phases of: (i) Analysis; (ii) design; (iii) development; (iv) implementation; and (v) evaluation and reviews. The ISD models contain guiding principles and procedures for the detailed break-down of complex activities into learning levels – for the design of instructional material and programmes based on these specific levels (Mayes and DeFreitas, 2004).

Although there are more than one hundred ISD models, most of them are based on the universal ADDIE[2] model. This guides and creates an awareness for course designers with regard to the creation of eLearning content and training material, based on thematic and cyclical processes (Ijab, Anwar and Hamid, 2004). In the sphere of instructional design and technology, systemic ISD processes are often used to effectively make use of various instructional media to achieve goals; and to explore learning and performance challenges in diverse settings (Sortrakul and Denphaisarn, 2009).

Accordingly, successful eLearning implementation is grounded on sound pedagogical principles. The *Instructional Development Model for the development and evaluation of eLearning content* (Govindasamy, 2002), highlights the pedagogical attributes of analysis, design, production and formative evaluation. Production occurs along five parameters: "*developing content; storing and managing content;*

[2] ADDIE: Abbreviation for the developmental cycle of analysis, design, development, implementation and evaluation

packaging content; student support; and assessment". All these attributes work together in a non-linear manner (Govindasamy, 2002: 289-292).

The model proposes the design of learning objects (LO), or small convenient parts of eLearning content that can be used alone or within a larger course. The process of structuring an eLearning course, therefore, entails the retrieval of LO from a central repository and the arrangement of these into an integrated course (Govindasamy, 2002). Furthermore, the instructional development model emphasises that student support in an eLearning environment is very different from that in the traditional classroom instruction.

They base this on *Laurillard's Conversational Theory* (1996), whereby a teaching approach is founded on the interaction between the educator and the student, rather than on students' reactions to what the educator expects of them. Helpful feedback is important; and this enables learners to reflect and engage with the content. A crucial component of teaching and learning is to include assessment tasks aligned to the students' learning approaches. For example, a well-designed eLearning Multiple-Choice Question (MCQ) assessment can be set up to assess higher-order cognitive skills, thereby enabling learners to engage in the content in a deep, insightful manner (Govindasamy, 2002).

Moreover, it is important that the interface of the Learning Management System (LMS) used for the development of content, should reflect the loyalty to instructional development models – and focus more on integrated pedagogy, and less on the number of features (Govindasamy, 2002).

Equally important, is the *Psycho-pedagogical Instructional Design model* recommended by Alonso, Lopez, Manrique and Vines (2005). This model re-emphasises the previous section of this chapter (Theories of Learning) – whereby there is a focus on an eclectic approach to the application of learning theories to eLearning. Instructional design has progressed primarily in understanding the combination of the development of three fundamental learning theories: behaviourism, cognitivism and constructivism.

Furthermore, Alonso and others (2005) highlight the instructional design of anchored instruction, developed from social constructivism. This is based on an anchor (certain topic, focus, question or case

study). Anchored instruction can be described as an exemplar for technology-based instruction, emphasising the fact that relevant training is essential, as it enables learners to relate to the concepts learned, to assess the outcomes, and to offer a realistic position and tools to enable learners to then apply what they have learned (Alonso *et al*. (2005).

As has been noted, the upsurge of instructional technology has impacted instructional design as designers now have to develop and customise instruction for various modes of delivery over intranets and internets, as well as for stand-alone web applications (Sortrakul and Denphaisarn, 2009). Traditional ISD models address the needs and individualism of the learner, thereby enabling educators to create customised eLearning processes that are based on teaching and learning outcomes (Alonso *et al*. (2005). Equally important, traditional ISD models are still applicable and relate to current progress in eLearning, as they contain the main elements required to design and develop effective eLearning environments in terms of structure, content, motivation and feedback, interaction and involvement.

Furthermore, the design of effective eLearning is not reliant on the ISD model, but rather on the instructional strategies used by the instructional designer (Herridge Group, 2004).

Based on the theories and models discussed, information gathered from this study has enabled the researcher to develop an eLearning model that will supplement and improve existing teaching and learning approaches in HEIs.

2.3.2 Structured approaches to support interactive online environments

It is often the merging of teaching and learning approaches and technology that enable the creation of effective eLearning models, whereby one is able to provide more structured approaches to the implementation of eLearning, as well as to create interactive online environments and activities.

Brownlee (2004:4-5) reaffirms Baxter Magolda's (1996) relational pedagogy and connected teaching, which implies that higher education "*should be a relational activity, in order to help students develop more sophisticated (and relational) epistemological beliefs that connect self and theory; and to consider*

how teacher-education programmes may be improved using pedagogy, which is also relational in nature". Carmody and Berge (2005) add to Brownlee's (2004) suggestion, by advising that in order to attain success, the application of the individual, private disposition of learning is important, as there is no single instructional method that could ensure effective teaching and learning.

The emphasis on effective application and how it can be applied to ensure effective teaching and learning (as well as online teaching and learning) is further discussed within four teaching and learning approaches: (i) Student-centred; (ii) subject-centred; (iii) teacher-centred; and (iv) teaching-centred (Carmody and Berge, 2005:111-117):

The *student-centred approach* maintains that learning is a personal, ever-changing process, which is controlled by the student. Online environments provide the appropriate settings for a student-centred approach, whereby open discussion forums can enable the learners to critically argue and examine the learning material.

The *subject-centred approach* places the focus on the educator, although student-centred techniques are also integrated therein. This approach is fitting for work-related trainings and academic environments, including online environments, where relevant social relations and considerations can be applied to real-life situations, and initiated and dealt with in an online environment.

The *teacher-centred approach* is a pedagogical model that holds the educator solely accountable for making all teaching and learning decisions. Traditional and online environments make use of this approach to attain specific learning outcomes, especially in cases where learners are not expected to obtain new skills and knowledge. Hence, this approach focuses on the underpinning of previous knowledge, and not so much on the learner's needs.

A *teaching-centred approach* is best suited to a situation, which requires that students are allowed to communicate and debate certain information, in order to develop an understanding of the information. This approach can be used online, often jointly with the student-centred approach, whereby students

would be able to facilitate a part of a course. Hence, assisting with online facilitation increases the understanding of a particular topic.

Salmon (2004:10) merges technology with the relevant teaching and learning approaches, and presents a *five-stage model*, as depicted in Figure 2.2.

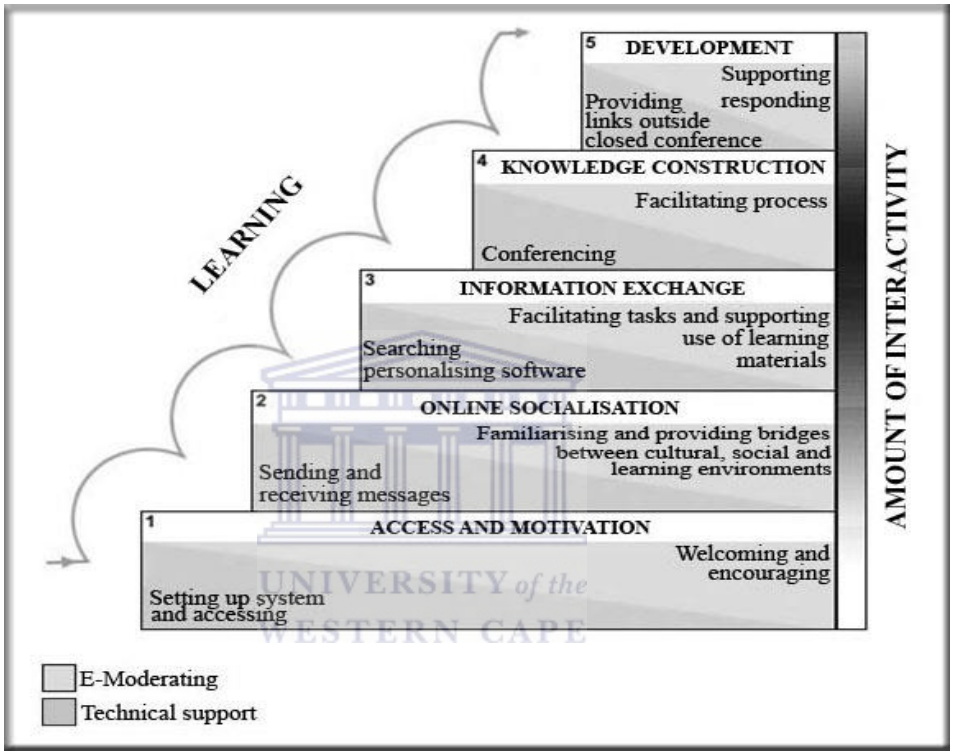


Figure 2.2 :Model of teaching and learning online through online networking (Salmon, 2004)

T*he model of teaching and learning online through online networking* (Figure 2.2) emphasises five incremental steps for the creation of effective online environments. These steps are indicative of a scaffold – with a structured and developmental approach to create effective online environments. This structured learning and scaffold model supports and develops individuals (learners) at each stage, as they expand and extend their online proficiency. Moreover, the model highlights what is expected from the educator, in order to motivate the "*e-learner*" through the development of appropriate "*e-tivities*" (Salmon, 2004:10).

The *student-centred* and *teacher-centred* approaches are merged within this online model. The use of asynchronous collaborative eTools, such as discussion forums, enables the learners to communicate at their own pace – however within a particular timeframe set by the lecturer. The online facilitator poses questions as the starting point of a discussion topic. This promotes the exploration of the topic and the development of critical-thinking skills. Yet, the facilitator is also held solely responsible for issuing clear instructions and advice regarding the limits of the postings, and perhaps even the behaviour of various models – by giving an example of a posting to the learners. Consequently, this section has highlighted the importance of merging relevant teaching and learning approaches, together with technology, to enable one to reflect on appropriate e-tivities, essential training, and various online facilitation skills, referred to by Salmon (2004) as 'e-moderating skills'.

The work of Rauscher and Cronje (2005) further emphasises the importance of the creation of effective online environments. There appears to be a wealth of research regarding cognitive facets, such as content and instructional design, in addition to online support, although the affective facets seem to have been ignored (Rauscher and Cronje, 2005). The authors, therefore, propose *an analysis of the affective realm*, according to Krathwohl's taxonomy (Krathwohl, Bloom, and Masia, 1973). They aimed to find a correlation between high affective levels and the completion of online courses; and they discovered that the affective facet of 'valuing' is a community activity (Rauscher and Cronje, 2005:105-117). However, it must be emphasised that creating online communities and establishing effective online communication is not an easy task.

2.3.3 Knowledge-building and sharing in online communities

The current, realistic situation in the higher education settings is that the notion of communities of inquiry that advocate that the learner should approach learning in a critical way and process knowledge in a reflective, insightful manner, has not been extensively recognised. Therefore, the *community of inquiry model* states that the three fundamentals (cognitive presence, social presence and teaching presence) should be taken into consideration when carefully planning and delivering an eLearning course (Engelbrecht, 2003:45).

Jacobs, Brandt and Kruger (2006:233) present a "*curriculum design framework for eliciting and shaping tacit knowledge for meta-innovation*". They do this by enhancing the significant online social presence and highlighting the fact that learning – by engaging in tasks with other learners – creates a prospect for effective contribution in a community of practice. They argue how, with explicit knowledge, learning is viewed as the end-result, whereas the implicit aspect views learning as a problem-solving tool. Explicit knowledge can be extended and communicated through "*socially constructed understanding that emerges from collaboration and common interest*".

Fourie and Bothma (2006:469) further augment the argument of the importance of online communities by presenting a theoretical model (refer to Fig 2.3: Addressing the digital divide: developing advanced skills for individuals by group and institutional support).

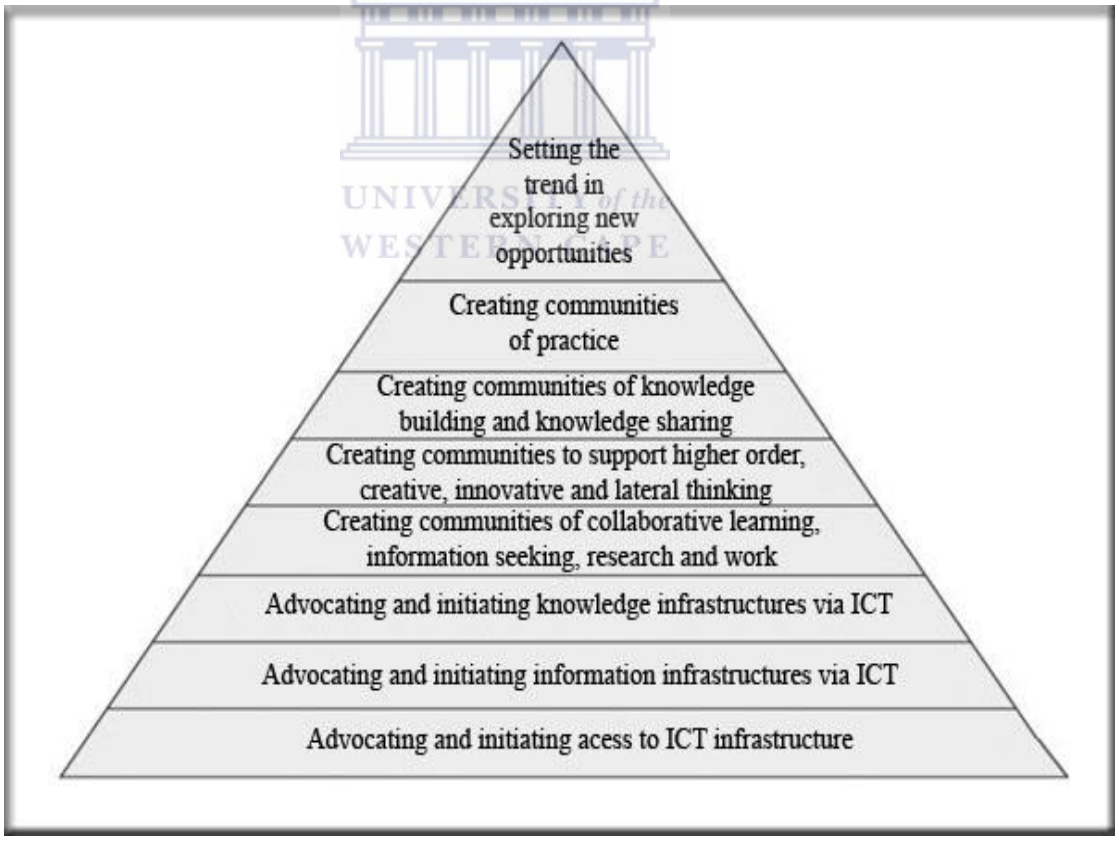


Figure 2.3 :Addressing the digital divide: developing advanced skills for individuals by group and institutional support (Fourie and Bothma, 2006)

The model highlights the point that it is only through reaching higher levels of knowledge building and sharing within communities of practices that the digital divide will be bridged. The digital divide does not only involve ICT access and information skills, but rather that "*individual commitment, group work, and intellectual and academic support from the institution might contribute to bringing people to higher levels of knowledge generation and communication*" (Fourie and Bothma, 2006:469).

The potential for the creation of communities of practice is presented through the developmental levels of information literacy, information retrieval, access and support to ICT; and eventually, thereby reaching a level of independent learning; as well as supporting others in a community of practice (Fourie and Bothma, 2006).

The model could be related to the development of an ideal online experience, where learners eventually gain confidence and develop as knowledge builders. The hierarchy links to an ideal online scaffolding experience, whereby online training, support and assistance can be delivered at critical times (and later removed) – until students are able to cope on their own. This is achieved by focusing on how the students' and facilitators' roles are blurred; and demonstrating how a student can be assigned the responsibility of leading and moderating a discussion forum; as well as how groups can collaboratively research a topic, and then present it to the class.

The apex of the pyramid is in line with the work of Salmon (2004:48), who emphasises an ideal online community stage, where lecturers and students "*are essentially using a constructivist approach to learning*", and where "*challenge and argument will foster deeper thinking and reflection*".

The above model is relevant to this study which seeks to determine the effectiveness of online modes of instruction, and the resultant impact on both lecturers and students, as well as how best learners and academics can be supported in making effective utilisation of available eTools that are at their disposal.

2.3.3.1 *Supporting and sustaining online environments*

This section, in a particular manner, joins together the previously discussed issues of:

- The systemic ISD models, which cater for assessment and student needs;

- The teaching and learning approaches, which further enable structured interactive online environments; and
- The creation of sustainable online communities. These all come together in the *demand-driven model*, highlighting three important online end-user requirements (Engelbrecht, 2003:42):
- High quality, extensively researched content;
- Interactive, user-friendly eLearning courses, and teaching and learning resources;
- Administrative and technical support services.

The ISD model focuses on the essential ICT infrastructure needed to support these three end-user requirements; and it emphasises that the needs of the end-user can only be met if pedagogical adjustments are made to both content and services. Moreover, if these adjustments and changes are implemented, this should lead to an ideal online support environment, whereby the educators take on a more proactive role, and are influenced to take a hands-on role in the improvement and application of eLearning tools in the teaching process (Engelbrecht, 2003).

Le Grange, Greyling and Kok (2006) go further and highlight that it is imperative that lecturers and institutions of learning, which are going through these changes, should focus on life-long learning (refer to Figure 2.4: *A staff development process model*).

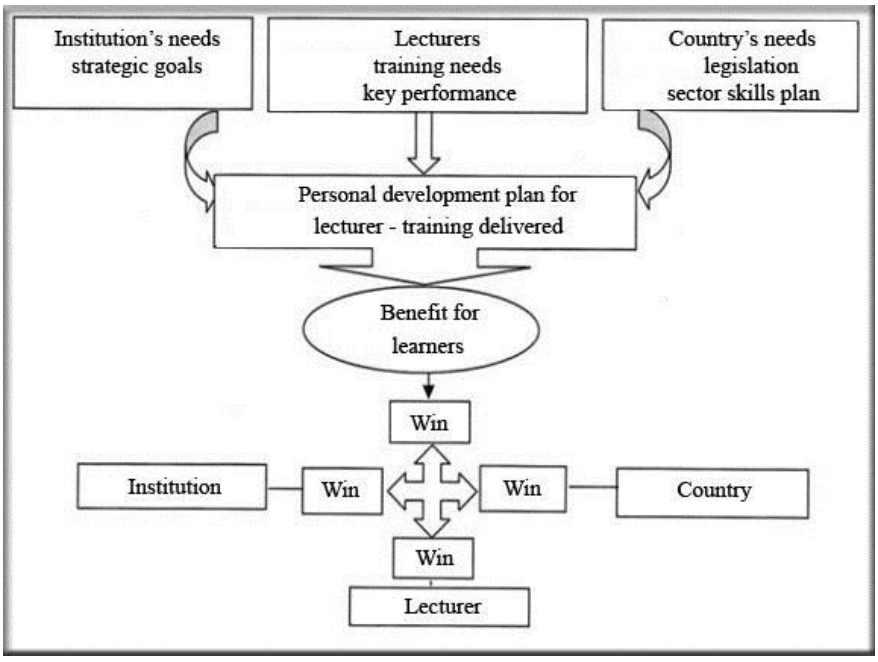


Figure 2.4 :A staff development process model (Le Grange; Greyling and Kok, 2006)

The model emphasises the need for staff development in HEIs, and more importantly, the policies and procedures that "*support those who have to support*" (the academics), in order to augment the teaching and learning processes (Le Grange, Greyling and Kok, 2006:87). The authors highlight the importance of staff development, not only in terms of the institution and the individual, but also in terms of the holistic higher education domain, whereby the needs of all stakeholders considered, can lead to a "win-win" situation for all.

The above focus on appropriate staff development programmes in HEIs is pertinent. Hence, it is rightly observed by Nortar, Wilson and Montgomery (2005), that the model for teaching has not altered much, even though eLearning tools have become more popular. Educators still need the support; and they have to be guided regarding clarity about their teaching content; the needs of the students and the methodologies that enable effective learning, regardless of geographical space. Moreover, with the move from traditional, centralised classroom-based instruction towards eLearning, fewer attempts have gone into instructional processes and methodologies, resulting in the often unplanned and unprepared design of eLearning courses by educators (Alonso *et al*., 2005).

Hence, a number of researchers have established that the most successful implementation and application model is a blended (hybrid) model. This includes (Alonso *et al*., 2005):

- Face-to-face classroom instruction;
- Self-paced learning; and
- Synchronous eLearning.

In this study, the researcher argues that the introduction of eLearning does not imply that traditional modes of instruction can be discarded, but that these should be blended with modern and technology-based methods. The researcher has, therefore, given precedence to blended learning, hence the construction of an *Integrated eLearning Model*, produced by this researcher (refer to Chapter 7).

2.3.3.2 *Supporting and sustaining blended learning approaches*

Ijab, Anwar and Hamid (2004) present *the Teaching and Learning Model of UNITAR*, which focuses on a collaborative group-learning approach and less on teaching. This model emphasises the educator as a

facilitator, mentor and coach, who engages in a space, which is not necessarily restricted to the traditional, physical classroom (Ijab, Anwar and Hamid, 2004). The eLearning Philosophy of the University of Tun Abdul Razak (UNITAR), the first eLearning university in Malaysia, is intended to focus on the pedagogical needs of the learners as its main clients; and it demonstrates that both the software and hardware components are integrated to attain the goals of the institution's vision, and inevitably thereby, those of the students also (Ijab *et al*., 2004).

The first two-levels of Kirkpatrick's (1975) 4-level model of evaluation, namely: the students' reactions and the learning results are used for a summative evaluation of eLearning courses, and for the improvement of course material (Ijab *et al*; 2004). The institution also employs *customer relationship management (CRM)* processes, whereby as soon as a client makes contact with the call centre via telephone or email, a message is sent to the client in a timeous manner – normally within 24 hours depending on the critical level of the issue. The client is updated with the current work in progress; and a trouble-ticketing system (TTS) is deployed, which ensures that each request received via the call centre is marked with a reference number (Ijab et al., 2004).

The authors, however, did not stress the importance of the management of these integrated processes. Hence, the next section highlights the much-needed *management of integration processes*, especially in complex HE environments.

2.3.4 Management of ICT integration processes

The management of ICT integrated processes is here explored, through: (i) The management of teaching processes to enhance their effective use; (ii) the management of the implementation processes; and (iii) the management of the complex activities and organisational change.

2.3.4.1 *Management of teaching processes to enhance their effective use*

The management of the teaching processes is crucial, as the process of the integration of technology does not entail leaders who are "*outdated*", but rather those who are able to adapt with regard to educator innovations, which include piloting with technology in various disciplines (Mentz and Mentz, 2003:197).

This process of integrating technology into teaching and learning is displayed in Figure 2.5, as adapted from Mentz and Mentz (2003).

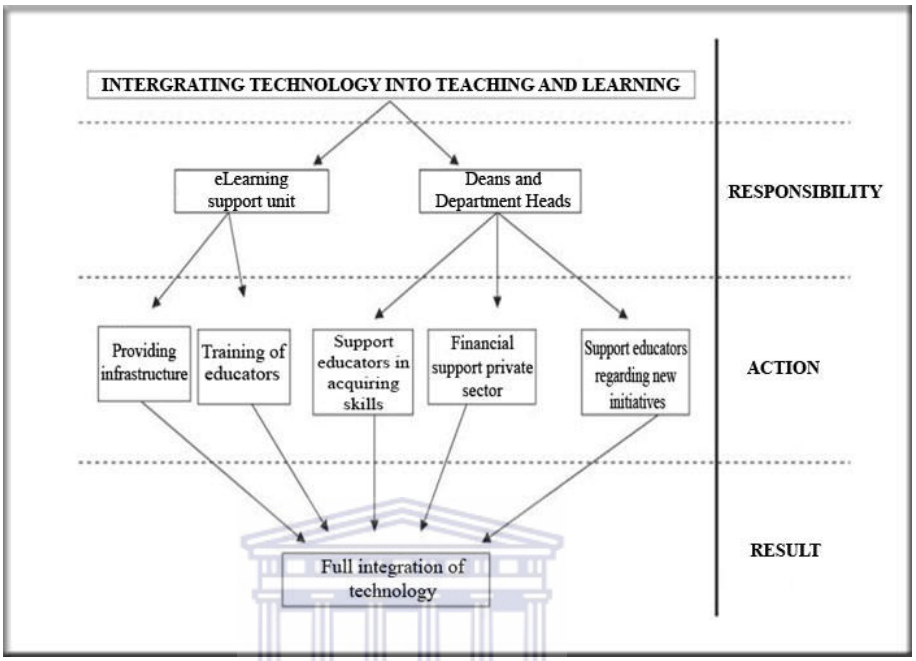


Figure 2.5 :Integrating Technology into Teaching and Learning (Mentz and Mentz, 2003) Adapted by Stoltenkamp (2010)

This model highlights the point that learners should be exposed to technology as soon as the educator(s) have been trained accordingly. In the case of a higher education setting, there should be joint ownership (educator, academic leadership and eLearning support team) of the responsibility of ensuring that the eLearning underpinning technology (computers and eTools) is optimally used.

The learners have to be continuously motivated to become computer literate[3], and familiar with eTools. Hence, a high level of commitment from the educator, and how effectively s/he makes use of the technology should be integrated into the curriculum. The management of the integration processes should be done on the ground level (for example by an eLearning support unit with the backing of Deans and HODs), bearing in mind that these processes are integrated with sound infrastructure and finances for their effective implementation.

[3] Computer literate: Become familiar with basic computer software programmes and hardware devices

Change-management strategies should incorporate effective partnerships with other units within the institution, other HE institutions, and corporate (private sector) organisations.

Consequently, technology is highlighted as being a "*tool to improve society as a whole*". The management of integration processes on the ground level and leaders who are able to establish vital partnerships between the private sector and other institutions are, consequently, important (Mentz and Mentz, 2003:186-197). These partnerships can further lead to the necessary emergent strategic alliances between tertiary institutions and corporate IT software organisations, which would enable HEIs to hold onto their intellectual property. It could also serve as a successful marketing strategy for institutions (Huynh,Umesh and Valacich, 2003:58).

The principles highlighted in the model by Mentz and Mentz (2003) have been adapted appropriately, so that they can be associated with the integration of technology in higher educational settings. The HE environment is competitive; and education is one of the crucial elements to guarantee such a competitive environment – by calling for leaders to be motivational, despite the lack of resources in most cases (Mentz and Mentz, 2003).

Furthermore, these changing, integrated, competitive environments include online environments, which present different methods of communication and assessment for both lecturers and students, as they learn how to use the technology effectively (Fresen, 2007). The work of Mentz and Mentz (2003) is emphasised by Fresen (2007), who highlights this work in a taxonomy of web-supported learning, *change management*, *accessibility*, and *learner-centred environments* – as critical success factors that influence quality online environments.

These critical success factors form the basis of the empirical investigation of this study and the development of an *Integrated eLearning model*.

2.3.4.2 *Management of the implementation processes*

Uys (2007:238) supports the need for management, integration and leadership in the *Leadership, Academic and Student Ownership and Readiness (LASO) model.* This model is an attempt to ascertain strategic, institution-wide technological changes in higher education settings – via a model supported by a comprehensible and integrated institutional vision, as depicted in Figure 2.6 below.

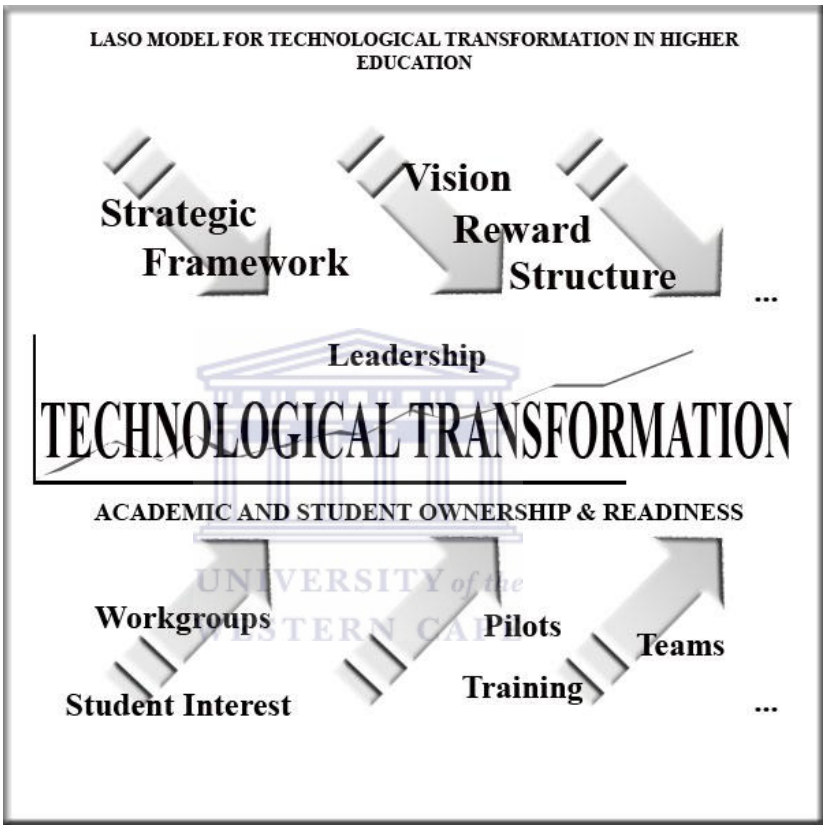


Figure 2.6 :The LASO model (Uys, 2007)

The LASO model is positioned within educational restructuring; and the implementation of technology in educational environments is often associated with bottom-up approaches by educators, and thus too easily discarded when not supported by management (Uys, 2007:239). Hence, the model emphasises the need for the integration of "top-down, bottom-up and inside-out" implementation approaches (Uys, 2007:244).

Furthermore, the model depicts institution-wide transformation, which calls for a systems theory, inclusive of an integrated implementation approach to technological innovation (Uys, 2007:240). Moreover, the LASO model recognises the importance of having the educators direct institutional technological changes and sound teaching and learning principles, in order for them to take ownership of the quality of their eLearning environments (Uys, 2007:240). The author also interrogates the *bottom-up approach of Roger's diffusion of innovation theory* (refer to Figure 2.7) when it comes to institutional implementation, specifically eLearning in a higher educational context (Uys, 2007:238).

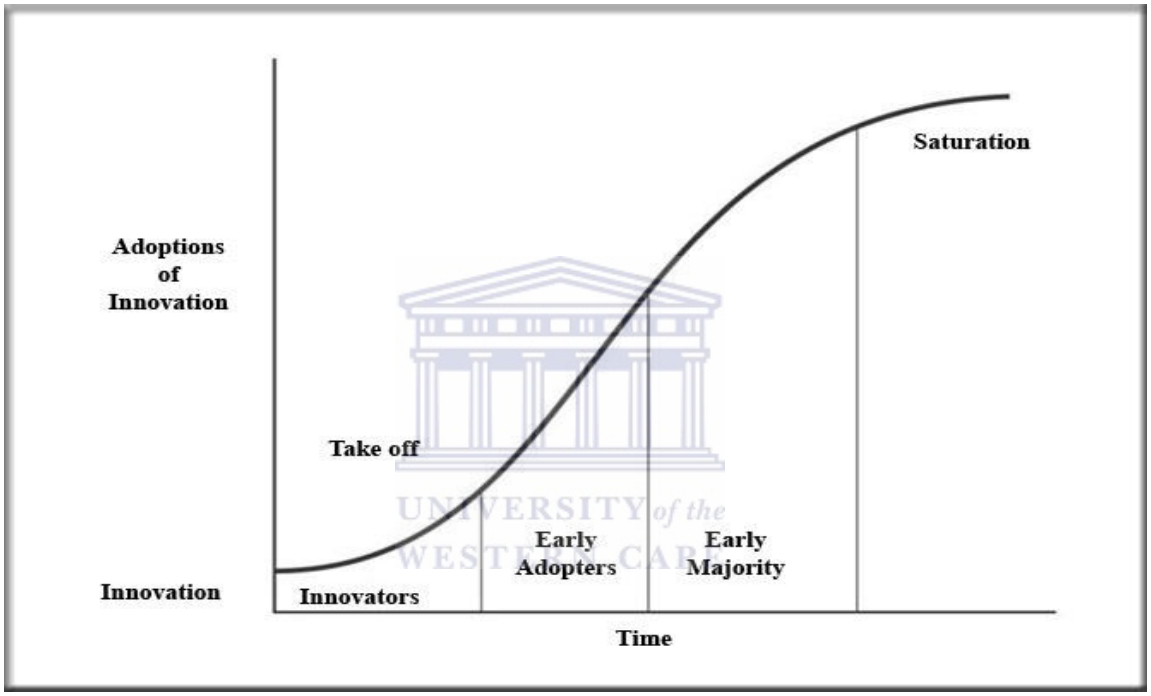


Figure 2.7 :The innovation adoption curve of Rogers (1995). Source: Uys (2007)

Roger's diffusion of innovation curve can be used to show the initial technological changes experienced within a higher education setting: *the take-off stage by a group of innovators*; *the change agents of the next phase of early-adopters*; the third phase of *legitimising the innovation and opening the potential for the adoption to the early majority*; and the final stage *characterised by widespread adoption.*

Moreover, the diffusion of innovation curve "*has a ragged contour*" – due to the intricacies of constant reform and change management within higher education environments (Uys, 2007:244).

Rogers' (1995) model will again be used in this case-study, whereby the researcher will present supporting quantitative data with regard to the adoption of eLearning within a higher education environment and a specific timeframe. The measures will be indicative of the exponential growth of eLearning; and they will relate to the presented phases of the specific case study, further highlighting the initial stages of an eLearning awareness campaign and the early adopters. It is also necessary to face the challenges within the institution, and peoples' perceptions at different times of an eLearning adoption continuum (in this case study, September 2005 to October 2011).

2.3.4.3 *Managing complex activities and organisational change*

From the above deliberations, it is evident that the situation in HEIs is, as Engeström (1999) highlighted it, namely: that within the backdrop of "*human activity and learning"*, educators are perceived to function within an intricate system of "*actions, tools, members, rules and a community*" (Lautenbach and van der Westhuizen, 2005:52) – as shown in Figure 2.8: *A complex model of an activity system*.

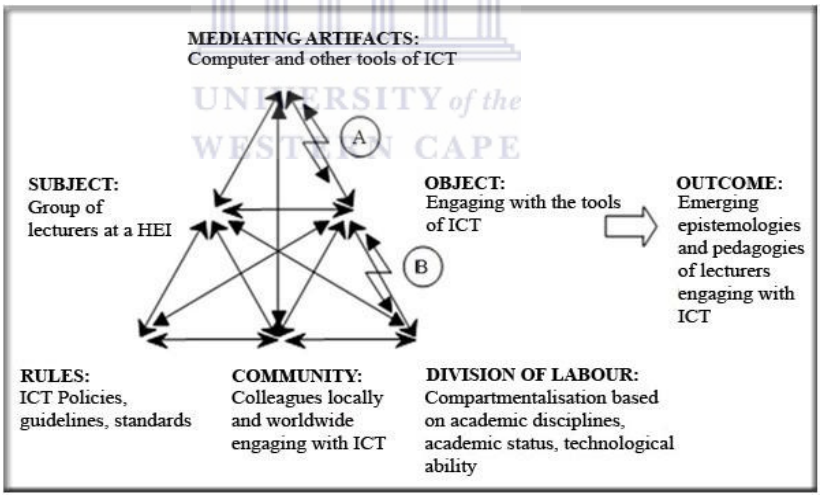


Figure 2.8 :A complex model of an activity system (Lautenbach and van der Westhuizen, 2005, (as adapted from Engeström, 1999:31)

The *complex model of an activity system* introduces a promising system, which includes the "*activity system at the institution*". The institution can be viewed as an activity system linked to other systems, all of which include tools, pedagogies and contexts. Specifically, the ICT community within the institution came about through the use of ICT tools by lecturers. Furthermore, these lecturers' teaching practices

came about because of the "*multiple contexts*" of the individual learners within the ever-changing ICT environment (Lautenbach and van der Westhuizen, 2005:53).

Consequently, this activity theory can be used as a means to analyse the changing human relations caused by ICT (Lautenbach and van der Westhuizen, 2005:53-69).

This model relates to the presented case study, which will focus on the factors that contribute to eLearning implementation in a complex higher education setting. This case study will present an integrated eLearning model, highlighting how complex systems are also situated within a specific culture of an institution, and are linked to a specific historical paradigm, closely aligned with the institution's vision and mission.

This is in line with the *complex model of an activity system*, which further highlights the fact that *"lecturers' engagement with the tools of ICT is, therefore, not a neat transfer of information, but rather a complex, and often messy structure, of social and cultural practices within the institution that must be explored as such"* (Lautenbach and van der Westhuizen, 2005:54). It would seem that Uys (2007) also emphasised this factor, but the author does not highlight the sustainability issues regarding eLearning support units within these complex, integrated environments. Neither does the author emphasise the need for continuous, persistent internal marketing of eLearning activities within a complex higher educational environment.

Such an approach must be associated with the necessary mindset changes for the application and integration of new online pedagogies.

It is worthwhile linking these "*complex and messy*" higher educational situations to a recently developed model of organisational culture in a South African context, known as the *X Model of Organisational Culture* (Smit, Ludik and Forster, 2008:79). This model puts forward the point that "*hidden forces*" have an impact on the culture of an organisation; especially in terms of its success or failure of particular output; and inevitably on its ability to transform (refer to Fig.2.9: The X Model of Organisational Culture).

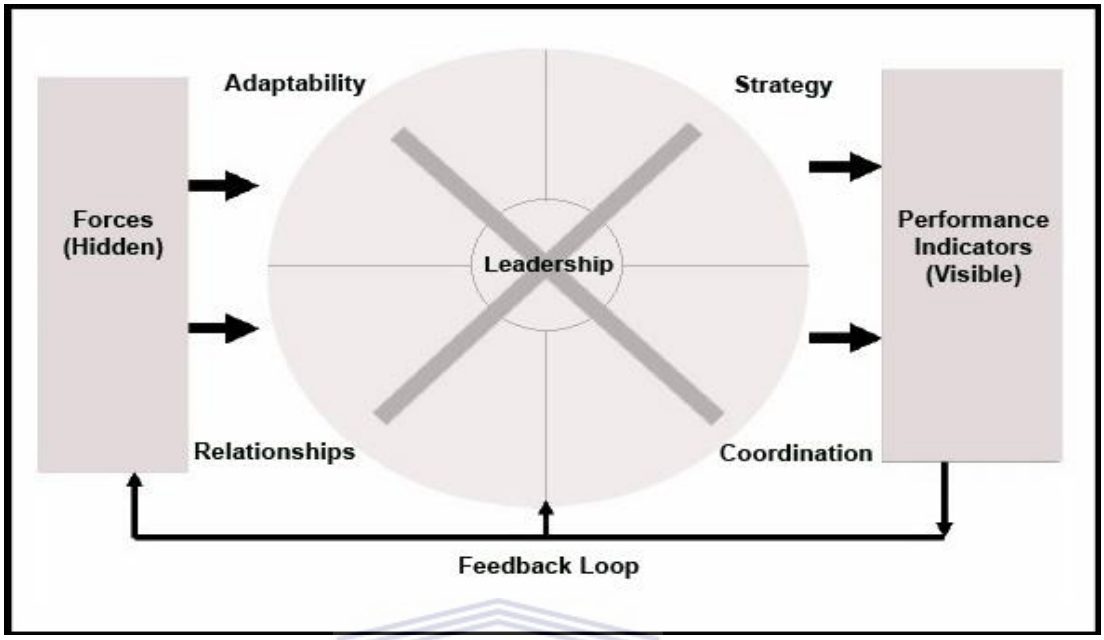


Figure 2.9 :The X Model of Organisational Culture (Smit, Ludik and Forster, 2008)

The authors state that an organisational culture is unique in at least three ways, namely: hidden areas, visible areas and results areas. These distinct areas impact actively on each other. Furthermore, the visible area is discussed in relation to five major factors, namely: *Leadership, Strategy, Adaptability, Coordination, and Relationships*. Each of these major factors again includes various sub-factors (Smit, Ludik and Forster, 2008:73).

Within the domain of *Coordination*, the model does not emphasise the need for vigorous marketing strategies in complex environments. Daily marketing within an institution instils change, especially with regard to mindset changes. This case study will, later on, discuss an eLearning blog marketing strategy within an HEI, which led to an increase in the adoption and observable organisational cultural changes.
While it is not easy to classify or describe, organisational culture it "*is an observable, powerful force in any organization; made up of its members' shared values, beliefs, symbols, and behaviours; guides individual decisions and actions at the unconscious level; and is a compass providing direction*" (Haworth, Undated).

At the same time, issues related to organisational and institutional culture are not easily comprehended; and often there is even a lack of terminology to express the organisational culturechange issues (Wignaraja, 2006).

In the domain of *Relationships,* the X Model of Organisational Culture does not reflect on vital sustainability issues, especially in relation to team commitment, internships, incentives and continuous training and development. The case study will discuss this in detail, especially in relation to a complex HEI, highlighting the need for continuous training and development of staff members – to ensure an effective eLearning support domain.

The following section considers those issues regarding the need for quality training interventions of educators and students, resulting in improved application and integration of new online pedagogies.

2.3.4.4 *Quality training and the application and integration of ICT into traditional teaching and learning*

Early research indicates that eLearning practices introduced by HEIs are enabling them to achieve their objective of developing learners (Newman, 2000). However, research also indicates that although users worldwide are inquisitive about eLearning, they seem sceptical about its pedagogical value; and moreover, they are concerned that eLearning is often not acknowledged as a component of the institutional teaching and learning strategy (Mann, 2000; IOMA's Human Resource Department Management Report, 2001:7).

In particular, ever since the early 1970s, research has indicated the critical role of quality pedagogical design in comparison to a focus on communication media (eLearning Papers, 2009).

Inevitably, questions arose amongst knowledgeable users with regard to the quality of eLearning, costs, training and the need for support that is also linked to communities of practice through blogs, wikis and published content (Bersin, 2007: online). Therefore, it would appear that eLearning continues to be a topical and controversial issue. And some questions still need further research, for example, the fundamentals of successful implementation in relation to the underlying pedagogy; or how learning occurs in an online environment; the lack of teaching, and guiding principles for designing and

developing pedagogically sound eLearning material; the training of instructional designers, and the induction of educators and learners into new educational technologies (Govindasamy, 2002; Alonso *et al.*, 2005; eLearning Papers, 2009).

Consequently, there remains a dire need for academics to receive training that will enable them to improve their online pedagogical practices. In line with this argument, Govender (2004) maintains that ICT interventions can be exploited for either supplementing the quality of the traditional classroom, or to deliver learning material off-campus through flexible distance education. Without a doubt, both modes of delivery will depend on finances, infrastructure, access, the support staff and the commitment of staff to sustain the initiative.

Accordingly, this quality should not only be emphasised in relation to the quantitative terms of access and equity; but also to the quality of professional training that would enable the effective use and integration of ICT. This is in order to understand the link between current promising pedagogical practices and techniques; the changing educator's position from distributor to mentor; student-engagement, enquiry, and adeptness. All these issues must be supported and sustained by useful educational technologies (Duhaney, 2005; Sharpe, 2005; Flanagan and Jacobsen, 2003; Mason and Lefrere, 2003).

In addition, quality training for educators is important, as it makes them feel at ease and competent with the use of technology; it helps to contribute to the perception that technology is valuable and practical; and it increases the responsiveness to curriculum design in relation to student needs and learning styles, as well as student choices in the use of such technology (Dusick, 1998; Reznich, 1997; Spotts, 1999; Peluchette and Rust, 2005).

Even more, quality training adds to the debate in relation to the support of the educator to improve efficiency and effectiveness. Thus, it should enable educators to include proper instructional design to create online courses, which will entail both student-centred and teacher-centred pedagogical practices, and to reflect on the integration of such and their actual practices. Proper instructional design should prevent educators from merely distributing course material and misleading students into believing that they are engaging them in eLearning by merely converting traditional textbooks to web format (Duhaney,

2005; Govender, 2004; Stoltenkamp, 2003; Rosenberg, 2001; Botha, 2001; Flanagan and Jacobsen, 2003).

Indeed, the emphasis on the need for quality eLearning practices, training and support in higher education cannot be sufficiently stressed. Most professionals see a link between the quality of the deployment of eLearning and its sustainability (Sabine and Dieter, 2003). It is therefore a matter of serious concern when research finds that there is a need for quality education in Africa, specifically in eLearning. Moreover, it highlights the clear disparities in the effective use of eLearning between the developed and the developing countries, which ironically would benefit the most from thorough preparedness for emerging ICT (Hennessy *et al*., 2010). At the same time, most of the institutions in developing countries are still in need of suitable resources, in order to implement eLearning more effectively (Guri-Rosenblit, 2005).

By and large, higher education in South Africa too has been laden with "stress and anxiety", since the Higher Education Act of 1997; the new quality enhancement plans; and specifically, because the implementation of ICT often falls short. The shortfall of the implementation can be attributed to several reasons, most importantly the lack of quality training to empower educators to take action and ownership with regard to their teaching practices (Boyd and Fresen, 2004:5).

Accordingly, this research reflects on the development of a provisional eLearning model, an *Online Creation Model* (case study, phase 1 at the University of the Western Cape), which was intended to inform the pedagogical development and support of educators to enable them to use eLearning tools effectively to deliver on their core functions of teaching and learning.

2.4 Summary

Responding to the objective, : "*to explore and apply relevant literature, in order to determine the new demands of teaching supported by eLearning in relation to learning theories and global trends*", this chapter presented a theoretical framework, which informed the case and the development of the final

Integrated eLearning model. The factors which contribute to eLearning implementation in a complex higher education setting were also highlighted.

Theories of learning, notably: behaviourism, cognitivism, constructivism, and the emerging connectivism were discussed together with their variants and the application to eLearning practices. These learning theories are linked to the various meanings and usages of eLearning. Furthermore, the significance of the responsibility and skills of the e-moderator (trainers, instructors, facilitators or teachers) were highlighted. The role of the academic as a facilitator, contrary to being a subject expert, has been emphasised, as one of "*designer, promoter and mediator of the learning process*" and as one who knows just enough to motivate and pace online interactivity (Salmon, 2002:4).

This was further expanded in relation to teaching and learning models and approaches, which have an impact on the development and application of eLearning models in higher education. These eLearning models assisted in making sense of a situation. As stated by Ornstein and Hunkins (2004:398), "*curricularists and educators*" need to be considerate about both the current and future use of information technology and the employment of strategies, in order to integrate and apply this new technology.

In addition, the chapter re-emphasised the need for the deliberation of sound online pedagogical practices in higher education institutions. The findings presented in the previous sections are used to inform the empirical case study presented in this thesis. This was done by connecting it to recent research, which indicates an engagement with ICTs in HEIs, manifesting a change in epistemology and pedagogy, and thus asserting how lecturers should question their teaching practices, when contending with such technology, and even adjust their traditional teaching practices (Lautenbach and van der Westhuizen, 2005).

This chapter has answered the established sub-questions:

- To what extent do learning theories impact on eLearning practices?
- How can HEIs create enabling environments for the transformation of organisational culture reflecting blended eLearning practices and communities of practice?

The following chapter will bring part of the answer to the sub-question: “What are the factors which enhance and inhibit the successful eLearning implementation in HEIs in general, and at UWC in particular?” This will be done by elaborating on the global context of a changing higher educational environment; and it will highlight the discussions around the contributions of Open- Source software technological developments and networks, specifically in relation to effective eLearning implementation and application in higher educational settings in the Western Cape.

CHAPTER 3

GLOBAL E-LEARNING TRENDS IN HIGHER EDUCATION

3.1 Introduction

In this chapter the researcher seeks to put the eLearning discourse into a global frame of reference, and ascertain how this has impacted on technological developments within HEIs. Consequently, it is necessary to deliberate on eLearning in the global context of higher education (HE), especially in relation to the concepts of globalisation and the knowledge era. This chapter also engages in discussion regarding the changing higher education context and the global legislative framework of higher education institutions, which underpin the creation of enabling ICT environments. Globalisation coincides with the concepts of "*internationalisation, liberalisation, universalisation and westernisation*"; but "*it is not equivalent to any of these older concepts and trends*." (Scholte, 2008:1499). It is also different since globalisation refers to the "*…spread of transplanetary – and in recent times also more particularly supraterritorial – connections between people*" (Scholte, 2008: 1478). Thus, for any process to be reckoned as evidence of globalisation, it should be "*genuinely globalizing, that is increasingly, inter-regional and/or inter-continental in character*" (Hay, 2006:3).

These global trends have facilitated the connection of diverse networks across the world, thereby making the world a global village through the internet and other communication facilities. As a result, the higher education sector has become more globalised. Globalisation influences higher education world rankings in relation to measurable objectives, such as national pride, politics and University leadership (Lie, 2009). Higher Education Institutions (HEIs) also play a vital role in current global economies – as channels for various "*cross-border relationships and continuous global flows of people, information, knowledge, technologies, products and financial capital*" (Marginson and van der Wende, 2006:5). Moreover, the HE sector has seen the ongoing increase in ICT advancements – that are crucial in terms of access, complex cultural developments and quality (Van Damme, 2001).

In addition, the elements of globalisation have had an impact on the application of knowledge, which, as Houghton and Sheehan (2000:1) state, has improved dramatically since the Industrial Revolution, suggesting thoughtful "*structural and qualitative changes*", which remodel the foundation into one possessing a competitive edge. In the same way, HEIs globally, in Africa and also South Africa, are not functioning and operating in silos, since these are all affected by the current information, technology and economic spills (Houghton and Sheehan, 2000:6).

These issues will all be highlighted via discussions around the contribution of Open-Source software developments, networks and applications in Africa, and particularly in South Africa. At the same time, eLearning is increasingly being used in HEIs globally, as well as in Africa. Moreover, in South Africa HEIs are also being challenged to meet the users' expectations of high-quality face-to-face contact integrated with online learning – in line with the global trends (Stoltenkamp and Kasuto, 2009). However, at the same time questions arise about whether a changing higher education context will be able to cope with the ever-changing complex demands of globalisation.

3.1.1 Globalisation and the dynamic higher education sector

Available literature has confirmed that due to globalisation, technology has been developing at a fast rate, especially since the 1990's when technological improvements have changed cultural, communal, political, financial, and generational life aspects (Taylor, 2001:54; Robert, 1991:6). Globalisation has increased the demand for higher education (Carnoy, 2005). At the same time, the globalisation of the higher education sector reveals complex processes, whilst it adapts to a global competitive knowledge society, which is characterised by rapid social and cultural changes (Khoo, Lehane and Revollo, 2008).

These increasing technological improvements and challenges have led to the development of new power constructs within institutions (Shoshana, 1998: 31), and have expanded the environmental force of progressive, innovative organisations (Markus, Manville and Agres, 2000:16). Simultaneously, some forecasters claim that the demands of these changing times will further shrink *"the big university campuses… (into) relics";* and they "*just won't survive*" (Drucker, 1997 cited in Mlitwa, 2006:1). Even

though it might not be time yet to contest or confirm Drucker's (1997) forecast, proof of changing global higher education environments is convincing (Mlitwa, 2006:1).

In the context of changing higher education environments, the increased numbers of students seeking higher education opportunities have necessitated the use of ICTs as these have been found to be able to contend with issues of large classes, academic preparedness and curriculum design - both at global and national levels (Bates, 2000; Clegg, Hudson and Steel, 2003; Oliver, 2002; Jaffer, Ng'ambi and Czerniewicz, 2007).In addition to the use of ICTs in higher education, recently institutions have come under pressure from government, the private sector and IT leaders to introduce ICTs for economic development; and the creation of innovative partnerships to encourage pedagogical possibilities (Arinto, 2006; Samoff and Carrol, 2004 and Evoh, 2007).

The question remains as to whether HEIs can measure up to the demands of globalisation, especially when it comes to the critical thinking about the effective use of ICTs to enhance teaching and learning; re-skilling educators; and the provision of cost-effective, flexible quality delivery systems (Selwyn, 2007; Olakulehin, 2007 and Sanyal, 2001).

Hence, the following section will explore how the provision of higher education is guided by legislative frameworks, which should create enabling environments to meet demands of globalisation.

3.2 Global legislation for higher education

It would not be proper to proceed with the discussion on higher education trends without providing legislative frameworks guiding the provision of higher education within the global context. This section explores various enabling international protocols and provisions for Higher Education, as well as collaborative efforts that Higher Education Institutions (HEIs) in Africa have undertaken to improve and implement a global legislative framework for the promotion of higher education. Below are some of the legislative provisions and forums, which provide a framework within which higher education may be accessed. How governments and international institutions can facilitate and enable such a framework will also be discussed here.

3.2.1 Creating enabling platforms

There are several initiatives and platforms that different actors have created as a way of promoting enabling environments for the exchange and sharing of ideas and technologies at international levels. The United Nations Educational Scientific and Cultural Organisation's (UNESCO) initiative is founded on fundamental content and normative tools which are applicable to the higher education setting in a global village (United Nations, 2003). The Universal Declaration of Human Rights (Article 26.1) provides access to higher education as a right for every person. However it has been noted that in today's globalised society many HEIs continue to face challenges of achieving fair access to higher education for all (United Nations, 2003).

Additionally, the World Summit on the Information Society (WSIS) highlights the importance of equal opportunities in the information society that may be hindered by the regular global provision of higher education. Hence, equal opportunity policy framework developments and reviews in higher education are important (WSIS, 2009).

Consequently, higher education stakeholders meet at international conferences and forums to share information and discuss notions concerning the usage of ICT in the development of higher education institutions.

3.2.2 International forums and deliberations

International conferences, higher educational stakeholder meetings and technological stakeholder conferences are all platforms where various players within the ICT domain – and specifically eLearning – interact, meet and share ideas (United Nations, 2002).

The Hamburg Declaration on Adult Learning of the Fifth International Conference on Adult Education, Hamburg (1997), puts the emphasis on the importance of more active policies that are aligned to the development of the necessary skills, which could enable men and women to generate income and engage in sustainable higher educational practices (UNESCO, 1997). At the same time, the UNESCO Recommendation on the Status of Higher-Education Teaching Personnel, 1997 highlighted the issue that

"*member states and higher education institutions should, nevertheless, be conscious of the exodus of higher-education teaching personnel from the developing countries and, in particular, the least developed ones*" (Milne,2005:2; UNESCO,1997:28).

In the World Declaration on Higher Education for the 21st Century (Article 14)[4], it was reiterated that the success of higher education – in terms of funding – demands both the public and the private sectors' inputs. Of great importance is that the role of the State remains critical in this regard (UNESCO, 1998). Furthermore, the intention of the Dakar Framework for Action of 2000 was to ensure that both young and old peoples' educational requirements are met through various learning and life-skills programmes, which are aimed at enhancing all aspects of education (Dakar Framework for Action, 2000).

UNESCO has developed a number of declarations, guiding documents; and it has organised numerous conferences with the aim of enhancing higher education qualifications. The documents aim to assist in the globalisation effects of higher education, which include the usage of ICT, "*the brain-drain, and cultural diversity*" (United Nations, 2002). The UNESCO Medium-Term Strategy (2001-2007) concentrated on globalisation challenges; and this stems from a culmination of previous forums, exchanges and deliberations, which concluded that the key challenges faced in the global higher education environment are: quality in higher education, equality and ease of access to higher education, and making sure that learners are fully equipped to be well-versed decision-makers (United Nations, 2002).

Lastly, it is important to highlight that the UNESCO Universal Declaration on Cultural Diversity emphasised that for developing countries to develop an efficient higher education system, technology will inescapably play a major role – by ensuring access to educational resources (UNESCO, 2002).

The above legal guidelines and forum decisions are intended to provide and lay the foundation for the adoption, motivation and use of ICTs in HEIs. A depiction of some of the motives for the increasing reasons for the adoption of ICTs at HEIs will now follow.

[4] Issued in 1998 and supported again in 2003 by the participants at World Conferences on Higher Education

3.3 Reasons behind increased ICT adoption

Although this section focuses on global trends, reference is made of the South African HE context.
It is generally acknowledged that adopting ICTs for educational enhancement is a "*dynamic and multifaceted process*" (Evoh, 2010). There is recognition of an educational paradigm shift "…*in the light of the knowledge explosion in the knowledge era*…" (Brown, 2005). On the same note there is need for corresponding educational transformation which incorporates key factors such as the capacity to adopt; diverse learning needs; the need to adopt more cost-effective initiatives; innovative educational tools; and benefits for socially excluded groups (Kyobe, 2011; Hepp, Hinostrova, Laval and Rehbein (2004); CERI, 2008); Dellit, Undated); Knowlton, 2008); Foley, Alfonso and Ghani, 2002).

This could possibly account for the changing higher education context in South Africa where increased use of ICTs for teaching and learning purposes is yet to be realised as the country moves towards the knowledge era. Additionally, the need for improved teaching and learning methods has changed the climate and context of higher education in South Africa.

3.3.1 The changing climate of higher education in South Africa

Nations have developed many ICT policy statements. Reviewers highlight the influence of the corporate world and indust**r**y, since these have reported the impact on higher education culture in terms of ever-increasing quality and efficiency (Weber, 2000). Earlier discussions surfaced, especially with regard to debates around *performance* and *efficiency* (Lyotard, 1999:13), as well as the focus being on the student, the workplace, and a career-centred curriculum (Thau and Heflin, 1997:24).

In South Africa there have been key policy positions linked to the provision of ICTs in higher education within national contextual priorities which are aligned to institutional policies for teaching and learning, global trends and standards; and moreover – recent open educational resource (OER) issues
(Cross and Adam, 2007; Hodgkinson-Williams, 2009; Mkhize, 2011).

Furthermore, the main role of educational technology should be to afford complementary strategies, which could address the grave environmental and educational challenges, namely: large classes and the

lack of academic preparedness and integrated curriculum design (Jaffer, Ng'ambi and Czerniewicz, 2007).

However, the question arises whether there is any emerging proof that ICT is indeed constructively impacting teaching and learning processes, especially in terms of how growing eLearning initiatives can contribute to the quality of higher education. The last decade, in that regard, has witnessed a heated debate around the use of so-called "open-source software" and its capability to support quality, but affordable, ICT-based (eLearning) educational practice.

3.3.2 eLearning and emerging open-source software strategies

Globalisation in higher education can be identified by its "*cross-border education*", offered by both public and private educational institutions, as well as non-profit making organisations, using various modes of delivery, including eLearning (Van Damme, 2002:5). As a result, the UNESCO/Organisation for Economic Co-operation and Development (OECD) Guidelines on Quality Provision of Cross-border Higher Education is seen as a crucial facet of UNESCO's actions in the verification of legitimate cross-border qualifications (OECD, 2005).

Consequently, the debate on the effects of globalisation and the free market approach is now being taken up by developing countries, as they start to feel some effects, as discussed below. Due to their readiness to accept supposedly better higher-education solutions from more advanced countries, developing countries risk being free-for-all markets for those who are in the business of exporting higher education, often because of their own local governments' lack of capacity to regulate higher education, as well as the political and governance instability (Van Damme, 2002:5).

This situation is exacerbated by governments' inability to service higher educational institutions; and it has often led to effective decreases in the amounts of state funding and to the even-more aggressive pursuing of students by private institutions – a situation which does not favour the poor students, especially due to insufficient quality assurance (Van Damme, 2002:5).

At the same time, eLearning has surfaced from recent needs based on the knowledge era. Therefore, educational technologies, such as discussion forums, synchronous chat tools, and knowledge repositories that include keyword search facilities have been adjusted to eLearning environments (Wong, 2003). As a result thereof, eLearning is frequently publicised as the "magic agent" that will produce changes to schools and HEIs, especially in terms of changing student learning processes. Nonetheless, it would be of importance for educators to substantiate the relevance of eLearning and its impact (Woodhead, 2003).

Hence, there are examples of emerging strategies, such as the *Information Technology for Learning in a New Era: Five-year Strategy* (UNESCO, Bangkok), which aimed to assist higher education with curriculum transformation. It supports the educators in the adoption of eLearning practices to enhance their teaching-and-learning practices (Woodhead, 2003; Kong, 2008:826), and in their consideration of flexible methodologies of practice, which include asynchronous and synchronous tools (Wong, 2003).

These pressures and emerging strategies, as a result of changing higher education needs (as described above), have also born witness to the rising design and development of open-source software in education. Open-source software claims to comprise "*efficient e-Business IT systems*" for various organisations (Marinela and Traian, 2009:972); and it also presents the possibility of being applied to open and distance education (Pan and Bonk, 2007). Open-source software could be used to assemble "*innovation, new knowledge building, application and the implementation*" of open-source projects (Shoshana, 1998:31).

As managers, theorists and academics have, for the last three decades, engaged in discussions around crucial technological changes regarding the manner in which people connect to their institutions and communities, there has also been an increasing expansion of open-source software – with claims that it has established new structures or "*centres of power*" within institutions (Shoshana, 1998:31).

Hence, the following sections will discuss the various perspectives on open-source software developments and its perceived contribution to education. Moreover, it will reflect on actual experiences in a higher education setting, where there was a strong sponsorship for open source.

3.4 Open-source software and its contribution to educational institutions

From the early 1940s, free and non-proprietary software has been around, but it was limited in its use and popularity to only a small group of engineers and scientists and certain people who had the funds to use the previously costly mainframe computers. Free Libre Open-Source Software (FLOSS) incorporates many types of applications and its origins are closely attached to portable operating systems (NACI, 2004). Consequently, the internet has further supported Open-Source software communities globally, in particular with special projects, such as the development of stand-alone applications (NACI, 2004).

The development of the Open-Source version of UNIX, namely the prominent GNU/Linux operating system, is a result of movements, such as the one pioneered by Richard Stallman "*against the proprietisation*" of software (Lyotard, 1999:6; Markus, Manville and Agre, 2000:18).

In addition, open-source communities claim to offer much to educational and research-based institutions and students alike. This contribution is largely due to the fact that since most educational institutions lack funds, Open-Source software provides a cheaper alternative to bridge the educational technological gap (Micklethwait and Wooldridge, 2000:87). Even though there is a misconception of a non-visible line of support, Open-Source has support structures set up through dedicated forums, listservs, mailing lists, websites and blogs.

Since its very essence is based on project sharing, support for open-source solutions is free (Stalder and Hirsh, 2002). This support, even though it is not visible or line-based, is provided by the users of the applications, the programmers and the "fanatics" of Open Source. Thus, according to Stalder and Hirsh (2002), if a problem with an Open-Source solution is being experienced, the chances are that someone else has already developed a solution to that problem. Moreover, claims of efficient support highlight the fact that "*a post on one of the forums can return an answer within minutes...and one is able to...have many times more support than they would through a closed-source vendor*".

However, this study has also investigated the lack of timeous, efficient support and maintenance of an Open Source Learning Management System (LMS) at UWC that contradicts the statements regarding efficient support by Stalder and Hirsh (2002:5), who argue that the Open Source community support is

easily accessible and beneficial. The study will also show that despite the fact that UWC is one of the main players in the African Virtual Open Initiative Resources (AVOIR) (see below section, 5.1) and that the Free and Software Innovation Unit (FSIU) is housed on campus, the UWC eLearning unit has experienced a profound lack of back-end support processes, in order to deal timeously with any implementation problems.

This lack of support has often seriously affected online teaching-and-learning processes and, in turn, it has caused great anxiety for the front-end eLearning support team.

The next section (3.4.1) further reflects on how Open-Source software development can supplement and enhance educational processes, especially in the area of internships.

3.4.1 Open-Source software development internships

It is possible to infer that researching and using Open-Source software will, to a great extent, augment computer science and information systems' education (Shockey and Cabrera, 2005). The establishment of the Standard Network Access Protocol (SNAP) Development Centre at the Puerto Rico International American University afforded a "*bridge between the focus on academic fundamentals in the education of computer science and the demands of the real world*", thereby providing student researchers with a "*finishing school*", which pulls together various skills and applications to tangible, realistic tasks (Shockey and Cabrera, 2005:1).

Students are able to operate in bigger teams, and this enables them to communicate regularly; to affirm technical skills (Johnson-Eilola, 2002:34); to recognise previous work; to retrieve the code; to further build and maintain; and to conceptualise the interactions between various stakeholder activities, namely: "*the project, the developer, and the user community*" (Lerner and Tirole, 2001:6-7).

Consequently, reference is also made to this in the case study of this thesis, whereby evidence exists at the University of the Western Cape of students (linked to internships) who have directly benefited from gaining software development skills whilst working on Open-Source initiatives at the Free Software

Innovation Unit (FSIU). Many of these students have moved on to work in other enterprises – further contributing thereby to Open-Source developments in South Africa and globally.

The following section takes the open source discourse further, in terms of open courseware and its contribution to education. This initiative relates to the earlier work of Weber (2000), who stated that open-source developments strive to achieve quality "*against the social bonds of proprietary software*".

3.4.2 The Higher Education Open Courseware (OCW) movement

The Open Courseware (OCW) project was launched in April, 2001 by the Massachusetts Institute of Technology (MIT), with the aim of affording educators and students free access to their online course materials (Caswell, Henson, Jensen and Wiley, 2008). Open courseware is a significant effort in education, enabling the free publication of course materials; and it may be able to assist educators in getting access to valuable resources (Micklethwait and Wooldridge, 2000:6; Markus, Manville and Agres, 2000:18; Jarvis, 2001:7).

Although Open Courseware may indeed assist educators, it is quite often forgotten that in higher education settings a significant eLearning support structure has to be in place, for example, internal marketing and resources to actually place the content online. Keats (2009: 51) at the University of the Western Cape, emphasised that there is a need for the institution to develop sustainable processes "*for the implementation of the Open Courseware strategy*"; and there is a need for marketing and campaigning the strategy by the eLearning support unit.

Hence, the implementation of the strategy is linked to the current eLearning Development and Support Unit (EDSU) of the institution (Keats, 2009: 47). However, Keats (2009) does not alert the reader of the great effort needed to engage the educator through the various stages of OCW from conceptualisation to publishing online. Neither does Keats indicate how OCW relates to the current 'private online courses' of educators; how the eLearning support unit will be burdened with the actual publication of the online courses; and how important the continuous internal marketing efforts of an eLearning support unit are for this initiative.

The vision that the University of the Western Cape ‘‘*would be consumers, producers and modifiers of existing F/OER materials and would have both the technology and the institutional process in place to support this vision*” (Keats, 2009:51), is currently coming to the fore, as the Open Courseware movement site of the institution already hosts online modules from various disciplines. At the same time, this researcher will reflect in the case study, presented in this thesis (refer to chapters 5-7), how an unstable eLearning platform and the lack of dedicated back-end support processes can hinder the process of buy-in into open courseware by educators.

It will be illustrated that it is difficult to effectively promote an OCW strategy, whilst at the same time dealing with a campus community that is becoming increasingly discontented with being exposed to repeated unkempt versions of a home-grown Open-Source eLearning system.

Thus the following chapters will investigate and reflect on an ironic situation where despite the fact that UWC has been designated onto the Board of the Open Courseware Consortium. Most of the campus community has reached a stage where they would not consider OCW initiatives because they link all the Open-Source initiatives to the current home-grown open-source learning management system and its related support problems.

In this thesis the situation will be addressed where the buy-in of end-users has been convoluted because internal processes regarding the ‘‘*building institutionally sustainable processes and further putting in place technologies to implement them*” have taken far too long (Keats, 2009:54). In addition, this case study will further add and highlight how many unstable versions of the institutional home-grown Open-Source learning management system have added to long-winded, complex implementation processes, resulting in a resistance against OSS amongst educators.

The next section will thus reflect on some of the strengths and weaknesses of Open-Source development in a higher education environment. It is some of these weaknesses that are related to institutional support processes that can create adoption problems for an eLearning institutional implementation plan. Hence, the question arises whether the development of open- source software, and especially the development of

open-source learning management systems, could be perceived as quality software, which impacts accessibility, performance and efficiency – as claimed in Weber (2000).

3.5 Open-source development: The "bazaar" versus the "cathedral of the orthodox model"

There is a growing acceptance around the globe, and in particular in Africa, of free and open source software. This growing approval stems from the standards within which FOSS operates, further adding to speedy developments (Pavlicek, 2000:76); and this is solidified by earlier work highlighting the fact that the major IT companies, namely: IBM, Hewlett Packard (HP), Sun and Oracle started communicating their growing support of FLOSS initiatives a few decades ago (Reich, 1991:21).

Not only is FOSS being advanced in the public sector, but there was also a growing push for its usage within the private sector, notably in New Zealand (Wong, 2004:3, 19). Besides, in the South African framework, there is legislation recommending the usage of FLOSS as an option within the public sector (SITA, 2008). From the outset, South Africa was the first African country to promote and use FOSS (Reich, 2001:22). However, since 2004 a growing number of African governments have developed policies and aligned national and industry developmental initiatives with FOSS.

This growth in Africa has been met with encouragement from various stakeholders involved (SITA, 2008), probably due to the nature of FOSS development. FOSS development is different from propriety software, due to its nature of collaborative participation by volunteers from all corners of the globe that make use of various communication platforms to distribute their own modules to peers for review and integration (Johnson-Eilola, 2002:89). Consequently, Open- Source software development processes are, therefore, referred to as a "*bazaar*" (Johnson-Eilola, 2002:89), in comparison with the "*cathedral of the orthodox model*" (Torvalds and Diamond, 2001:27).

Another description used is the "*cooking pot model, where single ingredients merge to create a product of significantly greater value than the sum of the individual ingredients*" (Ghosh, 1998 cited in Lerner and Tirole, 2001:67).

However, the FOSS development model also presents some challenges. General confinements of open-source packages include: (i) An uncertain estimation of the exact costs; (ii) deprived user-friendliness standards; (iii) a lack of interoperability; and (iv) a lack of support for multimedia components, such as video-conferencing **(**Hotrum, Ludwig and Baggeley, 2005). In addition, many Open Source Learning Management System (LMS) platforms are often not able to integrate with other institutional registration and employee management applications (Bailetti, 2004).

Moreover, there exists a limited value by open source developers for the provision of timeous tasks, such as documentation and ongoing support (Weber, 2000:28). Accordingly, this thesis will investigate the weaknesses of Open Source development, its maintenance and support initiatives in the literature; and empirically, in a case study of the University of the Western Cape. In particular, the impact of a lack of dedicated back-end support, processes and documentation, which could hinder the growth of eLearning initiatives, was studied.

Distinctive consideration was given to the trustworthiness and reliability of a home-grown Open Source eLearning system (in the case of UWC a product of the collaborative development of institutions in the African Virtual Open Initiatives and Resources [AVOIR] network).

3.5.1 The African virtual open initiatives and resources (AVOIR)

The African Virtual Open Initiatives and Resources (AVOIR) aims at building capabilities in the areas of software engineering in many countries across Africa by using Free Software (Open Source) as the vehicle. AVOIR consist of a "*partnership of sixteen (16) African universities in an alliance*" with partners in North America, Europe, Kabul and Afghanistan (isiAfrica, 2008). AVOIR is a network, participating in the "*development, deployment* and *support*" of open-source software. Moreover, AVOIR "*is a network with a node in each member institution. Each node participates in the development, deployment and support of software, seeks business and partnership opportunities that lead to sustainability, implements software in support of their institutional requirements*…" (isiAfrica, 2008).

The collaborative development and networking of these universities has resulted in the creation of the Chisimba framework, which is "*a Web 2.0 enabled rapid application development framework for creating web applications that are platform independent…consisting of …, over 100 modules of functionality, which are already available; and these can be used out of the box to create a Content Management System; a feature-rich eLearning platform; a group-based collaboration platform; and a blogging system that allows posting from mobile phones, and many other applications*" (Scott, 2007:54).

However, reviews founded on the quantity of attributes, may not always be indicative of users' feedback and the educational usefulness of a product. Hence, a large amount of tool incorporation may actually be worthless for online learning activities (Hotrum, Ludwig and Baggeley, 2005). Moreover, if the core features necessary for effective online teaching and learning are not appropriately tested and quality-assured, the users will not be interested in any new features presented to them. Thus, a discussion below follows in relation to claimed open-source benefits.

These benefits will be further investigated in the case study, whereby actual experiences within a higher education setting will be compared to certain claims made by open-source business models.

3.6 Claimed Open Source 'benefits'

A number of programmes and blended Open Source business models and operations, such as the Shuttleworth Foundation, Schoolnet, Hewlett Packard (HP) and the CSIR Open Source Centre, have been acknowledged in Southern Africa. However, it is often difficult to assess the effect that open-source programmes have on specific domains (Stalder and Hirsh, 2002). Here are some of the claims made by FOSS proponents: (i) The cultural community phenomenon; (ii) flexibility in use; (iii) increased competition and quality; (iv) users' independence from suppliers; and (v) ease of use. These claims will now be further elaborated in more detail.

A cultural community phenomenon: FOSS means more than just software. It represents a cultural experience with underlying software development; and it has as its aim the improvement of society at large. FOSS initiatives link huge numbers of people from various networks, emphasising the

collaborative work of communities (Dillon, 2007:49). Therefore, many large corporates make use of FOSS collaborative development teams, whilst they endeavour to decrease costs and the replication of ICT functionalities (Stalder and Hirsh, 2002).

Moreover, as these collaborative communities are increasing, educators also begin to comprehend the benefits of open-source software, as they integrate them into their teaching practices (Dillon, 2007:49). Research further claims that the expansive use of open-source for effective teaching and learning guarantees immense possibilities for the community in general and for higher education institutions in particular (Pan and Bonk, 2007). In addition, open-source software has become a huge business, challenging the cynics. Governments are requesting the use of open-source software in various projects; and globally, the community of users has increased to more than 350 million (Dare and Anderson, 2009).

***Flexibility in use**:* FOSS claims to have an "update cycle", which is more approachable to user needs than that of proprietary software, because it is portable and accessible on a variety of platforms (NACI, 2004). At the same time, the installation of Open Source software can involve a steep learning curve, and this may require expert IT support. However, it is apparent that the emerging FOSS options represent a vital and viable alternative to the costly, proprietary LMS software programs available, especially in developing countries (Depow, 2003).

***Increased competition and quality*:** Open source has demonstrated that it can provide high-quality software. The use of FOSS "*has now spread from infrastructure and middleware to business-critical applications, including business intelligence, enterprise content management and customer-relationship management*" (Marinela and Traian, 2009:973). The community of open source software developers is able to compete in a market that was once inaccessible (NACI, 2004). Furthermore, these emerging open-source movements, offering free (Libre) products, claim to produce the same or even more enhanced products than their proprietary counterparts (Depow, 2003). However, in contrast, as FOSS products do not have a sole owner establishment, it is also deemed to be uncared for. Thus, collaborative development networks and professionals who are installing products on GNU/LINUX will have to deal with this perception (Stalder and Hirsh, 2002:6).

Users' independence from suppliers: A recent study highlights the contribution of open-source software, in terms of "*the resulting knowledge of software tools, features, and functionalities among such a large number of college-educated individuals yields considerable 'people power' when it comes to the development of open-source software. With such power, open-source solutions offer opportunities not only to control costs, but also expanded access to the tools students need to learn, as well as engaging in collaborative projects*" (Pan and Bonk, 2007).

Earlier work emphasised that FOSS does not rely on a sole support resource, as in the case of proprietary software; and it thus decreases the risk, and enables the development of an inexpensive support market (Stalder and Hirsh, 2002:6).

Ease of use*:* FOSS development initiatives have over time been criticised for focusing more on technical development issues rather than on front-end users. Thus, a more recent trend is improved, user-friendly interfaces (Stalder and Hirsh, 2002:6). This study will later in the case study of UWC reflect on the contribution of the eLearning (front-end user) support unit, way beyond the call of duty, to the development of an open-source learning management system in terms of design, layout, look-and-feel and the overall user-friendliness of the system.

Many advantages of FOSS are acknowledged and will be investigated to ascertain whether they have been realised. This study will investigate these benefits and whether they are realised within the case study of the University of the Western Cape. The following section further discusses the growth of open-source initiatives in the South African context, and its growth in national higher education institutions.

3.7 Open-Source in the South African context

Within the South African context there is an initiative to cultivate public support for the development of FOSS, so as to meet the national technological needs. Free and Open-Source Software (FOSS) is a national main concern in South Africa, acknowledged as a manner to acquire "*quality, lower costs, create agility and foster innovation*" (Keats, 2008:1). Mark Shuttleworth funded and drove the Go Open-Source campaign in South Africa, which took place from 2004-2006. During this time, the campaign focused on

the distribution of open-source software on CD-ROM, a television series, and the endorsement of associates to the Geek Freedom League.

The campaign received support from many non-government organisations (NGOs), and this led to the approval by the SA Cabinet of an open-source policy and strategy (Lewis, 2006). Consequently, a policy and strategy for FOSS implementation, developed by the Government Information Officers' Council (GITOC), was accepted in 2007 by the South African government. It was developed to ensure that the Government makes use of FOSS benefits and strengthens further FOSS development (Keats, 2008:1).

Following the approval by the South African government of an open-source strategy, various open-source projects, such as the joint open-source anti-corruption management system by the Department of Public Service and Administration (DPSA) with CSIR[5], have been implemented. The Centre for Public Service Innovation also initiated the mobile access project to government departments in the underprivileged and rural sections of the country (Sehlapelo, 2005:15) For a developing South Africa, FOSS initiatives provide rewards related to the social, economic, skills and business development of the country (inWEnt, 2010)[6].

Currently, there is a sound foundation of open-source skills in South Africa. Thawte Consulting[7] has built a prosperous business model out of the open-source community, while Shuttleworth's Ubuntu Linux[8] has attracted the attention of many foreign organisations. Furthermore, South Africa has become the testing ground for international organisations who wish to roll-out plans for complicated projects (Wills, Pater, King Z-Coms, Booi, and Netshisaulu, 2005). Microsoft South Africa (SA) and Translate.Org[9] were recently presented with the Multilingualism and Nation Building e-Business Institutions of the Decade Award. Microsoft SA has been involved in the continuous development of software and hardware to assist users and organizations with daily operations, since 1992; and Translate.Org has been part of the translation of open-source software into the eleven official languages of South Africa (PanSALB, 2008).

[5] CSIR: Centre for Scientific and Industrial Research
[6] inWEnt: Internationale Weiterbildung und Entwicklung gGmbH
[7] https://www.thawte.com/lpsem/?sl=t29100223210313007&gclid=CNHPg86W160CFcsKtAoddmw8lg
[8] http://www.ubuntu.com/news/newmedia
[9] http://translate.org.za/

In addition, the Meraka Institute[10] has initiated internship and student programmes with the main aim of assisting the economic and social development of South Africa. With the emphasis on human capital development, the programme gives interns the opportunity to engage in software development in terms of "*source-code management*" and "*soft skills*" (Butgereit, 2007:1). It is also apparent that open-source initiatives are moving forward in national HEIs (Lakhan and Jhunjhunwal, 2008) with many HEIs in South Africa striving towards the full utilisation of technology within their day-to-day practices.

However, this technology drive has been hindered by a lack of funding, time-constraints and technological implementation support (NACI, 2004). A study by Hart (2003) explored the implications of Open Source for HE settings, highlighting Open-Source software as a substitute for the implementation of ICT within HEIs. He also pointed out that in terms of development, FOSS encouraged collaboration with regard to the modification and redistribution of source code and Creative Commons Licensing.

Based on this collaborative nature, FOSS in some instances has been used as the standard software by academics. Thus, in the UK, FOSS (based on its preferred use) was recommended as the direction that should be exploited for government research and software development (Peeling and Satchell, 2001:25).

Following, these recommendations – if they are adopted by South Africa – FOSS can be supported for implementation by both the public and private sectors, and be used by its universities and research councils. This would be a benefit at various levels in terms of access to technology. The collaborative nature of FOSS would further enable the growth of graduate numbers who are valuable to industry and the community – especially as the approximate number of ICT experts is currently considered to be between 54000 and 74500 (ISETT, 2003).

Furthermore, in an updated ISETT report, it was highlighted that even though human resource development is vital to ICT development, South Africa still struggles in terms of "*educating, training and integrating*" a huge section of its society. This section of society is not a part of the information society; therefore, there remains a shortage of ICT skilled workers DOC, 2010), especially with major migration of South African ICT skilled workers to other parts of the world (DTI, 2005:1).

[10] http://www.csir.co.za/meraka/

Furthermore, it must be noted that a small number of these South African ICT professionals and experts are responsible for driving ICT initiatives in South Africa within HEIs and other organisations. This small number includes those that need to actually drive eLearning implementation and adoption in HEIs, with the emphasis on open source and proprietary learning management systems. They need to drive the adoption of learning management systems, which as Depow (2003) states, aims to allow more educators to explore online teaching methods and bridge the gap – whereby some educators progress and easily make use of online learning material, whilst others have to exert great effort – even with basic skills.

Moreover, they are expected to drive the adoption and application of learning management systems within a higher education environment, as noted by Van Rooij (2007:191) - where progress regarding the development of open-source policies and procedures relates to conformity and safety precautions.

Thus, the following section will further discuss learning management systems (LMS) in relation to the adoption and implementation of open-source learning management systems; and furthermore, this will be done in relation to the adoption of learning management systems within higher education institutions in the Western Cape.

3.7.1 Learning Management Systems (LMSs): An assortment of Open-Source packages

The developmental approach to eLearning requires a student-centred focus, facilitating student utilisation of tools to assist their shared, problem-based and independent tasks (Downes, 2004:18). A Learning management System (LMS) is not an entirely new idea. LMSs have been around for approximately forty (40) years (van Biljon and Renaud, 2009). LMSs "*manage learners and facilities, launch and track online learning, keep records of the activity… provide course authoring and some content management*" (McIntosh, 2011:5). Moreover, Downes (2004) "…*and provided that care is taken to ensure the learners have the opportunity and incentive to obtain a deeper and broader education that the just-in-time world of learning provides*…".

As the fundamental aim of embarking on eLearning processes is learning, a LMS entails an important arrangement of hardware and software components within an environment that enables eLearning processes. The LMS can also be referred to as a "*platform too*l" in which eLearning activities are conducted (Carliner, 2005:67). In some respects, the claims of superior and user-friendly LMS are related to the attributes of pleasing visual design, easy navigation, insightful selection of specific online activities, and the provision of useful online help documentation (Depow, 2003).

Furthermore a LMS consists of various functionalities including integrated web-based instruction (WBI), and differs from a course management system (CMS) in terms of providing an all-encompassing manner of contextualising a system, thereby integrating eLearning within a bigger picture of education, and providing a flawless connection to eLearning, and enabling the application of a compilation of "*cognitively oriented*" teaching methodologies (Clark, 1996:29) – all within a constructivist learning domain, making use of the features and resources of the World Wide Web (WWW) (Relan and Gillami, 1997:33).

A LMS can be employed as an impactful, flexible teaching-and-learning mode of delivery, which should certainly be accessible; it should provide flexible storage space; it should present various choices; and it has an advanced publishing layout (Henke, 1997; McManus, 1995:34).

As higher education institutions make attempts to deliver with limited resources and increasing technological costs, a few of them are resorting to the application of Open Source LMSs and portals. It is assumed that these Open-Source applications will assist with the development of "*pedagogically sound learning environments, while increasing technology efficiencies*" (Van Rooij, 2007:191). However, all these viewpoints are not undisputed. The next section deliberates on the adoption of LMSs within HEIs in the Western Cape; and it reveals that developments regarding the selection of learning management systems indicate that WebCT/Blackboard is no longer the popular choice of LMSs at HEIs in South Africa, as was found by Stoltenkamp (2003:20) at the time of a study on eLearning support at an HEI in the Gauteng Province, South Africa.

Substitute LMSs can currently be attained from a vast and promising assortment of non-proprietary Open-Source packages (McIntosh, 2011; Depow, 2003).

3.7.2 LMS adoption in HEIs in South Africa

The adoption of LMS in the Western Cape is compared to other South African renowned universities, since eLearning has grown in South African HEIs, regardless of infrastructural limitations and diverse institutional practices and cultures. ICTs are used by most staff and students for teaching and learning activities, even though such usage is currently restricted to well-known technologies (Brown, 2007:75), such as learning management systems (LMSs).

In a survey conducted amongst e-Learning managers in South Africa, a common concern affecting eLearning implementation was highlighted, namely unstable and unreliable LMSs, even though the institutions were not all using the same systems (Brown, 2007:74). Equally important, the question remains whether Open Source can be applied to major institutional higher education domains of administration and learning management systems. Moreover, some managers are cynical with regard to how complicated administrative and learning management systems can be established via a voluntary community Open-Source model (Courant and Griffiths, 2006: 16).

Stellenbosch University (Western Cape, South Africa) has made use of a Learning Management System, WebCT (now named Blackboard after a takeover[11]) since 1999. Training and support for the LMS is provided by the Centre for Teaching and Learning (CTL). Usage of the LMS has grown extensively in terms of e-assessment, which currently places a strain on the technological infrastructure available to students and requires more support from the lecturers with regard to e-assessment (Van Der Merwe and Van Dyk, 2008: 493).

The University of Pretoria and the University of Johannesburg (earlier known as Rand Afrikaans University or RAU) also use Blackboard. The University of the Western Cape (UWC) has initiated the

[11] For example, the University of Johannesburg (earlier known as RAU); and the University of Pretoria also make use of Blackboard

African Virtual Open Initiatives and Resources (AVOIR) Project, a collaborative initiative of many African HEIs. It has developed an Open Source LMS, a Knowledge Environment for Web-based Learning (KEWL) (Isaacs, 2007:19). Three South African universities, namely the University of South Africa (UNISA), the University of Cape Town, and North-West University are engaged in the Sakai SA Collaboration and Learning Environment (CLE), making use of the SAKAI learning management system (Isaacs, 2007:20).

SAKAI, a global consortium of over one hundred HEIs, also engages in the joint development of an Open-Source system to support teaching and learning activities (Isaacs, 2007:20).

Furthermore, recent research has observed how HEIs in South Africa (especially in the Western Cape) are increasingly embracing ICT, highlighting the relationship between technology and a transforming HE setting, the driving forces behind adoption, the notions of ICT, the apparent influence of ICT on traditional teaching and learning processes, and the transformation that both the academics and IT facilitators in HEIs are experiencing (Mlitwa, 2005; Czerniewicz and Brown, 2005; Czerniewicz, Ravjee, and Mlitwa, 2006).

At the same time, Mlitwa (2005) reflects on examples of the usage and adoption of ICT in the Western Cape, and deliberates on the situation whereby there is evidence of higher levels of technology attainment, but less evidence of usage. He further employs this evidence to make a case for a much-needed socio-technical network whereby, "*through a LMS, eLearning qualifies as a socio-technical network that incorporates a computer, network, applications, learning material, learners, educators and/or mediators*" (Mlitwa, 2007:63).

There are currently four major universities in the Western Cape Province, namely: the University of Cape Town (UCT), the University of Stellenbosch (US), the University of the Western Cape (UWC) and the Cape Peninsula University of Technology (CPUT). At each of these institutions, strides have been taken in achieving varying levels in the implementation of LMS. A reflection on the implementation of various kinds of LMS at these institutions revealed some interesting aspects (Czerniewicz and Brown, 2005; Mlitwa, 2006).

At the University of Stellenbosch, the option to employ a proprietary LMS was engaged by top leadership structures and forced on educators, resulting in extensive adoption – due to a coercive approach with little stakeholder engagement, and the provision of incentives (Van der Merwe, 2004:46). While this may be true, Mlitwa (2006) reflects on the use of the Learning Management System, WebCT (now Blackboard) at the University of Stellenbosch, specifically on the exponential growth since 1999 and the voluntary bottom-up drive of a group of lecturers (the early adopters).

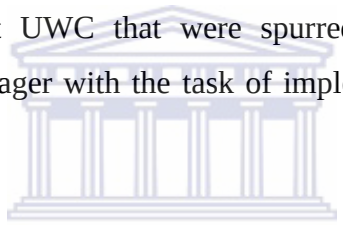
Reference is also made to the e-Campus initiative implemented in 2002, which now provides a concrete framework for the further expansion of eLearning. E-Learning targets were formulated, such as that at the end of 2002, when thirty per cent of all modules should have at least a minimum online existence (Mlitwa, 2005:56). Even though the same proprietary LMS (WebCT) is used at the Cape Peninsula University of Technology, a lack of strategy formulation and a forum that enables stakeholder engagement was observed. Moreover, both higher education institutions at that time were using the LMS merely as a means of transporting learning material (Mlitwa, 2005:56). In contrast to this coercive approach, the University of Cape Town (UCT) has engaged in an open consultative approach, with educators and students regarding their usage and decisions (Czerniewicz and Brown, 2005:98).

At the time of the study, educators within the institution had a choice between proprietary (WebCT) and open-source home-grown systems (e.g. Connect), or even the choice of not using any system at all. The study further highlights the fact that the extent of adoption had not been determined, and moreover, that the educators do not have enough time to engage with pedagogical issues (Czerniewicz and Brown, 2005:98). Hence, it has been the responsibility of the Multimedia Education Group (MEG) at UCT, established in 1997 – currently existing as the Centre for Educational Technology (CET) – to deal with these strategic, policy and implementation issues.

The Centre has grown as a research-based institutional initiative (Czerniewicz, Ngugi and Rose-Innes 2007:95). Recent eLearning developments at UCT reflect an institution that has joined the Open-Source Consortium, Sakai (with other South African HEIs, such as UNISA and the University of KwaZulu-Natal). The Sakai Open-Source Consortium is linked to a big brand name: the Massachusetts Institute of Technology (MIT).

Similarly, at the University of the Western Cape (UWC), users make use of an Open-Source LMS. However, this is a home-grown open-source system that was, as stated by Mlitwa (2006:11), facilitated by a champion, Professor Derek Keats, the then Executive Director of Information and Communication Services (ICS) at UWC. At the time of Mlitwa's study (2005:11), there were challenges related to the adoption and usage; and it was also uncertain if the academics comprehended the possibilities the LMS presented to eLearning.

Stoltenkamp, Kies and Njenga (2007) elaborated on this home-grown Open-Source learning management system and focused in particular on the development and launch of a new version of the eLearning platform, named: Kewl.NextGen (KNG), as well as the establishment of an eLearning support unit at UWC (in May 2005) that was aimed at offering training and support to academic staff and students across all faculties of the institution (Stoltenkamp, Kies and Njenga, 2007). This research and thesis reflect on those eLearning developments at UWC that were spurred by previous work and resulted in the employment of an eLearning Manager with the task of implementing eLearning across all the faculties within the institution.



However, non-existent literature creates a complex situation, whereby it is not easy to determine the significance of these eLearning developments and the role they play in the national ICT higher education discourse. Hence, this study will endeavour to contribute to these discussions on ICT in higher education by undertaking a thorough analysis of the eLearning initiatives at UWC.

It is regrettable that adequate research on the integrated association between institutional changes and technology does not exist (Mlitwa, 2005:58; Hanseth and Monteiro, 1998:34). Yet, even though it was found in a study in HEIs in the Western Cape that LMSs are frequently employed as a "*transfer medium*", and not in an actual constructivist manner (Mlitwa, 2005:56-57), a more recent report on ICT-based education in South Africa highlights motivating developments in eLearning occurring – not only within the structure of well-known proprietary LMSs – but also in well-known Open-Source systems (Czerniewicz, Ngugi and Rose-Innes, 2007:97).

At the same time, recent developments in eLearning at HEIs across South Africa reflect institutional changes in terms of much-needed central support skills –"*in both ICTs and pedagogy*". These are accessible to academic staff that are clearly overloaded and lack the necessary skills to use the eLearning tools effectively, as well as requiring support to assist them in their transformed working environments (Czerniewicz *et al.*; 2007: 97). ICT skills undoubtedly have an impact on the use of LMSs, since a critical lack of ICT skills could lead to one not being able to access the LMS at all (Pretorius and van Biljon, 2010).

There still remains a contradiction in the fact that lecturers confess to using various pedagogies when making use of LMSs. Yet, the actual usage across four institutions in the Western Cape show tendencies related to functional perspectives rather than to the claimed behaviourist or constructionist views (Mlitwa and Van Belle, 2010).

Furthermore, the exponential growth of eLearning at the University of the Western Cape (UWC) has also not come without exponential struggle, specifically in the area of dedicated back-end support (Stoltenkamp, Taliep and Braaf, 2011). An eLearning front-end support domain has been the main driver for growing eLearning initiatives in a unique environment, where there has been a strong sponsorship for a home-grown open-source Learning Management System (LMS). Conversely, this support unit has experienced a lack of any sound infrastructural foundation, including the lack of processes and the management thereof.

Currently, there is evidence of a continuum (2005-2010), highlighting repeated LMS crashes, which is increasing pressure on lecturers and the eLearning support team for an alternative, stable Open-Source LMS (Stoltenkamp, Taliep and Braaf, 2011).

On the whole, it is quite clear that an LMS is not sufficient to motivate the effective usage of eTools; and that the "*nature of the task relative to the uses of the tool, the rules of its usages, as well as the social context further determine usage or non-usage of the system*" (Mlitwa and Van Belle, 2010:3); and that the determinants of usage in developing countries, namely user-friendliness, usefulness and social factors, are also imperative in the South African context (van Biljon and Renaud, 2009).

Hence, this thesis endeavours to explore a case study of the complex, integrated eLearning support developments within a specific context in South Africa, namely the University of the Western Cape (UWC). Such an integrated eLearning system is viewed by this researcher, as a basis for any relevant strategy and policy development.

3.8 Summary

Ubiquitously, ICT has realised unprecedented high levels of development. This has affected both industry and education, especially higher education. International protocol and legislative provisions guiding ICTs have opened up opportunities for the use of these technologies in the global society, industry and higher education. Increased demands for higher education, skills and skills development have necessitated the use of ICT in general, and in eLearning in particular. The open-source/proprietary debate has also increased in intensity, where it became obvious that open source was becoming popular because of its ability to provide students and researchers with unrestricted access to information.

Responding to the established objective: "*To explore and apply relevant literature, in order to determine the new demands of teaching supported by eLearning in relation to learning theories and global trends*", this chapter has promoted the argument for the increasing adoption of ICT in HEIs, especially in terms of the adoption of either open-source (preferably) or proprietary LMSs. Various disparities were discussed in terms of adoption and usage trends in South African HEIs.

This chapter has answered the established sub-questions:

- How do global trends in eLearning impact its implementation in HEIs in developing countries?
- How can HEIs create enabling environments for the transformation of organisational culture, reflecting blended eLearning practices and communities of practice?

The main research question: "What are the factors that contribute to the successful implementation of eLearning at the University of the Western Cape (UWC), and what is the way of optimising these factors within an integrated eLearning Model?" The following chapter (4) will look at the empirical research design and methodology, in terms of exploring the implementation of eLearning initiatives at a HEI with a strong stakeholder sponsorship for a home-grown open-source learning management system.

This explorative study (further discussed in Chapters 5 to 7), incorporates a case-study methodology; and it highlights how the University of the Western Cape is taking part in the Knowledge Society. The development of a home-grown open-source Learning Management System (LMS) at the University of the Western Cape has determined how individual lecturers can enhance their traditional teaching-and-learning activities; how the eLearning system is developed in collaboration with developers in other African universities; how this leads to individual research; and how collaborative research with other national and international HEIs and research can be linked to the needs of industry.

The University of the Western Cape has become part of a system of innovation that "*consists of flows and relationships, which exist among industry, government and academia in the development of science and technology*" (Houghton and Sheehan, 2000:12).

CHAPTER 4

EMPIRICAL RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

The previous chapter explored debates around the use of technology at the global level, and how this has impacted on current practices in HEIs. Building on the constructs of the previous chapters, this chapter discusses the empirical research design and methodology that was used to collect and analyse the data for the longitudinal study. Longitudinal studies "*are often the best way to study changes over time*" (Babbie, 2008:112). The study was exploratory in its nature, as it investigated the relatively new field of eLearning, and in particular the implementation of eLearning initiatives in a higher education institution (HEI) in South Africa, with a strong stakeholder sponsorship for a home-grown Open Source eLearning system at the University of the Western Cape.

The purpose of the study is to examine the factors that contribute to the successful implementation of eLearning, in order to eventually propose an integrated eLearning model for the University of the Western Cape. It was also envisaged that the integrated eLearning model would be of value to other HEIs in developing countries grappling with the challenges of eLearning implementation – specifically, the implementation of Free and Open Source and home-grown eLearning systems.

This chapter thus reflects on the empirical research design and methodology of the study. The empirical research design incorporates the case study of The University of the Western Cape. Methodological triangulation, was applied to the study for the purpose of minimising personal bias and subjectivity and for improved quality of data. Purposive and random sampling procedures were used to identify the participants in the study.

The data collection was conducted in three phases: from September 2005 to October 2011. *Phase 1* involved an extensive literature study related to eLearning implementation within HEIs, with the specific focus on an awareness campaign within the University of the Western Cape. The researcher also used the

institutional eLearning strategy document (currently the only existing policy document on eLearning at UWC) as a reference point in the data-collection process.

Quantitative evidence was gathered, and is presented to illustrate the results of the progressive non-coercive awareness campaign. Moreover, the quantitative statistics supported the qualitative evidence of the success of the implementation approach at UWC. *Phase 2* involved an email questionnaire, which was administered to a purposive sample of academics, who voluntarily enquired about eLearning training and the possible use of the eTools of the Open Source eLearning system. It was also presented to institutional leaders, eLearning support staff and eLearning experts, as well as consultants, at other higher education institutions (HEIs) in South Africa.

This second phase also involved interviews with institutional leaders, Information Technology (IT) support staff and eLearning support staff of UWC. The researcher purposively selected these participants, as they play a key role in the successful implementation of eLearning. Further interviews were conducted in *Phase 3* with a random sample of academics and students within the institution, making use of a structured questionnaire (both verbally and online). Additionally, the researcher employed and analysed an eLearning blog to ascertain the extent of eLearning adoption within the campus community, specifically targeting academics. As in the previous phases, the supporting quantitative evidence is presented.

Below follows a detailed explanation of the research design, the sampling approach, and the data collection, in addition to the data analysis.

4.2 The Research Design

Research design refers to the approach taken to integrate the various components of the research project in a logical and organised manner. It is the "*process of focusing your perspective for the purposes of a particular study*" (Babbie, 2008: 122). Creswell (1994:21) describes research design as a "…*sequence of events, which connects the procedures for collecting the empirical data to the initial research questions, on the one hand, and to the subsequent data collection, analysis and conclusions on the other*". Rather

than a "*cookbook*" from which the researcher chooses the best recipe (Trochim, 1986:46), the design should be theory-grounded, feasible, flexible and efficient; it must reflect the theories which are being investigated; are possible to implement; and strike a balance between redundancy and the tendency to over-design (Hammersley, 1993:6).

Mindful of the nature of the research question in this study, a qualitative research design was used. This approach was deemed the most suitable to facilitate an in-depth study within the context of eLearning implementation in the University of the Western Cape: the empirical setting of the case-study.

The researcher decided to collect evidence as diverse as possible, by approaching a wide-ranging sample during the first phase: (i) Academics who voluntarily opted to use eLearning to support their teaching methodologies; (ii) those who have not yet opted to use eTools; (iii) students who have access to specific eTools within specific online courses; (iv) the leaders of the institution; and (v) ICT and eLearning support staff members who influence eLearning implementation in a higher education setting.

The research tools/techniques employed in this study included an email survey questionnaire for academics in the institution, eLearning experts in selected South African HEIs, and face-to-face interviews for the UWC professional staff (academics, institutional leaders; IT support staff and eLearning support staff). The study made use of carefully formulated interview questions, based on the literature study and a guiding interview schedule to collect data on the successes of eLearning implementation.

Although predominantly qualitative, the nature of this research required a fusion of qualitative and quantitative research methods for the data collection. The numerical (quantitative) data derived from interviews, questionnaires and the continuous monitoring of eLearning adoption (also in the form of blogs) administered at the institution supported the qualitative research methods. The quantitative data collected within a time-frame (September 2005 - October 2011) focused on the voluntary number of eLearning users (lecturers) who had received training from the eLearning support team; as well as those students who had received training, on request, from the lecturers.

The quantitative measures also reflected on the number of lecturers who had made use of specific eTools to enhance their traditional teaching-and-learning practices.

The case study for the implementation of eLearning in UWC is presented in three data-collection phases that coincide with the three phases of the development of an eLearning model (refer to Table 4.1: Overall design of the longitudinal study, September 2005 – October 2011). It should be noted that the empirical research findings of the study were not presented in a monolithic chapter, but rather woven into the three case study phases described below, and further expanded in Chapters 5 to 7. Furthermore, it should also be noted that the literature review is not presented in one chapter; rather integrated into two chapters and further woven into the three phases of the case study.

Phase 1, September 2005 to December 2006: Henning, Van Rensburg and Smit (2010:26) highlights that a broad theoretical framework "*includes a literature review…[and] anchors research in literature…[and also] leads, logically, to a certain conceptual framework…which is an alignment of the key concepts of the study*". Hence, this phase involves an extensive literature review focused on an eLearning awareness campaign within a higher education setting. This resulted in the development of the *Online Creation model, explained in more detail in Chapter 5, sections 5.6.1-5.6.6.* The supporting quantitative evidence was presented to illustrate the number of lecturers who had voluntarily contacted the eLearning support team for training; the number of students trained; and the number of courses developed online for this period.

This presented evidence is associated with the objective of this study, namely: to identify those factors which enhance, and those which restrict the successful implementation of eLearning at UWC.

Phase 2, January 2007 to August 2008, further expanded on the literature review; and included the document analysis, specifically of the UWC eLearning strategic document, which was intended to guide the execution of eLearning activities within the institution. This institutional eLearning strategy document (currently the only existing policy document on eLearning at UWC) was used by the research as a reference point for the data- collection process.

It also involved an email questionnaire, which was administered to academics in the institution who had voluntarily enquired about eLearning training, and how they could effectively use the eTools of the Open Source eLearning system. This questionnaire was also administered to institutional leaders, eLearning support staff, and eLearning experts and consultants (each having about ten years of eLearning experience) at other higher education institutions (HEIs) in South Africa.

The experts that responded were from the University of Cape Town, Stellenbosch University, the University of Johannesburg and the University of Fort Hare.

This phase also involved the conducting of interviews at the University of the Western Cape with various stakeholders (institutional leaders, academics, IT support staff and eLearning support staff), whose specific perspectives impact on and contribute to the decision-making processes of the institutional eLearning implementation. This data-collection phase led to the development of the *Infused ePedagogy model*, which is a revised version of the *Online Creation model*. Furthermore, supporting quantitative evidence was gathered to illustrate the number of lecturers who had voluntarily contacted the eLearning support team for training, the number of students trained, and the number of courses developed online for this period.

As mentioned above, this presented evidence is associated with the objective of this study, namely: to identify those factors which enhance, and those which restrict the successful implementation of eLearning at UWC.

Phase 3, September 2008 to October 2011, further expanded on the literature review; and involved interviews with academics within UWC randomly selected from the lecturing staff and from different departments in the institution. Their perspectives at that time (September, 2008) – whether they were current eLearning users or not – were important, as they could impact the successful implementation of eLearning, especially in terms of their adoption of the eTools to effectively supplement their conventional teaching methods.

In addition, another set of interviews was undertaken in October 2011 with lecturers, in order to determine their level of effective employment of eTools within the learning management system; in addition to the level of use of specific eTools by their respective students.

Furthermore, the supporting quantitative evidence was gathered to illustrate the number of lecturers who had voluntarily contacted the eLearning support team for training; the number of students trained; and the number of courses developed online for the period, September 2008 to October 2011. This data-collection phase led to the development of the final *Integrated eLearning model*, presented and discussed in more detail in Chapter 8.

In summary, Table 4.1 below depicts the primary data collection within the institution over a period of approximately six years.

Table 4.1:Overall design of the longitudinal study, September 2005 – October 2011

OVERALL DESIGN				
Phase	**Qualitative methods**	**Sample and no. of responses**	**Supporting quantitative measures**	**Development of an eLearning model**
1. An eLearning awareness campaign Sept 2005-Dec 2006	Literature review	Document analysis: eLearning Institutional Strategy	Number of lecturers and students who received eLearning training	The development of an *Online Course Creation Model* focusing on pedagogy and instructional design
2. Implementation beyond the focus on ePedagogy Jan 2007-Aug 2008	- Literature review - Document analysis: eLearning strategy document - Email questionnaire - Interviews with	Email questionnaire: -Sample = 144 -Responses = 31 Stakeholder Interviews: -Sample = 51	Number of lecturers and students who received eLearning training	The development of a revised *Infused ePedagogy Model* reflecting implementation

	Stakeholder groups - Structured individual interviews - Focus group interview	-Responses = 39		beyond ePedagogy
3. Indications of a changing organisational culture September 2008-October 2011	- Literature review - Structured questionnaire - Delivered through face-to-face individual interviews; electronically; and printed copies	Sample target September 2008: 110 Academic Interviews Responses = 24 Sample target September 2011: 106 Academics and 560 students Responses= 34 Responses = 429 students	Number of lecturers and students who received eLearning training Number of courses online	The development of an *Integrated eLearning Model* focusing on the integrated factors which impact successful eLearning implementation

These three phases, depicted in Table 4.1 above, will be further discussed in detail in the data- collection section (4.4). It is important to note that the quantitative data-collection process took place continuously between September 2005 and October 2011. These dates have been specifically selected, since they comprise a period during which the use of eLearning to supplement teaching practices was not mandatory; and the home-grown Open Source eLearning system was still in its developmental phase on all levels (technological; design; pedagogy and process).

The next section focuses on the discussion regarding the case-study methodology employed. The resulting case study highlights the complexity encountered within the development of an *Integrated eLearning Model* – the final product of this study, which depicts the various integrated factors that contribute to the implementation of the eLearning system. Furthermore, the researcher deliberates on the mixed-methods methodology employed for this study, whereby quantitative measures supported the qualitative data. This chapter ends with the sections dedicated to the data analysis and a chapter summary.

4.2.1 Case-Study methodology

The case-study methodology was selected for this study to guide the collection and the analysis of the empirical data obtained from the Western Cape (the main empirical setting). It was deemed that this methodology would be the most suitable for: (i) Assisting in obtaining in-depth answers to the established research questions; and (ii) the possibility for replication of this study at other similar institutions in developing countries, or for the use of the results of this study by such institutions.

The researcher is based within a natural setting, the eLearning support unit of UWC, and had unlimited access to the relevant data "*on the perceptions of local actors from within"* (Miles and Huberman, 1994: 6; Leedy, 1997; Yin, 1993), while exploring events over which the "*researcher has little control*" (Yin, 2003: 5). However, the researcher had to carefully manage decisions on the boundaries (in terms of time, events and processes) and the problem of "*no clean beginning and ending points*", as highlighted in the work of Lincoln and Guba (1985:79).

A number of debates and arguments have raged over the strengths and weaknesses of employing the Case-Study methodology. Case studies are particularly useful for a holistic portrayal, including the effectiveness of a programme's processes – as well as its strengths and weaknesses. A case study is defined by Creswell (1998:19), as an in-depth investigation of a specific topic or experience over a period of time, with the aim of interpreting and understanding the concerns at hand. It enables the researcher to investigate real-life events in their natural settings; especially when "*a condition cannot be duplicated by laboratory research*" (Yin, 2004:xi-xii).

Evaluators often develop case studies on programme's successes and failures (McNamara, 2008). Therefore, whilst some consider the case as a methodology (e.g. Merriam, 1998), other researchers consider it an object of the study that is confined by time and geographical space (Stake, 1995:27). In those instances where the case is considered to be the object of the study, social data are categorised and the objective of the study is holistically investigated, thereby entailing the examination of the relationship between the variables or factors (Bless, Smith and Kagee, 2006); as well as analysing any patterns and themes in the data (Bell, 1993:11). The case can entail people or programmes, as this is dependent on

what the aim of the in-depth investigation is (Bell, 1993:11). Moreover, the case study "*has the purpose of discovering flaws in, and then modifying, existing social theories*" (Babbie, 2008:326).

This particular case study formed part of this research; and it took place within a global backdrop setting, whereby many South African HEIs have made attempts to implement eLearning. Stakeholder participation (institutional leaders, academics, eLearning support staff) has also been incorporated into the HEI planning programmes. At the inception of the eLearning programme at UWC, the institutional reality facing the eLearning support team at such a time was that of: (i) Marketing and driving eLearning under the initiation and stewardship of the eLearning manager within an environment where there was a strong management drive for Free and Open Source Software (FOSS); but (ii) in a resistant academic environment.

Hence, the researcher decided to use the case study methodology, as there were multiple factors, which could influence the success of eLearning implementation in this particular HEI. As a result, the case study of UWC strives to highlight the factors that drive successful implementation, and which could have an impact on the organisational culture. As mentioned previously, the case study presented in this thesis drew from multiple sources of information, such as the eLearning strategy document of UWC, continuous data collection regarding the usage of eTools by academics, interviews, email questionnaire and blogs, the data on the availability and accessibility of a stable eLearning platform for users at the institution, efficient back-end application support and maintenance of the home-grown Open Source eLearning platform, as well as effective front-end eLearning support processes for academics.

The collected data were thoroughly studied, and a detailed description of the case was done, as described by Guba and Lincoln (1989:79) who had highlighted the formulation of the themes, their interpretations, and in the final stage, a report on the "lessons learned" from the case. The lessons learned regarding the factors that affect eLearning adoption at an HEI in a developing country serve as recommendations for eLearning implementation and further research. Although generalisation is limited, due to the single case-study approach, the results may possibly serve as recommendations for eLearning environments, nationally and globally, and in cases where there is an eLearning-resistant environment, grappling with a limited ICT infrastructure.

4.2.2 A mixed-methods approach

As stated elsewhere, a mixed-methods approach or methodological triangulation was used where quantitative evidence was used to support and complement the qualitative data. Triangulation is convenient for double (or triple) checking of results; and "*cross examination*" mechanism for accuracy and authenticity of information (Altrichter, Posch and Somekh, 2006:68; Cohen and Manion, 1986:78).

Triangulation in this study was used, in order to answer the formulated research question and fulfil the objectives of this study, namely: to determine: (i) What users understand by the term 'eLearning success'; and (ii) the factors that contribute to the successful implementation of eLearning in a HEI.
The justification throughout history and currently for making use of the mixed methodology approach – is to employ eclectic approaches, where quantitative methods may be used jointly with a qualitative framework (Schram and Caterino, 2006:23), such as in this study.

At the same time the use of quantitative methods, provides the possibility of giving precise and testable expression to the qualitative ideas (Niglas, 2004:69) as the quantitative data are a desirable component in minimising bias (Rossman and Wilson, 1994:48). Hence, even scientific disciplines may involve a fusion of quantitative and other analytic approaches and methods (Bogdan and Biklen, 2002:127; Brynard and Hanekom, 1997:29-30).

On the other hand, the qualitative research is frequently used to acquire a general sense of phenomena and to shape theories that can be tested by the use of further quantitative research (Greene and Caracelli, 1997:96). However, in the case of this study, the quantitative evidence served as a supportive element in the qualitative data, and enabled the researcher to explain and elaborate on the findings regarding attitudes and perceptions, as well as other factors, which either promote or inhibit the successful implementation of eLearning. In this regard, the quantitative evidence was used in the study to empirically represent abstract ideas (Neuman, 2006:171), here shown through various eLearning-related concepts.

Patton (1990:68) noted that the social sciences can only become genuinely scientific if quantitative methods are employed; but at the same time, the use of quantitative methods alone could obscure the

reality of social phenomena in a study. This is in line with the earlier work of Kuhn (1999:162), who emphasised that despite the differentiation qualitative and quantitative attributes of scientific investigation, it has been asserted that the two go "*hand-in-hand*"; and that "*large amounts of qualitative work have usually been a prerequisite to fruitful quantification in the physical sciences*".

Another reason for using the mixed-method approach for the data collection and analysis is the ability of this approach to successfully conduct a study involving a relatively small sample – that is a "*small numbers of people*" (Welman and Kruger, 1999:186), which was the case in this study.

This approach is also in line with the earlier work of Hammersley (1992:89), regarding the co-existence of quantitative and qualitative approaches. The co-existence of qualitative and quantitative approaches in this study, as is required in a multi-methodology or mixed-methods approach, presents gathered data relating to eLearning users' and non-users' insights, attitudes and perceptions. As these abstract elements are not easily observable or measurable, the researcher used the quantitative evidence to study indicated changes of behaviour of actors (i.e. respondents in this study) and any organisational cultural changes in eLearning adoption and implementation.

The continuous collection of quantitative data included those lecturers who voluntarily attended eLearning scheduled training sessions; who voluntarily made appointments for one-on-one office consultations to learn about the usage of eTools to enhance their teaching practices; who voluntarily presented their experiences and challenges at eLearning seminars and colloquiums organised by the eLearning support unit; who voluntarily requested that their students receive training and support, in order for them to become familiar with, and competent in, the use of the eTools. Moreover, the amount of courses within the eLearning system is indicative of the usage of the eTools to supplement the teaching-and-learning methods.

The following section highlights how the study presented a strong rationale for choosing a mainly qualitative approach: an ideal method to study the implementation of eLearning at UWC.

4.2.3 The Qualitative approach

Generally, qualitative research is defined as a study which is conducted in a familiar environment, where the researcher collects data and analyses it, focusing specifically on the interpretations and meanings; and convincingly discusses the process (Creswell, 1998:58). These descriptive data (Brynard & Hanekom, 1997:29) include lengthy, detailed and inconsistent responses which make analysis complicated (Hall and Hall, 1996:46).

Qualitative research engages methods of data collection and analyses which allows for descriptions of how behaviour can be measured and the researcher can take a knowledgeable stance (Lofland and Lofland, 1995:36). In addition, a qualitative research approach is a multi-perspective, all-encompassing approach including various forms of investigation, the aim of which is to make sense of, describe, interpret, and obtain an understanding of social phenomena – without interrupting the real-life situation, as far as is possible (Merriam, 1998:5; Bless and Higson-Smith, 1995:42; Denzin and Lincoln, 1994:44).

This all-encompassing qualitative approach has also been referred to a "*craft of research…known as bricolage, with the researcher as the bricoleur…the craftsperson who has access to many tools…and has to select from these tools when a certain job has to be done*" (Henning et al., 2010:11).

Equally important, qualitative research should not be seen as an effortless replacement for a quantitative study, as it demands steadfastness in often complex situations. It also entails contemplation of key parameters of quality in relation to the epistemological ideas and distinctive methods (Anastas, 2004). This study, consequently, engaged selected participants with respect to particular eLearning implementation issues, namely: pedagogy, leadership, support, organisational culture, and quality. The study was aligned with the earlier work of (Paton 1987 as cited in Myers, 1996:97 and Vehtari, 2006:47) - who highlighted the fact that "*qualitative methods permit the researcher to study selected issues, cases, or events in depth and detail…*".

This study presented a strong rationale for choosing a qualitative approach, as illustrated quite aptly in the work of Patton (1987:13). Qualitative research is usually conducted in a real-life situation (Tesch, 1990:43); therefore, the nature of the research question, namely: How eLearning can be successfully

implemented in a HEI in a developing country context, and those factors which contributed to the successful implementation of eLearning, and which lend themselves well to this approach.

The research questions and the overall topic needed to be explored qualitatively, as users' mindsets and attitudes toward change are abstract conditions and cannot easily be identified. However, they have a bearing on behaviours regarding eLearning adoption and its successful implementation. As Sapsford and Jupp (1996:46) asserted, qualitative research is aimed at analysing concrete cases in people's expressions and activities in their local environments.

In addition, there was a need to present a detailed qualitative view of the topic, as the quantitative data in this case study were not sufficient to present proper answers to the established research question. Hence, the study aimed to explore the impact of eLearning adoption within UWC in the context of Free and Open Source (FOSS) innovations and the respondents operating in their natural setting.

The researcher had access to the necessary eLearning documents (e.g. the eLearning strategy document), participants and extensive data in this field; and thus, was able to investigate the eLearning initiatives and the development and improvement of a home-grown Open Source eLearning System from the inception of a structured eLearning support unit at UWC in 2005.

Generally, qualitative researchers hardly ever work with a set body of earlier collected data. It is on this basis that researchers seek to collect data from various sources, and by using different research instruments, such as interviews, questionnaires, observation and participation in a project, which would enable researchers to gain insight into the various issues and information involved (Patton, 1987:16).

For the purpose of this study, the qualitative research appeared to be an effective method for studying the implementation of eLearning at UWC, given the lack of any fixed body of data of eLearning implementation within a complex HEI environment in a developing country context – particularly regarding strong sponsorship for the development of a home-grown Open Source eLearning system at UWC. Hence, the study gives an opportunity for descriptions and explorations pertaining to various factors, which influence the implementation of eLearning.

This is aligned with the findings of Merriam (1998:6), who maintained that qualitative research breaks down an experience into its constituents – to determine how they interact – to constitute (e.g. factors influencing eLearning adoption) the whole phenomenon (an integrated approach to eLearning strategy and practice).

Specifically, the study deliberates on those factors which impact the implementation of eLearning and takes notice of the context, which could have a bearing on the current organisational culture with regard to the adoption of eLearning. Thus, it suffices to suggest, as Creswell (2003:18) states, that a qualitative approach requires that the researcher make well-informed assumptions based on historically constructed standpoints; and that historical encounters and events go hand-in-hand with qualitative research (Brynard and Hanekom, 1997:29).

Consequently, the study endeavoured to identify the perceptions of the institutional leaders, lecturers, eLearning and IT support staff – as regards their understanding of the meaning of "eLearning success", and those factors which contribute to the successful implementation of eLearning in a higher education domain. Particularly, the research included the understanding of UWC academics regarding the current eLearning initiatives and their experiences (phenomena) within the institution, as well as their training and support experiences with the E-Learning Development and Support Unit (EDSU) of the institution.

Hence, in this study, the data in the form of the participants' own words from the interviews were collected; and direct quotations from documents (written responses from questionnaires) were used to convey the participants' opinions about the factors that contributed to the successful implementation of eLearning. This approach is aligned to the focus on understanding the meaning of phenomena, which generates "rich", descriptive data; inquires around the real-life experiences of people; listens to the inquirer's viewpoint as a point of departure (Brynard and Hanekom, 1997:29; Merriam, 1998:8); and is concerned with the meaning of *" human behaviour and experience*" (Hiles, 1996: 2).

Throughout the process of this study, the researcher took every precaution to remain unbiased with regard to the data collection, analysis and interpretation of the qualitative data (Denscombe, 1998:208) since the researcher is also instrumental in the process of implementing e-learning at UWC (Merriam, 1998:7). The

researcher fulfils an eLearning Manager's role and participated in the establishment of a support structure driving eLearning within a HEI. Hence, where an unbiased view was questionable, it was acknowledged explicitly (Mouton and Marais, 1990:162).

Although some discussion regarding the quantitative approach took place in earlier sections, the next section will consider this method of data collection and analysis in more detail.

4.2.4 Supporting quantitative approach

Quantitative methods entail research techniques used to collect quantitative data that can be measured with numbers (Layder, 2004:19). Statistics, tables and graphs, are frequently used to display the results of quantitative methods. The quantitative approach generally includes the generation of models, theories and hypotheses (Bogdan and Biklen, 2002:124). It is believed that the core premise of quantitative research is to affirm what should be deemed as valid knowledge and requires methods, namely surveys and experiments – in order to interpret experiences; and includes techniques such as, "*observations, pilot studies, quantitative analysis and questionnaires*" (Brynard and Hanekom, 1997:29-30). In general, the objective of a quantitative approach is to categorise explanations and features, calculate them, and develop statistical models in an effort to describe observations (Layder, 2004:19; Miles and Hubberman, 1994:4).

This research approach is used extensively in both the natural and social sciences; and it is applicable to this study, as a way to research different aspects of eLearning (Flinders and Mills, 1993:21). As discussed earlier, this study has utilised aspects of a quantitative approach, in order to measure the factors that contribute to the successful implementation of eLearning. Hence, in this case, quantitative research supported the longitudinal qualitative exploration of attitudes and perceptions of eLearning adoption and application by lecturers and students. The quantitative evidence was accessed over the period September 2005 to October 2011.

The supportive quantitative evidence for measuring the adoption of eLearning practices in the institution entails the number of academics who have voluntarily contacted the eLearning support unit for training,

and one-on-one consultations since the inception of the eLearning awareness campaign from September 2005 to October 2011. This quantitative evidence is presented in phases in chapters 5-7 of the case study. The following section examines the sampling processes of the study aimed *inter alia* at limiting bias and achieving accuracy in representation.

4.3 Sampling and sampling procedures

Sampling is a generic term that refers to the selection procedures employed when selecting a sample from a given population. Accordingly, for the purpose of the study, sampling can be defined as a group of individuals selected from a broader population group (Webster, 1985). The researcher resorted to sampling because of its advantages with regard to study scope manageability without compromising the amount of detailed information obtained (Narins and Hiller, 1999:27).

Given that in most situations, like the one in this study, it is impossible to research an entire population, a sample consequently becomes a representative allocation. The researcher should ensure that each person stands a fair chance of being selected (Wallisman, 2006:77).

Silverman (2001:29) noted that "*sampling is the strategy of selecting a smaller section of the population that would accurately represent the patterns of the whole target population*". Hence, sampling may be defined as the procedure whereby a few individuals are selected from a much larger group to be studied; and represents and informs the larger groups (Narins and Hiller, 1999:27; Friedrich, 1997:18). This is employed by making use of inferential statistics in order to make deductions from the sample which represents the population (Miles and Huberman, 1994:41; Brewer and Hunter, 1989:21); and thereby gaining more information about the entirety (Webster, 1985:76).

Although there are numerous variants of sampling, for the purposes of this study, both purposive sampling and simple random sampling were applied. These methods are discussed in sections 4.4.1 and 4.4.2.

4.3.1 Purposive sampling

Purposive sampling procedures were used to collect the data for this study, through the identification of institutional members best suited to participate in the research. The criteria used in this purposive sampling include: (i) The participant's portfolios and type of work; (ii) how they interact with eLearning; and (iii) the influence they exert within the eLearning domain. As purposive sampling is mostly applicable when the research relates to an understanding of the audience; and the researcher sampled with a purpose in mind (Wong, 2008:3): having one or more specific pre-defined groups – in this case, the groups of respondents with the above-stated characteristics.

Purposive sampling has been chosen for this study due to its flexibility, and because it can be used with both quantitative and qualitative studies (Babbie and Mouton, 2001:57); it can be applied on fairly small groups of people, which may serve to be adequate for "*understanding human perceptions, problems, needs, behaviours and contexts*" (Denzin and Lincoln, 2000:56).

As the researcher is very familiar with the eLearning environment, the sample was deliberately selected ("*hand-picked*", according to Polit and Hunglar, 1999:284), as those participants of the population that had the best chance to supply the most valuable data (Walker, 1999:67). Thus, a sample representative of all the groups that could possibly contribute was constituted (Welman and Kruger, 1999:62), in order to procure "*information-rich participants*" (Struwig and Stead, 2001:123). In particular, the study sought to identify and understand the participants' perceptions and understandings of those factors, which contribute to successful eLearning implementation.

Thus, the researcher purposively selected participants from various stakeholder groups for this study, namely: (i) Leaders in the institution; (ii) IT back-end support staff and eLearning system developers; (iii) eLearning front-end support staff; (iv) academics at UWC (those who at the beginning of the study had voluntarily contacted the eLearning team for training and support); (v) eLearning experts and consultants in other South African HEIs; and (vi) students.

To assist in drawing the purposive sample, the researcher had access to staff lists of early adopters of eLearning at UWC, as well as other key role players.

The selected sample groups consisted of:

- *Institutional leaders*: The researcher investigated the extent in which eLearning has been a collaborative effort, and has been multi-stakeholder driven, rather than just a bottom-up approach;
- *IT back-end support staff and eLearning system developers*: IT infrastructure is important and eLearning success is dependent on dedicated IT back-end support staff and eLearning system developers. The developers of the institution's home-grown eLearning system are housed in the Free Software Innovation Unit (FSIU) of the institution;
- *eLearning support staff (front-end)*, engaging as key-drivers of eLearning in the institution. They have hands-on experience, as they engage and communicate with academics, IT back-end staff and the developers of the eLearning system on a daily basis;
- *The academics* that have access to the students, the main clients of the institution. The researcher needs to determine the attitudes and mindsets of the academics regarding eLearning implementation as supplementary to their teaching methods. At the time of the deployment of this study, eLearning had not yet become a mandatory means of teaching in the institution; thus, the academics would still be in a position of 'power', especially in terms of students only having access to the LMS and its eTools when the lecturer/academic decides to engage in any eLearning initiatives. Academics are in a position to 'make or break' any eLearning initiatives, which inevitably impact on the successful implementation of eLearning;
- *eLearning experts and consultants in other HEIs* in South Africa who are in the forefront of eLearning initiatives at their specific institutions, especially in terms of driving eLearning initiatives for the past ten years; and the use and application of eTools within LMSs: both Open Source and Proprietary systems.
- *Students* within the institution across all faculties only have access to online environments if their lecturers have created an online class for a specific discipline and module.

The aim of this purposive sampling strategy was to secure the quality of the data, rather than the quantity (Nachmias, 1996:68), as the strength of the purposive sampling lies in the choice of data-rich and information-rich cases (Bless, Smith and Kagee, 2006; Robson, 1993:68). Furthermore, it enables the researcher to home in on people or events, whose arguments revolve around what they believe in (Dane,

1990:35). This issue was critical for the researcher. The sampled participants were selected with a specific aim and in relation to the investigated topic (Brewer and Hunter, 1989:78).

The research process followed by this study was one of discovery, rather than the testing of hypotheses (Guba and Lincoln, 1985:79). Through interaction (email questionnaire, blogs, and individual interviews) with the abovementioned respondents, it was possible to establish the extent of eLearning utilisation, and the successful implementation within the researched institution. The purposive sampling also contributed to the feasibility of the study, as the data collection strategy is considered economical and informative – due to the nature of the qualitative data (Denscombe, 1998:57; Lobiondo-Wood and Haber, 1990:92).

However, purposive sampling has also been criticised, since it is considered by some to go against the grain of conventional (especially positivist) survey approaches; and it thus opens up the prospect of accusations of poor and biased research design **(**Lobiondo-Wood and Haber, 1990:92). The researcher tried to avoid bias through the incorporation of various players, ranging from those who had voluntarily adopted eLearning to those who are yet to adopt it. Sitzia, Brown, Clark and Kelley (2003) appropriately indicated that purposive samples provide external validity, as the specific selections can enhance our interpretation of causal processes; and avoid as King, Keohane and Verba (1994:24) put it, the potential opening up of additional sources of bias.

The next section will deliberate on the simple random sampling technique that was also used in selecting participants from the academic stakeholder group for the study: those who at that particular time (phase) had adopted eLearning practices, and those who had not.

4.3.2 Simple random sampling

Simple random sampling procedures, one of the probability sampling strategies, were also used to collect data for this study from academics at UWC. A random selection "*offers access to the body of probability theory, which provides the basis for estimating the characteristics of the population as well as estimates of the accuracy of samples*" (Babbie, 2008:212). In this case, a list of all the academics at UWC (at the time of the study) was used as the sampling frame, in order to obtain the most representative sample

available, since simple random sampling is used when the population is uniform, or has common characteristics in all cases (Wallisman, 2006:77). Babbie and Mouton (2008:67) insist that random sampling is not appropriate when the population is largely inconsistent, as this would affect the results. Rather, it is a selection plan which ensures that every person has a fair and independent chance of being selected.

It is thus, appropriate to make simple purposive sampling surveys based on individuals' positions on certain beliefs, ideas and principles (Creswell, 1994:54). Random sampling lessens bias as samples are not self-selected; and the selection is not entirely indicative of the researcher's preferences (King *et al*., 1994:38). Equally important, King and others (1994: 89) cautions against an undersized number of observations, "*random selection may not solve the problem of selection bias, but may even be worse than other methods of selection*". Additionally, there are also risks of over- and under-representation of specific individuals in small samples (King *et al*., 1994: 89).

Hence, there were significant factors that had to be considered in selecting academic participants for this study. All the participants (academics who were eLearning users, and those who were not) in their totality had an equal opportunity of being selected. A sufficiently large sample of 110 academics from a population of 776 was drawn, in order to minimise bias and the overrepresentation of average units (further discussed in section 4.5.4: Phase 3 below). It is, therefore, implicit that this random selection included academics from across various departments, and was also a good representation of age and gender.

In the next section, the data-collection instruments, used to collect the relevant data in three phases, will be discussed.

4.4 The data-collection process

Data collection is a process of integrated steps, of which the goal is to gather significant data to answer the research questions (Creswell, 1998:110), while data-collection instruments relate to the tools that will be used to collect specific data (Merriam, 1998:1). Several data-collection tools were used in this study;

and these were processed through triangulation, which is intended to minimise the subjectivity of the research findings. The data collection instruments used in this study comprised: Document analysis, questionnaires, and interviews.

4.4.1 Phase 1: Exploring the institutional eLearning strategic document *(September 2005 to December 2006)*

The initial phase entailed the exploration of the institutional eLearning strategic document, as it pertains to eLearning implementation at UWC. The researcher placed specific focus on the non-coercive eLearning awareness campaign within the institution and its relation to the eLearning strategic document [refer to Chapter 5 for details]. Quantitative statistics (or evidence) gathered of the direct influence of the implementation approach was presented, in order to illustrate the result of the progressive non-coercive awareness campaign.

Moreover, the supporting quantitative statistics complement the qualitative evidence of the implementation approach.

The researcher analysed the public institutional eLearning strategic document, in order to determine the focus thereof: especially, given that the document serves as a high-level implementation guide; and it gives direction on how to execute eLearning within the institution. This is in line with the opinions of Hall and Hall (1996:212) that organisational documents are beneficial secondary records, encompassing a large variety of topics. Organisational documents can be "*used by organisations to record the development and implementation of decisions that are central to their functions,*" thus providing a starting point basis for investigations and policy development (Hakim, 1987:36-37).

Furthermore, in this case the institutional document, as highlighted by Denzin and Lincoln (2005), provided information related to core areas which could be identified and interpreted. It should be noted that at the time of this research, the eLearning strategy of the University of the Western Cape (2004), was the only guiding institutional implementation documentation in place. Hence, this document indeed provided a valuable source of information for a case study of UWC by providing a set of strategic objectives and expected outcomes with regard to e-Learning at UWC.

Stakeholders across the academic faculties of the institution were involved in the development of the eLearning strategy document. A working group was established in order to develop a "*strategy for computer literacy, and to do so in the broader framework of an eLearning strategy…[rather than]…a narrow focus…in isolation from other aspects of eLearning…*" (UWC, eLearning Strategy: 2004:9).

4.4.2 Phase 2: Email questionnaire and stakeholder interviews *(January 2007 to August 2008)*

4.4.2.1 *Email questionnaire: Mid - 2007*

Phase 2 entailed 144 participants, purposively selected, to complete an email questionnaire. This purposive sample included academics and educators across faculties at UWC, who had come voluntarily for eLearning training (from the inception of the eLearning staff training sessions in September 2005); and/or inquired about the use of the Open Source eLearning system to enhance their teaching. It also included institutional leaders, and eLearning support staff from UWC. In addition, long-standing eLearning experts (especially those experts who had been involved in eLearning for 10 years or more) from the University of Cape Town, Stellenbosch University, University of Johannesburg and the University of Fort Hare were incorporated into this phase of the study.

The eLearning Development and Support Unit (EDSU) established three mediums through which users could ask for assistance: telephonically, face-to-face visits, and email. For the purpose of the study, an email survey was chosen as the preferred method because it had a number of benefits for the participants: All participants had easy access to e-mail, and this is an accepted method of communication within the institution.

It is faster and more convenient; and it allowed for a quick overview of impressions concerning eLearning success, as well as the perceived factors that contribute to success.

The researcher envisaged that the email questionnaire would give insight into the kinds of problems that were experienced by the participants. The email forum allowed the participants to speak and communicate freely, which made it possible to infer the attitude of the participants towards eLearning at an HEI.

Emails often reveal a great deal about the relationship between a user, and the learning environment (Babbie and Mouton, 2001:302). In this case, the e-mail facility could be used to reveal the relationship between the eLearning users and the eLearning support unit.

It is economically viable, and allows the researcher to distribute a large number of email survey questionnaires. This is a means of improving the "*completion rates while reducing costs*" (Babbie, 2008:286).

The email questionnaire was based on the literature study; and it constituted the initial stage of the empirical research (during a period of two months in mid-2007). The questionnaire intended to establish the extent to which participants comprehend the basic concepts associated with eLearning and eLearning success; as well as the factors that contribute to the successful implementation of eLearning at UWC. The participants were asked to answer the following qualitative questions:

- What do you think is meant by eLearning success? How would you define/describe/explain eLearning success?
- When will you know that your organisation has achieved eLearning success?
- What are the factors that will influence or contribute to eLearning success?

Thirty-one (31) participants responded, from which the researcher drew a number of a themes, further deliberated and presented in phase 2 of the case study [refer to Chapter 6; section 6.3]. At the same time, the researcher did not lose sight of the dangers of using an email survey, specifically, since some participants may deliberately delete the email without responding to it – due to a lack of interest or preoccupation with other commitments. Secondly, with an email survey, it is difficult to prove that the participant actually read the email, unless a response is received; and thirdly, with an email survey, it is not easily possible to probe further or to predict the response. Therefore, the next phase of data collection included stakeholder interviews – in order to explore certain themes in greater depth.

4.4.2.2 *Stakeholder interviews: June 2008 to July 2008*

The study entailed interviews conducted with the purposively selected people, such as academics, institutional leaders, IT and eLearning support staff (details of the sample are discussed in Chapter 6, section 6.5.)

During the interviews, the data are created by means of a social process (Hall and Hall, 1996:43); and this is formed through social relations, connecting the researcher and the participant and facilitating a creative process (Patton, 1997:67). Hence, the researcher who conducts the interview, "…*assume that the individual's perspective is an important part of the fabric of society and of our joint knowledge of social processes and of the human condition*" (Henning *et al*., 2010:50). In line with this argument, participants who were deemed to have a wealth of information regarding the adoption of eLearning at UWC were selected. Following, are herewith shown some of the questions that required detailed information of the participants' perceptions of successful eLearning implementation within the institution; and its impact on the organisational culture.

The researcher utilised a number of interview methods to limit possible bias, as well as to connect with the highest number of respondents. Structured, face-to-face individual interviews and focus group interviews were conducted, in order to assist the interviewer to work together with individuals in various settings; rapidly produce interpretations; and prepare questions which do not probe the interviewee (Lofland and Lofland, 1995). The focus group method (group interviewing) allowed the researcher to "*question several individuals systematically and simultaneously*" (Babbie, 2008:338). Depth of knowledge and understanding of the respondents, as well as viability, would all establish the data-collection method to be employed at various stages of the study.

As various types of data should be reliable, accurate and verifiable (Guba, 1978, in Paton, 1987:166), the researcher did not lose sight of the prospect that information imparted by a few respondents might be profoundly subjective, as stated by Silverman (2001:137): *"...the sticky problems of bias (on the interviewer's part) and truth-telling (on the witness's part) come to the fore*". To overcome this, the researcher used the eLearning Strategy document as a point of reference. Furthermore, a variety of data-

collection methods were used to minimise subjectivity, and to increase the chances of validity, because aspects not sufficiently addressed by one method could be addressed by the other.

Interviews were conducted in phases – to establish the factors affecting the adoption of eLearning within the institution, and to understand the quantitative progression, in terms of the numbers of those who adopt and use eLearning for educational purposes. The individual interviews were structured interviews (Denscombe, 1998:113), enabling, as Babbie and Mouton (2001:259) put it, a structured plan of investigation and a guiding schedule (Bless, Smith and Kagee, 2006:106), with the participant being expected to talk in a "*natural, conversational way*".

The interviews were conducted at UWC from June to July 2008, with purposively selected participants across the institution, focused on obtaining qualitative data. The participants were asked to answer the following qualitative questions: i) What do you think is meant by eLearning success? How would you define/describe/explain eLearning success? ii) When will you know that your organisation has achieved eLearning success? iv) What are the factors that will influence or contribute to eLearning success?

A sample of fifty-one (51) participants was selected from the following categories of participants within the institution: (i) Institutional leaders; (ii) academics (those who had at this stage voluntarily contacted the eLearning team for training and support); (iii) eLearning support staff; (iv) IT back-end support staff; and (v) Learning Management System (LMS) developers.

These participants were invited to share their experiences on the implementation and execution of eLearning at UWC. Thirty-nine (39) or 78% of the participants accepted the invitation to be interviewed. They were allowed to talk freely and without restraint. Their responses were recorded on an audio-recorder, and the transcriptions developed. When necessary, the interviewer requested the participants to elaborate on certain aspects without guiding their responses [refer to Chapter 6; sections 6.1-6.8 for data presentation and analysis of these interviews].

These processes followed the guidelines of Wilkinson (2000:48) who emphasised the intensive planning phases prior to the actual interviews; the reporting and recording of the interview; and the transcriptions and analysis.

Furthermore, an interview schedule was developed to serve as a guide during the stakeholder interviews – comprising the collation of a 'suite of questions' targeting and probing a specific sample of participants. As highlighted by Babbie (2008:279), "*quite often in questionnaires, certain questions will be relevant to some of the respondents and irrelevant to others*". All questions were posed as open-ended questions, which allowed for the collection of rich qualitative data. The questions were categorised into non-linear, overlapping sections of *strategy; organisational culture; pedagogy; technology; support; and quality teaching-and-learning environments* – factors regarding eLearning implementation derived from the literature review.

For example, an institutional leader could address pertinent strategic questions. However, the strategic issues could overlap into the important organisational culture arena, while the category of *quality teaching-and-learning environments* is linked to all the categories. This guiding interview schedule enabled the interviewer to collect valuable qualitative data; and moreover, to further refine the provisional eLearning model of the study [refer to Appendix B: Guiding Interview Schedule].

4.4.3 Structured questionnaires and interviews (September 2008 and September/October 2011)

The first batch of interviews was conducted during the period of September 2008 (phase 3 of the case-study) – and it involved 110 academics randomly drawn from the university staff list of 776 staff members [at that time]. These 110 academics were given the choice to either complete the structured questionnaire electronically, or to answer the questions directly by means of an individual interview [refer to Appendix A: Questionnaire: Lecturer Interviews: September, 2008].

A second batch of interviews was conducted during the period of September/October 2011 (phase 3 of the case-study) – and it involved 106 lecturers purposively selected from across the seven faculties of the institution; and who had at that time of the research already employed eTools to supplement their

teaching-and-learning practices (refer to Appendix C: Questionnaire, Lecturer Interviews, September - October 2011). Their respective students (560 students selected from each of the seven faculties), who had had access to the eTools within their specific disciplines, were expected to complete a structured questionnaire [refer to Appendix D, Student Questionnaire, Sept/Oct 2011].

4.4.3.1 *A structured questionnaire: September 2008*

Questionnaires are a set of questions administered to participants to probe their opinion on a given study or investigation. They are "*used in connection with many modes of observation in social research…and data-collection activities*" (Babbie, 2008:278). Questionnaires are effective instruments for gathering data from many participants (Wilkinson, 2000:42), involving low costs and less interview bias (Denzin and Lincoln, 2005:45). For this study, questionnaires also formed part of the data-collection exercise to establish the progress of eLearning at UWC, since the inception of the eLearning support unit within the institution.

This part of the data-collection phase also included a structured questionnaire with open-ended questions that was administered to the academics (those who had adopted eLearning practices at that time in the institution). From the 110 academics randomly drawn from the university staff list, only twenty-four (24) responded to the request. Of these respondents, only eight (8) indicated that they preferred to complete the questionnaire electronically at a time best suited to them, but within the time-frame that was given by the researcher.

The narrative remarks retrieved from the open-ended questions were aimed at providing an opportunity for further interpretations, understandings, ideas and new ideas; and moreover, to enable the respondents to give their personal opinions and perceptions of eLearning and eLearning progress within the institution [refer to Chapter 7, section 7.3.1.1 – 7.3.1.13 for details].

4.4.3.2 *Questionnaire administered through face-to-face interviews*

As stated above, some academics chose to answer questions directly by means of an individual interview. Hence, this part of the data-collection methodology consisted of a semi-structured interview, with the

same open-ended questions that were administered electronically to some of the academics in the institution. It should be highlighted that only sixteen (16) academics out of the 110 contacted, opted for a face-to-face interview.

The low response by academics at this phase of the study is typical of higher education settings – due to an overload of emails and their respective administrative and teaching workloads. It should be noted that three academics actually replied angrily to the researcher, stating that they did not want to be disturbed at all; and did not wish to make any comments with regard to eLearning. The responses for this phase were also recorded on an audio-recorder, and the transcriptions were then developed. Furthermore, the electronic and face-to-face interview responses were collated and analysed. However, this relatively low response did not significantly influence the overall data collection and analysis.

4.4.3.3 *Structured questionnaires: Academic and student participants - (September/October 2011)*

This part of the data-collection methodology consisted of two more batches of structured questionnaires, with open-ended questions that were administered to academics and students in the institution during the period September 2011 to October 2011. From the 106 academics that were purposively selected (those who had employed eTools within their specific disciplines to complement their current teaching-and-learning practices), thirty-four (34) responded to the interview request.

Subsequently, 560 students (from across all faculties[12]) were requested to complete a structured questionnaire. These students had access to the eTools within their specific disciplines, as their lecturers had contacted the eLearning support team for assistance with regard to the effective use of these eTools. The questionnaire was completed by 429 of the 560 students.

Developing the questionnaires was crucial, since it had to be decided which questions needed to be addressed, how to sequence them, and how to phrase them – and in such a way that they were easy to understand. The questionnaires were used to collect data on the eLearning experiences, challenges,

[12] Community and Health Sciences; Economic and Management Sciences; Arts; Dentistry; Law; Science; Education

perceptions and attitudes of educators/academics in an HEI, ePedagogy, the benefits of eTools, as well as the factors, which they considered had contributed to the successful implementation of eLearning.

Furthermore, the open-ended questions allowed the respondents to discuss significant and relevant features - devoid of restricted categories. It should also be noted that this method was a slow process, as many respondents failed to complete the questionnaire timeously, and others did not return it all. This is in agreement with the earlier work of Patton (1990:11), who argued that there are serious limits to open-ended data collection (also compare Bless, Smith and Kagee, 2006:19).

4.5 Data analysis

As soon as the data are gathered, reading and interpretation become the preparatory points for data analysis (Bazeley, 2009). Ultimately, qualitative analysis is an individual private process, containing an interpretative analysis process conducted by the researcher over a period of time and stages (Smith and Osborn, 2007:67). The researcher employed interpretative phenomenological analysis (IPA) in this study, since the main purpose of IPA "*is to explore in detail how participants are making sense of their personal and social world, and the main currency for an IPA study is the meanings [that] particular experiences, events, states hold for participants*" (Smith and Osborn, 2007:53).

Qualitative analysis is an ongoing data collection process, whereby the researcher will continuously "…*reflect on impressions, relationships and connections*…" throughout the process (Henning et al., 2010:127). Therefore, in this study: (i) The transcripts were read a few times for similarities and differences ; (ii) initial connections were changed into patterns; (iii) the relations between emerging patterns were used to identify themes ; and (iv) these themes were further expanded and emphasised through explanations and illustrations.

The retrieval of patterns amongst the comments from respondents is important as they "*point to a theoretical understanding of the social life*" (Babbie, 2008:422). In addition, it should be noted that themes and categories are "*flexible and may be modified during the analysis*" (Henning et al., 2010:128).

The researcher, only when having constructed evidence for conclusions, added expressive quotations for attention and clarity (Bazeley, 2009).

The IPA approach proved to be useful since, the evolving explanations derived from the qualitative and supporting quantitative data were presented in the form of an eLearning model, herein referred to as the *Integrated eLearning model*. Hence, these explanations encompassed the developed themes, which were connected through accounts of relationship (Fade, 2004). Furthermore, theoretical understanding emerged from the analysed data (Psychology Press, 2004).

4.6 Summary

This chapter discussed the empirical research design and the applied methodology of the study. The research design used methodological triangulation. The case-study method was employed and was complemented by interviews and questionnaires as data collection instruments which were dispensed in phases. The overall design (phases 1-3) of the longitudinal study, September 2005-October 2011, was presented. The subsequent analysis led to the development of an *Integrated eLearning Model*, which will be discussed and further expanded in Chapters 5-7.

The next chapter will present the first phase of the case study, which reports on an implementation approach to eLearning at the University of the Western Cape (UWC). The special focus was on some of the issues that UWC faced in the transition between the pioneering and institutionalisation phases of eLearning. This led to the development of an *Online Course Creation Model*, which forms the central part of this first phase.

CHAPTER 5

UNIVERSITY OF THE WESTERN CAPE CASE STUDY PHASE 1

ADOPTING A NON-COERCIVE E-LEARNING IMPLEMENTATION APPROACH

September 2005 – December 2006

The development of an Online Course Creation Model

5.1 Introduction

The research reported in this chapter is related to Phase 1 of the study, and presents the development of an initial eLearning Model, herein referred to as the *Online Course Creation Model.* This phase was based on the application of an abundant body of literature that covers various approaches to incorporating learning technologies into higher education institutions. It has been noted that most institutions engage extensive support for diverse professional eLearning staff development activities, according to their varying needs; as well as the need for teamwork and discussion (Shannon and Doube, 2004:114).

The eLearning agenda is also pushed by a diverse group of stakeholders, each highlighting their own preferred outcomes. Moreover, higher education institutions (HEIs) are represented by diverse opinions and expectations about the possibilities of online education; and what an institutional policy should entail, in relation to the implementation of eLearning (Holt, Rice, Smissen and Bowley, 2001:271).

There are many factors that could influence the success of eLearning implementation in a higher education institution. This phase of the case-study highlighted: (i) How a non-coercive approach can be deployed to help in the implementation of eLearning; and (ii) the impact it has on the organisational culture of the institution. This necessitated the development of an *Online Course Creation model*, which forms the core of this phase.

Phase 1 of the case study reported on an implementation approach to eLearning in the University of the Western Cape – with a special focus on some of the challenges that the institution has encountered, and

continues to encounter, in the transition between a pioneering phase (where a small number of educators are introducing eLearning to their practice) and the institutionalisation of eLearning (where it becomes an integral part of teaching and learning throughout the entire university).

The chapter also discusses the establishment of the E-Learning Development and Support Unit (EDSU), as an illustration of organisational change to support eLearning across the whole university, which is very much characterised by limited resources and insufficient human capacity.

By setting the scene, the research briefly reflects on the situation prior to the inception of the EDSU at the institution. The different focus areas of change management and communication strategies of an Awareness Campaign are presented within a resistant, complex environment. eLearning staff training and development are not mandatory at UWC; and most of the activities are not certified as part of a formal qualification.

The quantitative evidence gathered in this phase is related to the marketing and implementation approach; and it is presented here to illustrate the result of the progressive non-coercive Awareness Campaign. This chapter also highlights the fact that the success of the implementation approach cannot only be measured through quantitative data, but also requires qualitative evidence.

The acknowledgment of the eLearning support team as a significant contributor in the core business of the institution, namely teaching-and-learning and research, has become evident. The implementation of eLearning in this study concurs the view of Stiles (2006:1), who maintains that eLearning can only be regarded as fully implemented into a higher education institution when all "*policies, procedures, roles, and responsibilities*" relating to eLearning are merged and applied to the norm: the traditional teaching-and-learning practices.

5.2 The background of eLearning at UWC

In the 1990s the University of the Western Cape was faced with challenges, while making decisions about the use of ICT in teaching and learning. At that time, the development team of the home-grown

online learning environment, named as KEWL, started "*as a small set of scripts for use in teaching Marine Botany*" by Professor Derek Keats, who was one of the pioneers of eLearning within the institution. Since then, the system has undergone several phases of open-source development, in order to keep abreast of what has been happening in the rest of the world (KewlDevelopment Team cited in Stoltenkamp, Kies and Njenga, 2007:144).

In 2000, KEWL was officially implemented at UWC; and a Teaching and Learning Technologies Unit (TLTU) was established to harness and support the system and to promote eLearning. KEWL was developed by a team of technologists, led by an academic. Technological development tended to outpace the development of the eLearning community of educators and support staff. This resulted in a lack of communication and integration between the work of the developers and the support division (TLTU).

As a result, attempts to promote the use of KEWL were seen by many educators as a "*form of evangelism*" – rather than a genuine response to teaching and learning challenges and changing needs. Unfortunately, the TLTU was phased out since it was unable to shift the focus from training and supporting lecturers on marks administration (for their face-to-face instruction), to the creation of interactive online courses (Stoltenkamp, Kies and Njenga, 2007:144).

The next generation of KEWL, known as Kewl.NextGen (KNG) that was launched in January 2005, offers interactive and collaborative features that can enliven and enrich online teaching and learning through using tools such as chat, discussion forums, blogs, wikis and podcasting. Kewl.NextGen (KNG) and the latest generation of the home-grown Open Source system, KEWL 2.0 has become part of a broader trend towards the mainstream use of Open Source software at UWC (Stoltenkamp, Kies and Njenga, 2007:144).

Ultimately, the university needed a structure and processes for the effective support of users (facilitators, teaching assistants, tutors and learners) of its learning management system (LMS). The institution had to re-evaluate the nature and role of eLearning support structures. Thus, the closure of TLTU allowed for rethinking of the purpose and scope of eLearning support and the subsequent establishment of E-Learning Development and Support Unit (EDSU) in 2005.

The EDSU was mandated to ensure that academics realise the significance of ICT in education, and how ICTs could be used to supplement and improve their face-to-face teaching and learning. The division has a team of dedicated people, who have developed training programmes, in order to ensure the successful implementation of online courses to supplement face-to-face instruction (Stoltenkamp, Kies and Njenga, 2007:144).

5.3 Contextualisation: UWC and an Open-Source home-grown eLearning system

At the inception of the E-Learning Development and Support Unit (EDSU) of the University of the Western Cape in 2005 under the initiation and stewardship of the eLearning Manager, an eLearning Awareness Campaign was initiated. The institutional reality facing EDSU at that particular time was that of marketing and driving eLearning within a generally resistant environment, where a strong top management sponsorship for Free and Open Source Software (FOSS) existed.

As stated above, commitment was required to meet the expectations of a support structure through the Teaching and Learning Technologies Unit (TLTU) that could offer support to the users of a learning-management system (LMS) called the Knowledge Environment for Web-based Learning (KEWL). Despite these efforts, eLearning adoption rates were low. This is illustrated in Table 5.1.

Table 5.1: Usage of old KEWL system (up to mid-2005)

Old KEWL Courses	*In use	**Percentage
Full Online Course	332	20,2%
Marks Administration Courses Only	1315	79.8%
Total Courses	1647	100%

Note: * Amount of courses (1647) hosted on the 'old KEWL' platform

** Percentage related to courses hosted on the 'old KEWL' platform

Academics in the institution refer to the previous version of the eLearning system as the 'old KEWL'. In the old KEWL system, 1647 online courses were created until an upgraded version was introduced in mid-2005. Almost 80% of the courses (1315) were used for marks administration purposes only since it

was integrated with the mark-administration system (MAS). According to some lecturers, the old KEWL failed to provide "*what was necessary*", which resulted in the system only being used for drawing class lists (Stoltenkamp, Kies and Smit, 2007:1295).

However, the old KEWL system was appreciated by some of the users, because it allowed lecturers to control and manage their content. It is unclear to the current eLearning support unit (EDSU) just how many users were actively using the old KEWL system, prior to 2005, as members of the TLTU division failed to adequately capture their client base (Stoltenkamp, Kies and Smit, 2007:1295).

Academics were very resistant to this Open-Source home-grown eLearning System. The resistance among institutional staff (including academics) largely emanated from the association of eLearning with the Mark-Administration System (MAS), which had been built into the eLearning system; and according to the perception of most staff members, this had failed to support their day-to-day work. This resistance was further characterised and enhanced by a general feeling exuded by staff that the Open-Source system had been imposed on them[13].

Lecturers also perceived the Open-Source eLearning system as an experimental, second-grade system that had not been quality assured. Moreover, eLearning results in significant change and "*reorganisation*" in an institution, often cause a "*disturbance of the status quo, a threat to people's vested interests in their jobs, and an upset to the established way of doing things*" (Kotter and Schlesinger, 2008:130).

5.4 A non-coercive approach: Internal marketing and attaining eLearning buy-in

Various experiences have been noted in relation to the approaches adopted by several HEIs in implementing eLearning. Initially, in some early adopter HEIs, the approach included the digitisation of face-to-face learning material without the assistance of instructional designers. As a consequence, most of the materials that were posted electronically were not pedagogically sound for the digital environment.

[13] Particularly by the "author" of this open-source system, the then ICS Executive Director, who had assumed this portfolio of responsibility.

Nonetheless, institutions were quick to realise that eLearning is about students' learning; and the Instructional designers (IDs) were then brought into the picture (Maznah and Hussein, 2004:5).

However, this realisation and change in HEIs with regard to the implementation of eLearning is considered as "*a grindingly inexorable process and several major drivers are persistently pushing the eLearning message across the world*" (Holmes and Gardner, 2006:149). In the case of this study, it was caused by the changing environment that was characterised by the integration of eLearning in the conventional teaching-and-learning practices, performed by the E-Learning Development and Support Unit (EDSU) at UWC.

Since its inception in May 2005, the EDSU has followed a non-coercive approach linked to several of its own methodologies and strategies and applied in achieving broad eLearning buy-in within a resistant environment. This resistance is, however, not new. Kotter and Schlesinger (2008:133) noted that that resistance can be due to a "*lack of trust*", together with the perception that the adoption eLearning practices will "*cost them more*" than maintaining the cost-effective status quo.

The non-coercive approach applied at UWC was critical, as the eLearning-support team stepped into a situation where there was a lack of trust, and where there was a perception that eLearning adoption could cost the users more in terms of time and potential frustration. This view stemmed from the perception that the UWC Open-Source eLearning system was merely experimental.

Maznah and Hussain (2004:3-5) noted that the planning of Information and Communications Technology (ICT) for teaching and learning is yet to be well thought-out; and that a number of these plans still remain in the hands of those accountable for managing the eLearning project at the institutional level. It was extremely important for EDSU to embark on a non-coercive approach (eLearning-Awareness Campaign) and to recognise the extent of the politics within the institution that might influence eLearning initiatives (Holt *et al.*, 2001:272).

Thus, carefully considering previous user experience as guiding principles, it was necessary for EDSU to assess some areas of resistance, before embarking on an eLearning-Awareness Campaign that would eventually affect organisational cultural change.

Resistance and barriers to the application of eLearning by academics is to a larger degree subjugated by the essential requirement of support (because of time and workload), and are also determined by the knowledge and skills needed to facilitate such online teaching (Shannon and Doube, 2004:114). This caused EDSU, from the onset, to concentrate on those academics that were willing to pilot eLearning – and thus, not to spend too much energy on academics who did not aspire to engage in the inevitable teaching and learning changes (Stiles, 2006:5).

5.4.1 Change in organisational culture

Lockitt (2004:7) has aptly depicted the inevitability of organisational change and people's natural resistance to it: (i) *the urgency of the need for change,* (ii) *the degree of opposition or resentment,* (iii) *the power of the individual/group initiating the change*, and (iv) *the necessity for information and commitment*. In this regard (Delrio and Dondi, 2005:217) argues that foresight is important, especially as it "…*is to prepare ourselves for the future and not for any future but for the future that is most desirable*…". In addition, (Quilter 2000 as cited in Mouzakitis, 2010:3915) argues that organisations "*need to re-evaluate systems and learning culture within their organisations, to ensure that they become the dynamic, flexible and responsive organisations".*

Furthermore, Mouzakitis (2010: 3914) points out that in order for organisations to respond to the "*renewed and accelerating pace*" of technologies, they need to respond to "…*updated requirements of economic trends and goals and educational planning has to be shifted to new forms of instructional content and delivery*".

In accordance with the foregoing argument, for eLearning to really work effectively, it must be focused on the specific learning needs of the individual. Thus, eLearning although it has promise, is considerably curbed by context; and requires an all-encompassing process which does not neglect significant issues of

pedagogy and learner response to eLearning (Homan and Macpherson, 2005). Moreover, processes which consider cultural and organisational factors capable of sustaining innovation; especially processes which inspire educators' to experiment with new innovative initiatives (Stiles and Yorke, 2007).

Oliver and Dempster (2003), in Lucas (2006:480) highlight the importance of the operational perspective and the fact that there is no one apparent successful direction that could guarantee that eLearning would be implemented. It is against the above backdrop, that EDSU bore the central mandate to implement eLearning at UWC. In the initial phase of carrying out this mandate, the EDSU team made an analysis of the institutional environment, the attitudes towards eLearning and the Open-Source learning management system.

This analysis exposed the earlier mentioned staff viewpoints regarding the eLearning system. EDSU thus deemed it necessary to embark on a campus-wide eLearning Awareness Campaign to mitigate the existing ambiguities of eLearning among staff and to call on academics – in a subtle and non-coercive manner – to adopt eLearning practices. The challenge in this campaign was posed by the fact that EDSU and the campus community had no input in choosing an eLearning platform. Thus, the only way to adopt eLearning was through changing the mindset of academics in an environment resistant to an Open Source eLearning platform through the awareness campaign which is discussed under section 5.5.

EDSU had to consider, as Lucas (2006:479) states, whether a smarter approach to the implementation of learning technologies was possible. This involved simultaneously focusing on the academic organisational culture and the need to transform academics' current teaching practices. A "*balanced approach*" was necessary, due to the varying perspectives and educational needs of stakeholders, in particular with regard to the issues of diversity, quality, creativity, stable systems – and a competitive market-related standing (Holt *et al*., 2001: 279).

Ambursley (2002:1) highlights the difficulty of driving organisational mindset change, as "*a people war*" that must be waged to win the "*hearts and minds*" of the people. This can be achieved through a continuous Awareness Campaign, which involves the personal incremental changes of the academics who called on the eLearning team voluntarily. The academics who voluntarily made the necessary

changes to supplement their face-to-face instruction with ICT, accepted that globalisation is causing a transformation in the workplace, especially in terms of how ICTs enable institutions and people to work autonomously and unconfined by geographical space (Ambursley, 2002:2).

5.5 An eLearning-awareness campaign

Rumble (2001:17) has noted that eLearning, a guaranteed "*killer-application*", is here to stay. The author uses the analogy of a game that cannot be dodged, because it is about organisational fortitude. However, the adoption of eLearning across the greater campus community does not happen serendipitously. It requires staff-development strategies directed at a critical mass of knowledgeable online facilitators, who would improve the sustainability of the integration of eLearning into the normal teaching-and-learning practice (Wilson and Stacey, 2004:33).

In this regard, the development of academic staff can be perceived from the position of "*diffusion of innovation*", whereby there is movement from early adopters to the institutionalisation of eLearning, focusing on staff training and support of the larger, mainstream campus community (Wilson and Stacey, 2004:33).

The UWC eLearning Awareness Campaign was done through: the establishment and maintenance of an integrated support structure comprising: (i) Persistent communication and continuous support; (ii) eLearning lunch-time seminars; (iii) an annual eLearning colloquium; (iv) continuous face-to-face scheduled training and one-on-one office-consultation sessions; (v) departmental visits; and (vi) eLearning incentives.

These efforts were aimed at encouraging and motivating academics to adopt eLearning practices on a voluntary basis, in the complex environment that existed at UWC at the time of this study.

5.5.1 Persistent communication and continuous support

Although academics have clearly stated their future intention of using eLearning, many factors inhibited the implementation of this usage: (i) Time and workload demands; (ii) the lack of knowledge and skills; (iii) perceptions about the actual usefulness of eLearning for improving outcomes; and (iv) the perceptions on the stability of the ICT infrastructure and the eLearning systems (Shannon and Doube, 2004: 114).

To alleviate these inhibiting factors, the EDSU has persistently and consistently, since its inception in 2005, sent out emails to academic staff inviting them to attend training sessions, and outlining the programme, as well as the schedule and packages that were being offered.

This persistent Awareness Campaign has created a support environment, which was able to offer reliable and astute advice to clients, thus building a vital relationship of trust amongst the campus community. It was important that the EDSU be perceived as a unit that was able to offer continuous training and support.

5.5.2 eLearning lunch-time seminars and eLearning champions

Lunch-time eLearning seminars were directed towards instilling a cultural change at UWC – by inviting lecturers to present and share their eLearning experiences and challenges. This aspect of the campaign aimed to create awareness around another important stance of the support unit, which states that an eLearning system is a progressive new tool for teaching-and-learning. It was at these seminars that the eLearning champions were able to openly discuss their actual experiences and challenges. This is also in line with a belief that eLearning systems should not be used in higher education unless there is a change in the use of the system that presents *inter alia* an understanding of the specific skills required by learners (Fetherston, 2000:76).

At UWC, these consultative eLearning seminars have been a learning curve for the presenters (eLearning champions/lecturers), receivers (attendees) and trainers (eLearning support staff). It has also been noted

that through these seminars, the majority of lecturers have showed an interest in the use of eTools to supplement their face-to-face instruction.

The recognition of eLearning champions has become popular, since they are able to market the eLearning approach in an institution or support an eLearning project (Holtham, 2005:24). Although eLearning champions at UWC have no obligation to assist their colleagues or the eLearning Unit, they have taken on initiatives as personal, voluntary developments, which enable them to also engage in research. Thus, the EDSU does not currently experience "*the challenges faced in sustaining and developing eLearning champions, including work overload, and local dissemination issues*" (Lucas, 2006:480).

Rather, some of these eLearning champions have become the drivers for change within their own departments; and they can also advise colleagues interested in making use of eLearning (Lucas, 2006:479).

5.5.3 Continuous training and consultation for staff and students

E-Learning support units vary extensively across HEIs (Wiles and Littlejohn, 2003; Oliver and Dempster, 2003; Lucas, 2006:4). These eLearning units or eLearning teams may operate across departments within the institution or assist academics on specific projects (Lucas, 2006:479). Shannon and Doube (2004:115) highlight the fact that academics do not effectively access staff-development programmes; and it suggests integrated staff development training activities that entail short, specialised workshops, and the availability of templates that could serve as guidelines for effective online content creation.

Hence, eLearning staff and student training forms another fundamental element in the non-coercive approach adopted by EDSU, and is an integral part of the Awareness Campaign. The EDSU team provides training to academics, students and other academic-supporting staff through scheduled face-to-face sessions and a one-on-one office-consultation approach. The training is conducted by EDSU's integrated functional teams: Instructional Design; eLearning Student Support and Training; ICT Staff Training and Digital Academic Literacy teams.

The follow-up one-on-one office consultations are provided for those who have attended training sessions, as well as to those who were unable to attend the scheduled face-to-face training, due to time-constraints and various other commitments. These personal one-on-one office consultations are an approach indicative of the design of support that is associated with the different levels of needs or the willingness of academics at that time (Wilson and Stacey, 2004:5). It is also an approach that focuses on the "*softer S's*": s*taffing, skills, style and shared values, which are more difficult to change, and take a long time to do so* (Bradach, 1996:8).

Furthermore, due to the lack of basic computer literacy skills amongst students entering UWC, it is deemed necessary that basic computer literacy skills are transferred to first-year students. EDSU's Digital Academic Literacy (DAL) team offers accredited (formal) and non-accredited computer courses. Digital Academic Literacy is an accredited course in Open Source and Propriety software and covers twelve (12) one-hour sessions in Word-processing, Internet and email, spreadsheets and presentations.

The navigation of the eLearning system and the use of various communication and assessment eTools have also been integrated into the student-training programme. The course carries a value of five credits towards the student's academic programme.

5.5.4 Departmental visits to re-emphasise the eLearning model and the support team's approach

From this study, it soon became evident that change is hard to implement. At the time of the establishment of the eLearning unit in 2005, the UWC campus community was very resistant to the use of the Open-Source home-grown eLearning system. The inception of the unit was characterised by strong resistance from various lecturers across most of the faculties within the institution. The EDSU, therefore, undertook departmental visits to assess the various eLearning perceptions.

These opportunities were also used to advocate the role of the EDSU team, and how the team could promote the effective use of eTools, rather than being perceived as the back-end IT support of a specific learning-management system. Hence, the eLearning Manager and Instructional Design team conducted

departmental visits and made use of the Online-Creation model (Figure 5.1) for effective demonstration and discussion about the use of eTools.

It is important to note within this approach that the EDSU team departmental visits were only undertaken upon invitation by the lecturer, thus re-emphasising the EDSU's non-coercive approach in driving eLearning at the institution. The visits have been held across faculties and departments, which served as a significant and gradual shift in the voluntary adoption of eLearning within a complex environment. This is indicative of a significant and gradual shift in the voluntary adoption of eLearning within the complex milieu of the UWC environment.

These departmental visits emphasised the approach taken by the EDSU: that eLearning staff development would possibly be more successful, if the focus were placed on the positive objectives of the academics with regard to eLearning (Shannon and Doube, 2004: 115).

The departmental visits endeavour to ensure that the academics perceive the eLearning-support team as aspiring to enhance the technical as well as the instructional design skills for effective online teaching (Wilson and Stacey, 2004:3). During the visit, it was emphasised to the lecturer that his or her decision to enter the eLearning environment should be an educational decision rather than a technological one (Lujan, 2002:74). The demonstrations enabled the EDSU team to create the awareness that an excellence of content and technical implementation is necessary, but not sufficient, as there are other important components regarding the eLearning system's effectiveness that should be explored, before key input is made (McCormack and Jones, 1998:147).

The eLearning support team, through demonstration of the eLearning model (Figure 5.1), and the discussions regarding the pedagogical value of the eTools, took another stance and presented the eLearning support team as "*non-evangelists*" for any particular eLearning platform (Stoltenkamp *et al*., 2007:8). Moreover, the departmental visits emphasise the need for a flawless relationship between the subject area and the technological processes, as well as a symbiotic relationship between knowledge, skills and attitudes for technology and the subject disciplines (Jacobsen, 2000:23).

5.6 The development of an initial eLearning model

Phase 1 of this case study together with the initial literature review presented here, resulted in the creation of the eLearning model (presented in Figure 5.1), which was developed based on the context of UWC, as deliberated above. The need for the development of an eLearning model that focuses on the creation of online courses through the use of ePedagogy arose from the numerous departmental visits by the eLearning Manager and the Instructional Design team. The aim of the eLearning model was to overcome the initial resistance towards instructional design, and to enhance the adoption of eLearning practices as supplementary to traditional face-to-face instruction, which had been in existence since the establishment of the unit.

5.6.1 Conceptualising the eLearning model to enable blended teaching-and-learning practices

The structuring of activities – the type of tasks and the assessment approach – for the classroom will inevitably become more demanding, as educators increasingly employ computer technology. It would be erroneous to take for granted that educators will review and plan teaching-and-learning activities, according to the demands of new technology (Lim and Chai, 2008:808). Thus, it is important that academics at Higher Education Institutions (HEIs) adopt ePedagogy skills, in order to respond to the advances of educational technology in supplementing their traditional instruction. Technology has become a vital component of education – unfortunately, without taking into account or assessing whether it necessarily augments learner-focused activities (Adams and Brindley, 2007:26).

With reference to the above, Figure 5.1 below presents an eLearning model for *Online-Course Creation*. This model presents a blended ePedagogy training approach for lecturers (and tutors) that would enable them to manage and take ownership of their online experiences and improve their basic computer literacy skills (Mayedwa, Stoltenkamp and Kasuto, 2009). Lecturers using this model are encouraged to engage effectively with the eLearning tools, in order to deliver more effectively on their core teaching-and-learning activities (Stoltenkamp, Kies and Njenga, 2007:6).

Figure 5.1 :eLearning model: Online Course Creation

The eLearning model presented in Figure 5.1 reflects on the different focus areas of a blended ePedagogy approach to online courses/modules; and it is categorised by:

- *Access*;
- *Socialisation and familiarisation*;
- *Information exchange*;
- *Maintaining substantive communication;* and
- *Development as a knowledge builder*.

Moreover, the model highlights the vital commitment of an integrated support structure, whereby the lecturer/facilitator/e-moderator/tutor and eLearning support team jointly take ownership of the implementation of interactive online-course creation (Mayedwa, Stoltenkamp and Kasuto, 2009). This is designed to enable all lecturers and students to become self-directed, independent learners, and to develop as knowledge builders through the engagement of interactive-online courses. The model includes the five stages of the generic Instructional Design (ADDIE) model, coinciding and linking with the stages deliberated by the work of Salmon (2004) regarding online teaching-and-learning (e-moderation). As shown in the model, these stages are:

- Analysis;
- Design;
- Development;
- Implementation; and
- Evaluation.

The sections below (5.6.2 – 5.6.6) deliberate on the blended ePedagogy training programme, and endeavours to ensure the successful implementation of online courses; and to, foster facilitation and enable an online community that would be able to navigate and use eTools effectively.

5.6.2 Stage 1: Analysis – clear motives for going online (gaining access to the eLearning system and support services)

UWC lecturers have access to IT resources; face-to-face scheduled ePedagogy sessions; and one-on-one office consultation. The lecturers are able to call the eLearning unit directly, and have access to dedicated email support. Salmon (2004:31) noted that lecturers require "*information and technical support to get online, and strong motivation and encouragement to put in the necessary time and effort*."

In addition, at UWC, access to online information for staff and students has been prioritised. It has become the joint responsibility of the eLearning support team and the academics (in particular, those ultimately responsible for online modules/courses) to ensure that learners gain enough knowledge about ICT, to be able to successfully navigate the eLearning tools. Hence, it is vital that both the eLearning team and the responsible lecturers acknowledge the importance of ePedagogy training, and therefore integrate ICT training into their curriculum right from the start.

The existence of the auxiliary factors that contribute to the creation of a conducive environment have also been confirmed by America (2006:ii) who extensively explored the association between certain "*antecedent factors and the adoption of a specific technology*", such as an eLearning system. America (2006:80) further emphasised the need for training, in order for users to recognise the usefulness of the system. Users who are cynical of the educational consequences of a particular technology could only make knowledgeable decisions through exposure to training and implementation (America, 2006:80).

The student performance captured and analysed in this study has provided fertile areas for researchers seeking to analyse the learning trends. Of paramount importance on students' performance has been the successful incorporation of ICT sessions into programmes, whereby the sessions are not viewed merely as ICT sessions, but rather as subject-matter sessions enabled by ICT. This involvement has happened right from the time the students joined the university. Student orientation becomes a platform for exposing prospective (and also current) students to the eLearning environment that is now available to them. This practice is supported by pertinent literature regarding student orientation (Gottesman and Baer, 2006:45; Masters and Duffield, 2004:4; Laurillard, 1993:193).

Research findings have concluded that student orientation covers all aspects of university life – including how tuition is going to be dispensed to students (Gottesman and Baer, 2006:45; Masters and Duffield, 2004:4). Furthermore, students who are exposed to ICT training during an orientation programme become familiar with the eTools within a short timeframe (Masters and Duffield, 2004:4), thus enabling them use those tools to their learning advantage. This is vital; as quality pedagogic design necessitates having the students' information and "*supposed prior conceptual state*" challenged and further developed (Laurillard, 1993:193). Bearing all this in mind, and in order to appropriately support students who are expected to engage in the online communication, content and assessment, the eLearning-support team and the lecturer should be equipped with the requisite analytical information and a clear motivation for the creation of an online course.

5.6.3 Stage 2: Design – specifying clear instructions (socialisation and familiarisation)

The lecturer/facilitator creates an orientation section at the start of his/her online course that enables students to become familiar with the specific eTools, and with each other, as they "*need to identify with each other; to develop a sense of direction online; and they need some guide to judgment and behaviour*" (Salmon, 2004: 35). In this regard, the students were encouraged to post introductory messages requiring them to share something about themselves in a discussion forum. Online lecturers/facilitators designed "*non-instructional strategies (e.g. greetings, exchange of personal information), which encouraged social relations*" (Henttonen and Blomqvist, 2005 cited in Liu, Magjuka and Lee, 2008:843).

Students were also requested to upload their pictures and update their profiles in the "*personal space*" within the eLearning system. The lecturers/facilitators were expected to model this behaviour by uploading their own pictures, as "*it is essential to create an atmosphere where the participants feel respected and able to gain respect for their views*" (Salmon, 2004:36).

A course outline created in the early stages of the course, ensured successful navigation and structure. The training facilitators and lecturers ensured that expectations, instructions and objectives for the online module were made clear from the start. Within the online training course, the students are directed to specific dates linked to relevant information and clear instructions, as it is apparent that students need clear instructions on what is expected of them when engaging in online activities (Masters and Duffield, 2004:4).

The lecturers/facilitators were also encouraged to avoid using an academic tone at this stage, and to ensure that a private, personal online space was created where even demotivated students could be reached. Salmon (2004:37) mentions that a good way to do this is through email, curbing "*flame and discomfort*".

However, enabling the personal online space for students does not mean that each student needs to be taught individually. Rather it entails managing teaching to enable it to fit well in diverse ways with: (i) The personal characteristics of each individual; (ii) the consideration of learning styles; and (iii) becoming familiar with the student (Dean, 2006:953). A mutually developed eLearning module with sound pedagogic principles should enable a student to gain an apt understanding of the eTools, which help to enhance the success of online teaching and enable students to engage in constructive learning experiences, and to realise the benefits of eTools (Dawley, 2007:952; Lim and Chai, 2008:825).

5.6.4 Stage 3: Development – producing relevant online material (stimulating information exchange)

The production of relevant online material is equally important to the use of eTools. It is not sufficient to equip learners with technical skills, but they also need the skills to use the eTools effectively (Mkhize, 2005:18). There is a link between the use of eTools and the relevancy and familiarity of the online learning material, as well as the level of competencies and skills of the learners needed to actively engage the eTools (Mkhize, 2005:18).

It is thus important that the lecturer creates an online course with relevant content linked to communication and assessment eTools, in addition to digital media, before the actual online engagement takes place. It must be highlighted that digital media (such as screencasts, photographs [stills], audio [podcasts], video [vodcasts], and digital stories) should be effectively used to enhance interactive online course content and to support effective institutional marketing.

These can be further supplemented with content on a CD-ROM/DVD or links to other social networking sites and groups.

However, the use of digital media should be carefully designed to support the learning outcomes. Thus, the mutually designed online module/course by the eLearning team and lecturers was organised into manageable chunks – thereby ensuring that the students did not have to scroll through large amounts of text – which could be de-motivating. The online content was also linked to other relevant online resources, although lecturers need to ensure that students are not linked to too many outside resources, since this could be confusing. Students will look to the facilitators to "*provide direction through the mass of messages and encouragement to start using the most relevant content material*" (Salmon, 2004:39).

The use of collaborative eTools, such as discussion forums, workgroups, wikis and blogs, was encouraged during ePedagogic training. The students were reminded that the asynchronous (accessed at anytime and anywhere) discussion tool would enable them to communicate at their own pace, but within a particular timeframe set by the lecturer. The students were also taught how to communicate in a

threaded discussion that depicts an evolving argument. Most students had to be made aware that they need to continue with an open thread, instead of opening a new thread.

They were also encouraged to keep their postings concise, constructive and clear. Thus, the lecturers/facilitators posed questions as the starting point of a discussion topic, which promoted the exploration of a topic and the development of critical-thinking skills. The facilitator's instructions should always be clear; and they should advise students to limit their postings to approximately 200 words, otherwise other students and the lecturers would not be able to cope. The experience suggests that it takes some time for students to realise that they may contribute their own views and share resources via the discussion tool. The lecturer/facilitator should "*celebrate, give value to, and acknowledge contributions to discussion processes and knowledge sharing by participants, and give credibility, authenticity and verification of information offered*" (Salmon, 2004:40), which did happen in this case study. Students were also made aware by the lecturer/facilitator that online discussions and other collaborative online tasks are often intense; and that they need to engage in some research, to explore the related discussion topics, in order to engage in a meaningful discussion. This encouraged them to become independent learners; and, in addition, it instilled a culture of commitment to the preparatory course activities (e.g. pre-reading activities).

Students were also made aware at this stage that the lecturer would eventually transfer some responsibility to them. They were often requested to summarise a discussion thread, for example pulling all the main ideas of a thread together and posting this to the group. It was at this time that the training facilitator and lecturer demonstrated how to summarise a discussion and present a model summary, all of which helped to model the learning behaviour of the student. In this way, the lecturer/facilitator initially assumed the leadership, whereafter the students took over the leadership role. This approach is in line with that of Iahad (2004:1), who believes that the student-focused approach is established by the need for diverse and new learning techniques for lecturers and students that are not situated in the same geographical space.

5.6.5 Stage 4: Implementation – using the project in a real-life context (substantive discussion towards knowledge construction)

In the implementation of an online course, the lecturer should play an active role. The lecturer is expected to determine the pace and the learning behaviour that is demonstrated in the online classroom. Thus, during the ePedagogic training sessions, the facilitator/lecturer would be engaged in activities, where visibility and contribution to an online discussion thread or a workgroup activity can be demonstrated. As a consequence, the lecturer/facilitator was able to organise and manage the collaborative eTools (e.g. the discussion forum and workgroups) into topics, sub-topics and tasks – before the actual roll-out of the online module/course.

The importance of individual accountability and responsibilities in group work is also very significant to the implementation of eLearning projects. An ideal ePedagogic training situation would entail the facilitators having time to assign roles in the group activities to the lecturers (e.g. summariser, moderator, and initiator); as well as making use of peer-evaluation, where one group evaluates another group's work, according to the agreed upon criteria. Students and lecturers should feel accountable to the group or particular assignment; hence, online educators should caution against organising groups subjugated by "*internal styles*". If this cannot be avoided, it would be best to mediate techniques which promote team participation and individual accountability, such as rubrics and peer-reviewed tasks (Liu, Magjuka and Lee, 2008:842).

The development of clear group outcomes that promote collaboration and individual responsibility is another important factor in the implementation of eLearning projects. The lecturer/facilitator should provide the group leaders and student groups with clear expectations and deadlines. To enable the enhancement of team responsibility, Liu and others (2008:843) suggest the need for a holistic view of the design of group work in terms of: (i) Team arrangements; (ii) processes; (iii) strategies for increasing the degree of trust; and (iv) training students in the collaborative techniques for finding solutions to conflict. As (Fischer, Kollar, Mandl and Haake, 2007:19) state that effective collaborative learning is a commendable target; but it is difficult to accomplish; and if the learners are not adequately guided, the essence of it would never be achieved.

Feedback is yet another factor responsible for the successful implementation of eLearning projects. The lecturer/facilitator made the students aware that they would receive feedback in the online environment, when addressing various aspects and skills, such as: content, presentation, writing, communication, teamwork and research. The ultimate objective is to develop the abilities of the learners to embark on self-assessment and evaluation of their own contributions, as a result of constructive contributions from the lecturer and the program. In an online environment, it is important that the facilitator and the learners give feedback on a regular basis.

This calls for thorough planning and progress tracking in a personalised learning environment, which would enable students to become more responsive, gain a positive attitude and develop cognitive skills. Moreover, it should develop the students' individual strengths, and strive to improve their areas that are still in need of further development (Dean, 2006:953).

A peer-to-peer feedback was encouraged, as the learners were urged to give constructive criticism about one another's contributions. Learners were assisted in giving and receiving constructive criticism. Good etiquette and rules for participation are also necessary, if these activities are to succeed. Furthermore, it was made clear to students that they would experience challenges – including perhaps their own possible slips into repressive ways. However, the classroom could be seen as a safe space for engaging in these activities, in order to prepare students for the different online environments in which they are expected to work (Francis and Hemson, 2007:107).

5.6.6 Stage 5: Evaluation – determining the adequacy of the instruction and development as knowledge builders

It is at this stage where the lecturer/facilitator reflects on the ideal online experience, and where students gained confidence and can develop themselves as "*knowledge builders*". The lecturers and eLearning team also reflected on an ideal scaffolding experience, whereby training support and assistance were delivered at critical times – and later removed – until the students could cope on their own. It became evident that the student and facilitator roles are often not clear, and that students can indeed be assigned the responsibility of leading and moderating a discussion forum.

In this regard, how groups collaboratively have researched a topic and presented it to the class were discussed. Ideally, as Salmon, (2004:48) concurs that it is at this stage where lecturers and students "*are essentially using a constructivist approach to learning*", and where "*challenge and argument will foster deeper thinking and reflection*".

It is also during this stage that the benefits of the online assessment eTools (such as assignments, essays, worksheets and multiple-choice questions) and eTools that could be used – both as communication and assessment tools (e.g. wikis, blogs and discussion forums) – were highlighted to the lecturers. Lim and Chai (2008:824) believe that tests and examinations have a great impact on a students' career path and the fact that educators are apprehensive about students' marks is justifiable. In addition, the socio-cultural conditions that educators work in are more significant than the pedagogical issues; thus "*it may be easier to shift the assessment system to create a ripple effect on teachers' pedagogical beliefs and classroom practices than to challenge teachers to change their beliefs and practices*" (Lim and Chai, 2008:825).

The argument here highlights the need for regular assessment and more effective feedback. However, although there is much research that focuses on supporting technologies and content delivery, based on different learning approaches, there appears to be a lack of research around the supporting technologies and the outcomes of assessment and effective feedback (Iahad, 2004:1).

5.7 A change in the usage of technology means a change in pedagogical paradigms

The *eLearning Model: Online Course Creation* was employed by the eLearning team at UWC to drive ePedagogy in a complex higher education environment, since a change in the use of technology by educators is dependent on a change in their pedagogical paradigms (Lim and Chai, 2008:808). Thus, the eLearning team aimed to encourage the academics who will ultimately need to design and develop an interactive online classroom for the student.

In this regard, the eLearning model presents techniques, such as: (i) A revolving team leader responsibility; (ii) clear task objectives; (iii) individual accountability; and (iv) recurrent effective

feedback that together strengthen the trust in online groups (Jarvenpaa, Knoll and Leidner, 1998, as cited in Liu, Magjuka and Lee, 2008:843).

5.7.1 Work practice, support processes and reward systems

It has been highlighted that organisations are in need of a better understanding of continuous professional staff development; especially in relation to variety, diversity, different perspectives; and moreover accommodating the needs of the staff (Livingston and Robertson, 2001). Successful staff development initiatives, like successful change, require notable skill, involvedness and persistence of effort. If lecturers are requested to develop and deliver new eLearning courses, then the support process must involve change management, because eLearning development requires careful attention to academic work practice (Stoltenkamp and Kasuto, 2009:721). The support process at UWC, therefore, involved change management, such as maintenance and the updating of the:

- Content organisation and pedagogy;
- Learner support issues;
- Technical support; and
- Time management.

The view of the UWC support team was, as Badat (2004:44) highlighted this issue, that academics need to be rewarded if they are expected to contribute to the social goals of the "*new higher education landscape*". Schuler and Jackson (2006:7) highlighted the fact that training and developmental initiatives could enhance the knowledge and skills necessary for work-related performance. However, the most proficient employee needs to be motivated, in order to function competently.

Institutions can deliberate various options that will influence a long-term strategy for attaining adequate eLearning financial returns (Ruth,2006:63). E-learning would certainly increase the workload of academics; and although online teaching could be exciting, institutions should consider paying lecturers/facilitators for their extra working hours (Rumble, 2001:9). In that regard, lecturers at UWC have been encouraged to work towards an eLearning incentive, by receiving a laptop provided by the eLearning unit.

Lecturers' involvement and performance would be measured against a rubric, which clearly depicts the outcomes that they should achieve, in order for them to gain access to the incentive, such as: (i) Participating in a face-to-face eLearning training session; (ii) developing an interactive online course; (iii) allowing their students access to eLearning training, to ensure that they are able to navigate the system effectively; and (iv) presenting at a lunch-time eLearning seminar or eLearning colloquium, sharing their online experiences and challenges with the greater campus community.

This *give-and-take approach* has been an effective internal marketing approach for the eLearning team at UWC where academics receive an incentive, and the eLearning unit gains as –the clients engage in eLearning discourse with other colleagues during such eLearning seminars. Thus, information about the team's training and support services spreads through face-to-face interaction. Jackson, Schuler and Werner (2011:17) have noted that "*…organisations need to…retain those who perform their jobs well*…".

Satisfied employees are more likely to feel motivated, while disgruntled employees exercise less effort, which has consequences of declining performance and eventually total ineffectiveness. There is, therefore, a need for Higher Education Institutions (HEIs), including UWC, to develop integrated staff development strategies, which would cater for incentives that could create a motivational environment for staff, especially research-focused strategies, which would attract their attention (Shannon and Doube, 2004:114).

5.7.2 The impact on student eLearning training and support

During Phase 1 of this case study, the eLearning support team believed that the implementation of sound ePedagogic principles would have a direct influence on the students' performances. However, it was found that the prerequisite for this was a need for students to become familiar with the technology and new teaching methodologies, as well as the specific eTools involved. The *Online Course Creation* model could also be related to student access to training, online material and the use of asynchronous eTools.

This is important, as giving the geographically dispersed (and often working) disadvantaged students access to the university through eLearning would enable them, as Seepe (2006:2) puts it, the redress of national inequalities, while simultaneously addressing the moral and social responsibility of universities.

Thus, it was vitally important that students be properly oriented. At the UWC, student orientation and training sessions are conducted in conjunction with learner-support material (online instructional material and material placed on CD-ROM). A blended learning approach, ensuring the attainment of computer literacy skills, instructional material (for example, with a backdrop of information relating to HIV & AIDS), and the exposure to the learning management system (LMS), was consequently applied. Students are taught how to retrieve relevant electronic information, and how to access and navigate the content, communication and assessment tools of the eLearning system.

5.8 eLearning moves 'into the academic inner circle' as a role-player

As a result of the progressive and non-coercive approach in getting users to adopt eLearning practices voluntarily through the continuous eLearning Awareness Campaign, the progress of eLearning growth in Phase 1 is reflected in the quantitative evidence. Through the ever-growing recognition of the EDSU has become an important role-player in the effective delivery and decision-making of teaching-and-learning at UWC. As higher education increasingly embraces technology-delivered learning opportunities, the EDSU through its persistent communication, training and marketing strategies represents a unit that recognises that no matter how "*great a teacher, scholar, researcher or an individual may be, he or she needs to have accurate expectations of how roles change, a modicum of technological mastery, and a set of instructional strategies appropriate for the new domain*" (Kidney, 2004).

Through persistent team commitment, internal marketing, communication, passion and dedication in phase one, there is now growing evidence that the eLearning team has "*moved into the inner circle and has cracked the code*" (Mokou, 1993:1). The increasing involvement of the EDSU manager in the senate committees for Teaching and Learning and Life-Long Learning; the Academic Development Forum; and the Institutional Operating Planning (IOP) task team are testimony to the above citation. This portrays a

definite stance that eLearning is being taken seriously by institutional leaders, as a significant element in teaching-and-learning at UWC.

It is important that EDSU should always be visible at these forums, as it is vital to "*be in the right place at the right time*" to drive the eLearning strategies (Mokou, 1993:2). Moreover, it is, according to this study, indicative of eLearning implementation to highlight discussions regarding the needs and anxieties of stakeholder groups (Wagner, Hassanein and Head, 2008:26) and the achievement of senior leader sponsorship, which encourages the leaders who own the policies to be receptive to change (Stiles, 2006:6).

5.9 Reflective quantitative evidence: Voluntary lecturer buy-in and student support

Quantitative evidence was gathered in this phase to illustrate the progressive non-coercive eLearning-awareness campaign. The following quantitative evidence (5.9.1- 5.9.2) presents the overall number of lecturers who voluntarily contacted the eLearning team for support; and subsequently requested that their students receive training on how to effectively use the eTools for the period, September 2005 to December 2006.

5.9.1 Reflections on lecturer training, September 2005 to December 2006

Tables 5.2 and 5.3 reflects the number of staff members (from various faculties and support units) that attended scheduled eLearning face-to-face training sessions; and one-on-one office consultations since the inception of EDSU, September 2005 to December 2006. The figures (related pie-charts) are graphical representations of the relative percentages of the number of staff members who attended the training sessions (September 2005 - December 2006).

Table 5.2: Lecturer training and support, 2005

Faculty	Consultation	Face-to-Face	Total
ARTS	12	2	14
EDUCATION	2		2
EMS	15	8	23
CHS	12	17	29
DENTISTRY	1	0	1
LAW	6	4	10
LIBRARY	0	0	0
PHARMACY	0	9	9
SCIENCE	1	14	15
SUPPORT DIVISION	4	35	39
TOTAL	53	89	**142**

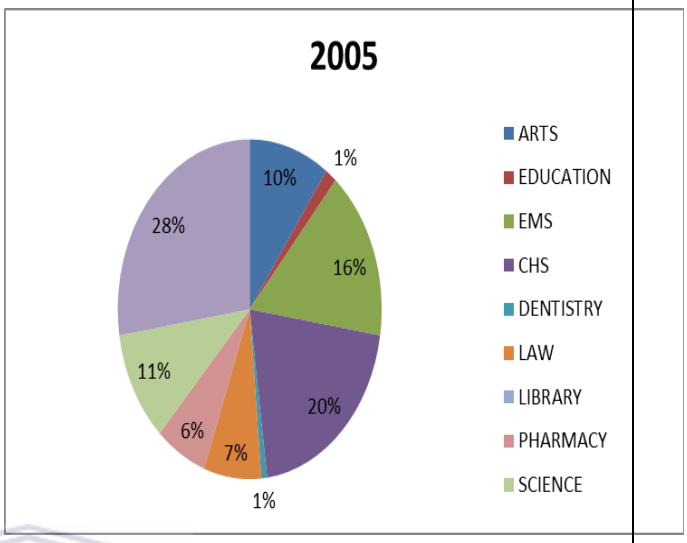
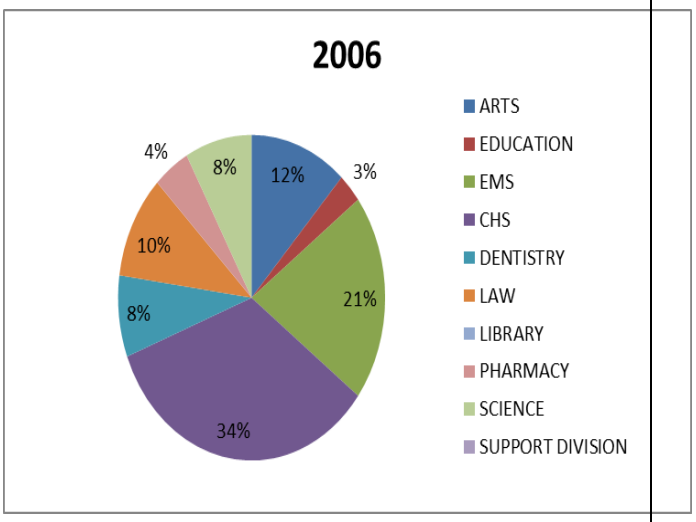


Table 5.3: Lecturer training and support, 2006

Faculty	Consultation	Face-to-Face	Total
ARTS	10	6	16
EDUCATION	0	4	4
EMS	18	10	28
CHS	8	38	46
DENTISTRY	1	10	11
LAW	14	0	14
LIBRARY	0	0	0
PHARMACY	5	1	6
SCIENCE	7	4	11
SUPPORT DIVISION	0	0	0
TOTAL	63	73	**136**



Since the first face-to-face eLearning training workshop on 6 September 2005, lecturers and support staff members voluntarily contacted EDSU for training and support for online content creation, communication and assessment activities. Training and support included scheduled face-to-face sessions in a lab setting, as well as one-on-one office consultations, which could take up to three hours per consultation. It should be noted that the Faculties of Community and Health Sciences; and Economic and Management Sciences are the largest faculties within the institution. Hence, there was a large number of training requests from these Faculty staff members.

At the same time, the eLearning support team also noted that faculty members from the [14]CHS and EMS Faculties were more motivated during this phase – to attend training on the use of eTools to supplement their traditional teaching-and-learning strategies. In addition, at the inception of EDSU, a number of participants form support units such as, Information and Communication Services (ICS), Writing Centre, Division of Life Long Learning and staff members from EDSU – attended training sessions to familiarise themselves with the eTools.

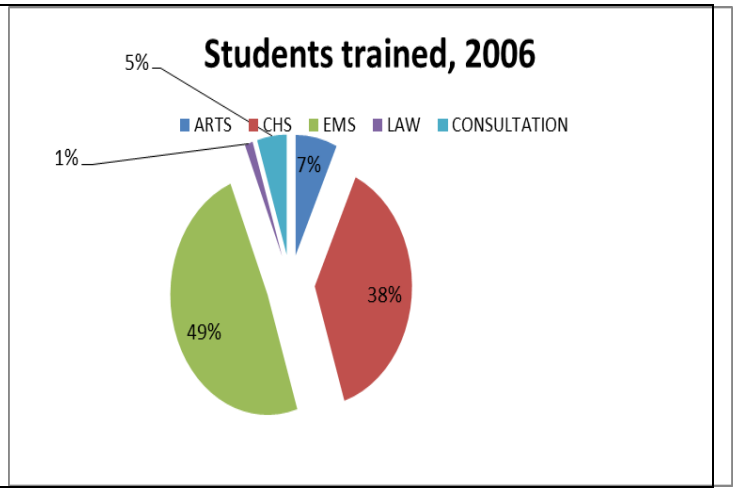
5.9.2 Reflections on student training, 2006

Table 5.4 below reflects the number of students (from faculties and support units) that attended eLearning scheduled training sessions for the period January – December 2006. The figure (related pie-chart) is a graphical representation of the relative percentages of the number of students who attended training sessions in 2006.

[14]Faculties: CHS- Community and Health Services; EMS- Economic and Managements Services

Table 5.4: Student Training and Support (2006)

Faculty	Number per Faculty
ARTS	156
CHS	862
EMS	1100
LAW	30
CONSULTATION	111
Total	**2259**



The reflective quantitative measures highlight the extent to which lecturers have adopted online teaching-and-learning practices, and in turn, requested that their students be familiarised with the use of the available eTools. Hence, student training has been offered (since January 2006) - at the request of the lecturer, once his/her specific online module had been developed. It should also be noted that as more lecturers from the CHS and EMS Faculties had set-up online environments during this period; they also requested more eLearning student training sessions.

Furthermore, this quantitative evidence also supported the initiatives undertaken to bring about awareness of eLearning during this period - through the training of lecturers and students, departmental visits, the awarding eLearning incentives, and the setting up seminars to engage in the discourse.

5.10 Summary

The first phase of the case study which took place from September 2005 to December 2006, has highlighted a non-coercive approach to the implementation of eLearning in a specific HEI, namely: the University of the Western Cape. This study set the scene and presented various focus areas of change management and communication strategies, linked to an eLearning-Awareness Campaign. The discussion is supported by the presented quantitative evidence.

Furthermore, the various focus areas of the Awareness Campaign have led to the development of an eLearning model, focused mainly on the application of ePedagogy for effective blended online course creation, and the way this was introduced at UWC. Consequently, the next chapter will continue with the case study of UWC, highlighting eLearning implementation in a complex higher education domain that goes beyond just focusing on ePedagogy applied to effective online course creation.

CHAPTER 6

UNIVERSITY OF THE WESTERN CAPE CASE STUDY PHASE 2:

IMPLEMENTATION BEYOND THE FOCUS ON E-PEDAGOGY

January 2007 - August 2008

The development of an Inclusive ePedagogy Model

6.1 Introduction

Phase 2 of the UWC case study highlights the implementation of eLearning beyond the focus on the delivery of training programmes. However, as reflected in Phase 1 of the case (presented in the previous chapter), it was necessary for EDSU to embark on an awareness campaign that would familiarise educators with the eLearning support team, the various eTools (communication, content creation and assessment tools) and their pedagogical value. The establishment of an integrated eLearning support unit provided a "*blueprint for designing organisations, fitting the pieces of the organisation together to guide the behaviour of the people – often large numbers of people – toward the accomplishment of the organisation's objectives*": in particular, in this context, UWC's teaching and learning objectives (Bradach, 1996:1).

Applied in the case of this study, the niche teams of the eLearning support unit were tightly integrated to continuously train, support and develop the greater campus community.

The development of an *eLearning model: Online Course Creation* (Figure 5.1) eventually accentuated the existence of certain gaps, which showed that eLearning implementation in a complex higher education domain, goes beyond a mere focus on ePedagogy applied to effective online course creation. This was confirmed in the second phase of the study by an email survey, accompanied by interviews and an additional analysis of the UWC eLearning Strategy document. It was found that there are other factors,

which also contribute to the implementation of eLearning in a HEI, as reflected by people's perceptions at different times of the eLearning continuum.

This led to a revision of the initial eLearning model and the development of an *Inclusive ePedagogy Model* (Figure 6.1).

6.2 The institutional eLearning strategic planning document

The implementation of eLearning at UWC was informed by a set of strategic objectives and expected outcomes in the eLearning strategy document of the University of the Western Cape (2004). A task team was established, consisting of ten stakeholders – representing faculties and support units across the institution (including the previous Teaching and Learning Technologies Unit, which subsequently closed down). The motivation for a multi-stakeholder approach was intended to avoid a narrow focus based only on computer literacy.

This approach resulted in the development of the UWC eLearning Strategic Plan. This will be explained in detail in this chapter.

6.2.1 The main elements of the eLearning strategic plan

The mission statement of UWC highlights the importance of a redress of society, especially given the impact that apartheid had on the South African education system. The idea of an institutional computer literacy intervention plan was proposed in 2003, which further led to the development of an eLearning Strategic Plan that emphasised the need for computer literate graduates. The strategic plan entails key elements, namely: (i) Capacitation and empowerment of human resources; (ii) instructional design principles; (iii) reorientation of students; (iv) independent self-directed learning; (v) a learning management system; (vi) establishment of appropriate partnerships; and (vi) a workplace skills plan.

6.2.1.1 *Capacitation and empowerment of human resources*

The eLearning Strategic Plan highlights the need for an appropriate infrastructure and the capacitation of human resources, in order to equip and empower students and staff with the necessary skills. The strategic plan further suggests that the advantages of eLearning would include its ability to deliver a flexible learning environment, most appropriate for lifelong learning: the "*pre-requisite*" for the emerging "*information society and knowledge economies*". Responsiveness to faculty development and training is critical for the successful change from traditional teaching to eLearning practices (Bates, 2007).

6.2.1.2 *Instructional Design Principles: Foundation for staff development*

The eLearning Strategic Plan also promoted staff development – by making use of Instructional Design principles. This approach would familiarise staff with technology; online course design; and skills and attitudes toward eLearning. The strategic plan also highlights, that academic participation could be increased by institutional interventions, such as support, incentives and academic promotion. Furthermore, *interdisciplinarity* seems to be a key element of instructional design and educational technology. Even though, educators do not have to accept all the views on instructional design and educational technology, it is important that they are made aware of its impact on their practices (Spector, *et al*., 2006).

6.2.1.3 *Re-orientation of students*

The eLearning Strategic Plan also encompasses the re-orientation of students, teaching-and-learning; and integrated assessment interventions – to enable students to be more responsive to the curriculum. There is also the need for the development of a resource-based mode of delivery, comprising a diversity of learning activities. Hence the key element of effective design above, focuses on the student's learning experience, whilst taking into consideration the macro, complex network that affects that experience (Brown and Voltz, 2005).

6.2.1.4 *Independent, self-directed learning*

In order to promote independent learning among its students, the UWC has formulated a policy statement which encourages: (a) The orientation of incoming students with regard to independent learning; (b) the provision of clear learning objectives; (c) the development of alternative learning strategies; as well as (d) catering for the diverse demographic composition of the student population of the institution.

Institutional intervention was also further facilitated through the formulation of an assessment policy and the development of outcome-based modules. Furthermore, the training and development of academic staff on assessment criteria and the integration of technology would enable them to effectively use this technology to enhance their teaching-and-learning practices.

6.2.1.5 *A Learning-Management System*

The eLearning platform for executing the eLearning Strategic Plan was the UWC home-grown open-source Learning-Management System (LMS), namely: the Knowledge Environment for Web-based Learning (KEWL). This system aimed to host interactive online courses accessible to educators and students from any geographical place. Hence it is important that a *participatory design and implementation approach* is expected whereby the eLearning system allows a *two-way street* of continuous communication between the designer and the user; instead of channel which is directed in silos – either to the learner or the educator (Brown and Voltz, 2005).

6.2.1.6 *Establishment of appropriate partnerships*

Globalisation has provided higher education institutions with opportunities to exchange information and establish partnerships. Appropriate partnerships could lead to the development of relevant educational programmes. The institution, through its appropriate external partnerships, has been involved in the development of the innovative and creative use of ICTs, which assisted with the development of the eLearning Strategic Plan and, would inevitably assist the staff and students.

6.2.1.7 *Workplace skills plan*

The UWC has also developed a workplace skills plan to encourage eLearning practices and the development of computer literacies, skills and competencies across all learning programmes. Hence, a Digital Academic Literacy (DAL) programme was developed for those students who do not have basic computer literacy skills. Its main objective is to introduce basic computer literacy skills into the curriculum, especially to first-year students who do not have any experience with technology because of their historical and socio-economic background.

Moreover, a desired state is highlighted in the Strategic Plan, whereby intervention would come in the form of centrally co-ordinated activities within all departments. Thus, the orientation of students may require that they participate in programmes, which require the application of educational technologies.

This UWC work skills plan is important in relation to the national skills plan. The scarcity of skills in South Africa has been identified as one of the main barriers of the country reaching its economic growth targets. Hence, the Department of Labour collaborates with the Department of Education and other governmental departments – as the main drivers of skills development for the nation (Citrus Academy, 2012).

6.2.2 Evaluation of the eLearning strategy

6.2.2.1 *The rationale for evaluation*

Evaluation is an important component of any policy; and it can be defined as *"... a process that determines the value or effectiveness of an activity for the purpose of decision-making*" (Shafritz, 1998:88). Dye (1995:320-321) viewed policy evaluation as *"...learning about the consequences of public policy effects on real-world conditions*". The evaluation of policies has also been regarded as *"... analytical assessments addressing results of public policies, organizations or programmes that emphasize reliability and [the] usefulness of findings*" (PUMA/ PAC, 1999:6).

In general, evaluations are separated into two core categories, namely: process and outcome evaluations (Metz, 2007). The rationale for evaluation is to take stock and make some introspection or judgment on

the progress (or lack of it) that has been made to date. Evaluation helps policy-makers and implementers in identifying the strengths and weaknesses of policies already in place. Moreover, dedication to evidence based evaluation will ensure that policy makers and implementers also make use of evidence from "*national statistics, academic research, pilots, evaluations of past policies and consultation*" with users (Roy, 2008).

The results from an evaluation exercise can be useful in the planning process of future policy formulation, as well as the review and redesign of existing policies. These results could also help in determining and improving the quality of policy intervention, as well as in the budget process. Evaluation and evaluation findings should be such that they link up with the decision-making processes. The relevant evaluation objectives should be clearly defined; and such evaluations should be suitably tailored to match policy objectives, taking into account budgetary and time constraints (Macdonald, Starr, Schooley, Yee, Klimowski and Turner, 2001).

As stated in PUMA/ PAC (1997:8), firstly, evaluation is important when institutions want to identify the extent of progress made in realising the set objectives. Secondly, evaluation can be used to enable institutions to draw lessons from successes and failures, which would help them to make appropriate decisions in future policy formulation, review or re-design. Thirdly, evaluation can act as a way of accountability for expenditure or institutional behaviour, and as a way for achieving transparency, especially towards stake-holders and the institution.

6.2.2.2 *Evaluation of the UWC eLearning Strategic Plan*

The UWC eLearning Strategic Plan aimed to effectively introduce basic computer literacy and eLearning into the curriculum and development of students and staff of UWC. The recent establishment of the E-Learning Development and Support Unit (EDSU) is still ongoing; and should also include a holistic evaluation of the institutional eLearning Strategic plan – in relation to other institutional documents, namely: "Access, *Retention and Throughput strategy; Academic support policy; Curriculum development and Review policy; ICT Services policies and Learning Platform Administration Procedure document*" (Mayisela, WSU eLearning strategic document, 2009-2012). Holistic evaluation is necessary, in order for

the institution to enhance understanding and alleviation of current challenges; and present information about the quality of current programmes and curricula (Mhilu, Llemobade and Olubambi, 2008).

A holistic evaluation of the current situation at UWC against the framework of the eLearning Strategic Plan would need to explore the following issues: (i) building of human capacity; (ii) proposed financial model which includes an IT levy on student fees; (iii) stipulated resources**;** and (iv) collaboration with other departments on eLearning research undertakings.

6.2.3 Strengths and areas for further development of the eLearning strategy

The emphasis of integrating basic computer literacies for students at entry level is a significant step towards attaining the policy objectives. The involvement of the academic staff in the development of an eLearning strategy for the institution is also a positive move. Targeting various departments should help to decentralise the task of imparting digital academic literacies at the departmental level. Making computer literacy part of the academic staff promotion criteria and student assessment provides an encouragement in the acquisition of digital academic literacies.

The establishment of internal and international partnerships should facilitate the sharing of ideas among and within institutions, thereby advancing the strategic objectives set in the UWC eLearning Strategic Plan.

Despite the above-mentioned strengths, no set targets for the infrastructural development have to date been provided. The implementation strategy did not stipulate the dire need for dedicated back-end support and maintenance for a home-grown open-source eLearning system. Moreover, the implementation strategy focused heavily on a business overview; failing in the process, to acknowledge the necessary approaches and interventions for integrated team ground support.

The institutional eLearning strategic planning document should be reviewed, as an eLearning planning document should serve as a *road-map* that facilitates educators and leaders with workable processes,

practices, phases and steps of implementation in order for them to enhance their initiatives; and provide them with relevant associations of services and support (Ministry of Education, Undated).

6.3 Determining factors of 'eLearning success': Findings in 2007

6.3.1 Email questionnaire: November-December 2007

The data collection for the second phase of the study was done in two stages. The first stage, undertaken in December 2007, utilised an email survey as the mode of investigation. The essence of the survey was to determine the extent to which participants use eTools to supplement their traditional classroom instruction; how well they understood the term '*eLearning success*'; as well as their perception of the factors that impact on eLearning success within institutions.

The population for this process was derived from a wide spectrum of users, namely: (i) academics in the institution who voluntarily enquired about eLearning training, and how they could effectively use the eTools of the Open-Source eLearning system; (ii) institutional leaders; (iii) eLearning support staff; and (iii) eLearning experts and consultants (each having about ten years of eLearning experience) at other higher education institutions (HEIs) in South Africa.

The email survey was guided by a set of three guiding questions, from which the researcher intended to establish the fundamental understanding of the participants' comprehension of the eLearning processes available to them, and the extent to which they have grasped the concept of eLearning success:

- *What do you understand by eLearning success?*
- *When will you know that your organisation has achieved eLearning success?*
- *What are the factors that would influence eLearning success?*

6.3.2 Email questionnaire: Data presentation and analysis

The three questions, mentioned above, set the basis for the investigation to determine the participants' understanding of 'eLearning success', tangible signs of eLearning success within an institution, as well as those factors that promote or impede eLearning success in institutions or organisations. The researcher,

additionally, explored the attitudes, impressions and extent of comprehension of the participants, as well as the use of eLearning facilities within the institution. Each of the 31 responses (herein represented by a 'P' for each participant) - was fully analysed and categorised, according to certain key themes.

6.3.2.1 *What do you understand by eLearning success?*

The analysis of the answers to these questions elicited the following themes: (i) *Lecturers and students make use of and interact with eTools;* (ii) *effective use of eTools to promote learning; (iii) exposure of large numbers of students to the learning situation*; (iv) *integration of eLearning into teaching-and-learning practices*; (v) *familiarising and influencing resistant academics;* (vi) *access to new student populations and increasing throughput;* and (vii) *team work, collaboration and co-ordination of tasks*.

Lecturers and students make use of and interact with eTools

From the responses drawn from the survey, the general notion attached to 'eLearning success' was that it is only after both lecturers and students make use of and interact with the eTools that the system provides, can eLearning be regarded as having succeeded.

[P1]: "*Linked with that is an ability of lecturers to understand how to use e-learning effectively in their modules. This means planning for e-learning activities, putting their modules on KEWL next generation, so that students can access the content and literature timeously*".

On behalf of students, academic responses indicated that eLearning can be said to have been successfully implemented when students can manipulate eTools to supplement their academic work; while for the academic staff, loading notes on the eLearning system and using online teaching could be measures of success for eLearning.

Effective use of eTools to promote learning

Closely related to the above, was the response that for many, 'eLearning success' implied the effective use of ICT to promote learning, with the emphasis being put on 'learning', and not on the technology. The deduction from this common response is that reflection regarding the application of eTools to a learning situation is important, which in turn becomes a measure of success.

[P2]: "*Resources are more and better accessible to students, facilitating learning…but students do not come to rely on lecturers to spoon-feed them electronically'. When e-learning…increases, effective learning and teaching and the general standard of work (as measured against external peer standards) required by lecturers and submitted by students…[should also increase]*".

Exposure of large numbers of students to the learning situation

Another important theme was the exposure of large numbers of students to a learning situation, where the lecturer applies the eTools for the purpose of enhancing students' comprehension of specific concepts included therein. Emphasis was placed on the engagement of large numbers of students who would be able to get access to the retools' and learning material.

[P12]: "…*when there is a use* of *platform for delivering module content and assessment and logistics…and there is a widespread adoption across their (students') several modules*".

In addition, there was also an indication that eLearning enables the involvement of a large number of students; and at the same time enhances lecturers' understanding of students' learning experiences and comprehension of concepts within the online environment.

Integration of eLearning into teaching-and-learning practices

Respondents emphasised the concept of *eLearning integration* and indicated that a measure of eLearning success was definitely, when eLearning becomes a fundamental part of the teaching-and-learning interventions within the institution. In addition, a measure of success was the indication of the integration and application of educational technologies to any teaching-and-learning intervention. Moreover these interventions should be related to accessible online material for students - that is - for the actual audience that it was intended for.

Familiarising and influencing resistant academics

Another general assertion surfaced, stating that eLearning success can be claimed when resistant academics are familiarised with educational technologies and adopt innovative teaching-and-learning practices. This situation involves motivating a hostile community who do not comprehend the

pedagogical value and benefit of educational technologies. Hence respondents admitted that the academics are the people who need to make a paradigm shift regarding the use of education technologies.

[P17]: "*But the people factor is the most influential…until people get to use eLearning, we cannot have any success*".

Access to new student populations and increasing throughput

Respondents indicated that eLearning success could be measured by its impact [P28] "*in reaching out to new student populations, supplementing the traditional face-to-face and distance teaching and learning"*. In addition, this methodology would possibly enhance the quality of teaching-and-learning. Respondents further argued that it was important that there is a focus on the measurement of throughput – that is – a comparison of the pass rate of those students who make use of educational technologies and those who depend on traditional face-to-face methods.

Team work, collaboration and co-ordination of tasks

Respondents expressed the view that eLearning success comes about when the whole team (lecturer and eLearning support) perform together; aligning and coordinating all projects and related online tasks.

[P20]: "…*co-operation of parties involved in the process of setting up e-learning, and when those who are not familiar (including myself) and those who may think they are familiar go through proper training to use e-learning*".

Furthermore this important factor of coordinated tasks was elaborated on in terms of the understanding of 'stages' of eLearning success. The first stage would be the establishment of an eLearning strategy, followed by the appointment of support staff to implement the strategy. This would then be followed by the next stage, where success is measured by the number of students and academic staff adopting eLearning practices to enhance teaching-and-learning. It is at this stage, where constructive tension is high. Finally, the next stage whereby users make independent decisions and implement eLearning effectively could be used as an indication of eLearning success within the institution.

It should be noted that the above-mentioned levels of eLearning success are not quantitative in nature, rather a blend of quantity and quality output and outcomes.

[P26]: "*eLearning success can be measured by the scale and quality of learning interactions among students and between students and lecturers".*

6.3.2.2 *When will you know that your organisation has achieved 'eLearning success'?*

The answers to this question elicited a number of different concepts, such as: (i) *Effective use and integration of ICT*; (ii) *reporting satisfaction in relation to interaction; (iii) available, supplementary eTools and quality suppor*t; and (iv) *frequent and self-directed use of eTools*.

Effective use and integration of ICT

Respondents suggested that the most important indicator of eLearning success is the optimal use of educational technologies within the institution. In addition, it may be considered a success when its application in teaching-and-learning purposes helps to [P14]: "*save time and trouble to all who use it*", but not increasing the workload of students or lecturers**.** Furthermore it is only when lecturers are able to employ ICTs to enable a [P19] "*richer learning environment";* and they [the lecturers] are able *"to integrate ICT effectively into their teaching activities"*.

Reporting satisfaction in relation to institutional objectives

A respondent expressed the view that eLearning success can be measured when they (lecturers) are able [P28]: "*to meet institutional objectives through the use* [and application] *of e-learning"*, especially the available eTools. Directly related to this factor of success, the view of necessary reporting related to the use and functionality of the eLearning system was important.

[P17]: "If *students use the system…and report comfort in using it*".

Available, supplementary eTools and quality support

The optimal use of ICTs, aligned with available and easily adaptable eTools were viewed as the most tangible measurements of eLearning success within an institution. In addition, these tangible measurements had to be closely associated with effective eLearning support for users. A respondent indicated that eLearning success in an institution is when one is able to support and motivate academics to adopt innovative teaching methodologies; and moreover [P6]: "*convince them that eLearning is not*

about replacing what they do, but rather complementing" their existing teaching and communication methodologies.

Support was further expressed in terms of the need for a high quality support system that would create confidence amongst users and in turn make an impression on prospective users to adopt eLearning methodologies. Furthermore a high quality support system would lead to an increasing number of lecturers who voluntarily adopt eLearning practices – which could also be used as a measurement of eLearning success. Equally important, quality aspects were related to the importance of constructive feedback from users [students and lecturers].

Frequent and self-directed use of eTools

The frequent use of eTools by both students and lecturers was seen by respondents as a measurement of eLearning success within an institution. They argued that success can be shown when users [academics] make eLearning their *[P23]: "first choice platform for delivering module content and assessment across departments"*. Following, frequent use should lead to the achievement of self-directed learning when *[P16]: "students show familiarity with the e-learning portal by way of creating their own comments, requests, discussion groups..."*.

6.3.2.3 *What are the factors that would influence eLearning success?*

Answering this question, the respondents came up with an assortment of factors, which they considered as impacting on eLearning success within an organisation: (i) *Basic ICT user training impact eLearning adoption*; (ii) *negative perceptions of key individuals impact overall implementation*; (iii) *reliable user-friendly educational technologies*; (iv) *eLearning exerts pressure on inadequate available resources; (v) clearly defined aims and objectives*; and (vi) *efficient and competent eLearning facilitators*.

Basic ICT user training impact eLearning adoption

Respondents expressed the view that many students [and lecturers] needed training in the use of basic ICT applications, including the simple functionality of accessing the eLearning system with dedicated passwords. Hence, human errors (by lecturers and students) and unreliable, intermittent internet connectivity hinders eLearning adoption. Furthermore respondents indicated that leaders throughout the

institution are jointly responsible for the coordination of the availability and accessibility of appropriate training, incentives, resources and infrastructure to ensure eLearning success. Thus, *[P25]: "Top management support, buy-in from lecturers, heads of departments and deans, as well as [the need for] rewards and recognition of teaching in general",* were some of the factors that could influence the success of eLearning.

Negative perceptions of key individuals impact overall implementation

It was mentioned by respondents that a negative perception of eLearning by key individuals in the institution [those in senior positions who may influence the adoption of eLearning practices], could probably have a destructive effect, by and large on the successful implementation of eLearning at UWC. Hence, the importance of marketing and specifically an eLearning marketing strategy was mentioned as a significant factor which would ensure that the users are knowledgeable of the benefits of eLearning.

Reliable user-friendly educational technologies

In addition to the abovementioned factors, respondents emphasised eLearning success in terms of reliable, user-friendly educational technologies. eTools which work properly and easily would motivate lecturers to adopt eLearning to enhance their current teaching-and-learning practices.

[P31]: "*Students can all access e-learning resources and find [them] at least as useful and easy to work with as normal print resources... Lecturers can all easily access and use e-learning for compiling learning resources and for giving learning support to students"*.

eLearning exerts pressure on inadequate available resources

Respondents complained about the large number of students who require access to the eLearning facilities; and since eLearning was becoming so popular, it actually presents more pressure on the already inadequate available resources of the institution.

This is indicated by one of the respondents who maintained that [P9]: *"…students also detest working in cramped noisy conditions in labs, such as the Arts writing Centre"*. On this note, a respondent gave an example of a situation where 800 students needed to make use of 60 computers. Another respondent indicated that this challenge of overcrowding also leads to more frustration as large numbers of students

try to access the eLearning platform and that [P11]: "… *innumerable [amount of] students report being kicked off the system mid-stream"*.

Following, respondents emphasised the need for the institution to commit to a more broad-minded investment in resources to support the adoption and application of educational technologies. Furthermore, this was related to the establishment of more conducive learning environments with [P2]: "…*more PCs for students, and more reliable machines…"* – which in turn would motivate students to eventually prefer blended eLearning approaches.

Clearly defined aims and objectives

A need was expressed to have clearly defined aims and objectives of eLearning implementation strategies in place, in order for the institutional community to be aware of the eLearning facilities and its benefits. *[P22]: "Users must have a clear understanding of what is expected when using the LMS. As I see it, e-learning success is an improvement in student understanding of Exit-Level Outcomes and an ability of students to utilise and gain from e-learning in a sustaining way"*.

Efficient and competent eLearning facilitators

A need was expressed for *[P15]: "…[a] strong support system for users"* – that is eLearning facilitators on standby, so as to assist lecturers should they come across any challenges; and moreover "…*excellent support that should keep the client willing to stay the course*". Hence, respondents emphasised the need for efficient eLearning facilitators as a vital part of the eLearning strategy and which could impact the institution's aim of attaining successful eLearning implementation.

Following, a respondent expressed the view that [P28]: "*having good course facilitators who will ensure that e-learners do not feel isolated and frustrated"* is a factor that would impact eLearning success. Furthermore these competent and efficient eLearning facilitators should be able to familiarise students with the eTools in order for them to understand the benefits thereof; and eventually choose eLearning as a preferred mode of instruction.

6.4 Summary: The integration of several factors to 'measure success'

A distinctive trend became evident from various respondents, namely, that the success of eLearning within an institution involves a number of factors. These factors include amongst others, the attitude of users to adopt eLearning methodologies as well as the need for a sound support structure. In addition respondents claimed that eLearning success can be measured by the quantity of eLearning users as a percentage of the overall institutional community; the number of online courses; the number of active eLearning users; and the amount and frequency of positive feedback from the users.

Furthermore the institution's capacity to provide a robust, stable eLearning platform; the necessary functionalities and appropriate support; and the benchmarking and application of eTools for further research are all substantial measurements of the successful implementation of eLearning success within the institution.

The open questions used in the first data-collection process, December 2007, constituted an exercise that enabled the researcher to ascertain the extent to which the university population (institutional leaders, eLearning support staff and eLearning experts and consultants at other HEIs in South Africa) understood the concept of eLearning success. The factors that determine eLearning success that became evident from the responses of the participants are summarised in Table 6.1 below:

Table 6.1: Factors of eLearning success mentioned by participants, Dec.2007

Factor	Corresponding literature
Lecturers and students make use of and interact with eTools	Murgante *et al.* (2011)
Effective use of eTools to promote learning	Stoltenkamp *et al*. (2011)
Exposure of large numbers of students to the learning situation	Michaelsen *et al*. (2002)
Integration of eLearning into teaching-and-learning practices	Bonk & Graham (2006)
Familiarising and influencing resistant academics	Nordkvelle (2006)
Access to new student populations and increasing	Fresen (2008)

throughput	
Team work, collaboration and coordination of tasks	Sharpe, Beetham & McGill (2009)
Effective use and integration of ICT	Nichols (2008)
Reporting satisfaction in relation to institutional objectives	Newton (2003)
Frequent and self-directed use of eTools	Sharpe, Beetham & McGill (2009)
Basic ICT user training impact eLearning adoption	Selim (2007)
Available, supplementary eTools and quality support	Selim (2007)
Negative perceptions of key individuals impact overall implementation	Newton (2003)
Reliable user-friendly educational technologies	Surry & Ely (2002)
eLearning exerts pressure on inadequate available resources	Sharpe, Beetham & McGill (2009)
Clearly defined aims and objectives	Surry & Ely (2002)
Efficient and competent eLearning facilitators	Nichols (2008)

6.5 Determining factors of 'eLearning success': Data presentation and analysis of Interviews in 2008

During the second stage of the second phase of the case study carried out in June-July 2008, the first set of interviews was carried out, in an attempt to establish: (i) The extent to which identified users of the eLearning facility within the institution had adopted and successfully applied the various applications within their domain; and (ii) the factors that impacted on the success (or lack of success) of eLearning, according to them. This stage entailed face-to-face interviews with different stake-holder groups in the institution, namely: institutional leaders, academics, eLearning support staff, IT support staff and eLearning system developers.

Due to the resemblance of some of the responses in this exercise with those of the preceding data-collecting processes, the researcher had concretised the various concepts and notions from the university population – to the extent that, at this stage, the various responses could be aligned to themes. Hence, the

findings for this phase were arranged into themes; and certain trends began to emerge, as the interviews proceeded.

Distance learning and computer-assisted instruction are the two, traditional modes of eLearning. Distance learning enables the delivery of instruction to isolated geographical settings from a focal point; whereas computer-assisted instruction enables the delivery of digital media components through computer technology. Hence, eLearning assimilates both these modes, as the Internet grows to be the integrating technology (Ruiz *et al*., 2006:207; Singh and Padha, 2011:94; Keller, 2008).

eLearning has become an important concept in recent times, and its utilisation in information dissemination and teaching-and-learning scenarios has added more value than ever before (Herden, Undated). However, despite educators' different viewpoints on the role of technology, they all face various obstacles in adopting novice teaching methodologies. Therefore the change from traditional to ePedagogy methods involves two key components of educational technologies and paradigm shifts (Nawaz, Khan and Miankheil, 2011).

The implementation of the eLearning strategy, since its inception in 2004, has been perceived in different ways by various staff members within the institution. This stage of the research will endeavour to elicit the different views from the population of institutional leaders [Rector, Vice-Rector, Deans, and the Institutional Planner], academic staff [lecturers], ICS Management, Human-Resources Executive and Management, Heads of Departments, eLearning support staff and IT back-end support staff.

In the structured interview, the following main questions were posed, as in the email survey:

- What do you think is meant by eLearning success?
- When will you know that your organization has achieved eLearning success?
- What are the factors that will influence success?

Furthermore, the development of an interview schedule was structured to serve as a guide during the key-stakeholder interviews. The interview schedule is a collation of a 'suite of questions' targeting and probing a specific sample of participants, for the retrieval of rich qualitative data in a natural

conversational way. [Refer to Appendix B: Interview schedule – Guiding questions to determine eLearning Success].

From the interviews conducted with the various stake-holder groups (39 respondents), a number of themes that will be discussed in the following sections were identified as impacting on the success of the implementation of the eLearning strategy within the UWC community: *time constraints for lecturers and eLearning support team*; *dedicated back-end development support*; *lack of resources*; *alignment of the eLearning strategy*; *attitudes and perceptions at a given time*; *availability of an appropriate infrastructure; eLearning support; marketing eLearning concepts and support; leadership commitment and communication; aligned support approaches and efforts.*

Each of the 39 responses (herein represented by a 'P' for each participant) - was fully analysed and categorised, according to certain key themes.

6.5.1 Time constraints for lecturers and eLearning support team

Respondents indicated that time constraints hampered the effective familiarisation and implementation of eTools. One respondent further asserted that she would rather continue with traditional methodologies than make time to navigate eTools – as she was inundated with a heavy workload.

[P32]: "…*so I would presume that you have to have an enormous amount of time to sit and play and learn, and so forth. That you need to serious amounts of lead [sic] and time to get to know the system, which I didn't have…*".

[P30]: "*I've been trying with a great deal with antipathy. I mean, I would rather sit down today and do anything on my board over there – that is all outstanding deadlines, than sit and open that e-learning website*".

These findings confirm that baseline technological and human resource fundamentals are vital for the support of eLearning (Jamlan, 2004); and educators have to make the time to be trained and familiarised with new online facilitation roles which they are not comfortable with.

The eLearning support team also expressed the issue of time constraints, especially related to the timely efforts of booking venues for training purposes through the ICS service desk.

[P19]: "*We need to have professionalism – whereby if the venue is booked, it may be clear a day before – and there must be confirmations of the venue booking, even if you do it on a weekly basis, so that one will know if I don't have a space for tomorrow… and they will make another arrangement*".

6.5.2 Dedicated back-end development and IT support

The lack of suitable human capacity to implement eLearning effectively; especially dedicated back-end support staff for the maintenance and integration of the eLearning system with other institutional systems - was a great concern for respondents (eLearning support team).

[P16]: "*We do not have a dedicated support team with regard to the technological issues. It has a bad impact on the system, as well as the team. Take for example the issue of bugs. We report a bug; it is dealt with [by] a number of people and with no solution to the problem. There is no immediate person or individual that is responsible for getting rid of bugs. Also another IT issue is the fact that there is no integration between system (UWC database) with faculty data bases and with e-learning KNG data bases. It makes it hard for both teachers and students to log on, and when they approach us, they are frustrated by the delays that follow*".

In addition the lack of clear back-end maintenance and support processes has caused further embarrassment for eLearning facilitators, especially during staff training sessions, when new online modules/eTools would 'pop-up' during the training sessions without the trainers and facilitators having been given any prior notice.

[P3]: "*In my experience, I don't think…the system is designed according to instructional design principles…when we are training, new modules pop-up and you are forced to improvise…no proper procedures by developers like testing…*".

Respondents stated that a lack of trust has hindered effective eLearning implementation. In addition, there was a lack of support; especially online tutor support to assist with technological issues and the

application of ePedagogy. Hence, there was an onslaught of criticism by respondents related to inefficient back-end support of IT services; especially for the eLearning platform.

This is in line with the statement of Kotter and Schlesinger (2008:133), who rightly stated that the resistance of users can be due to a "*lack of trust*", and the perception that getting on board will "*cost them more*" than maintaining the status quo.

6.5.3 Institutional commitment to invest in resources

Ruiz and others (2006:276) and Bates (2012) claim that there is an increasing usage of educational technologies by educators in HEIs, as well as an increasing number of available eLearning tools; however no dramatic resultant application of ePedagogy.

Financial and human resources are fundamental for any institution to operate optimally and achieve its objectives. However, "*surprisingly many organisations fail to bring the right people with the right expertise together, to ensure that the blended learning truly focuses on the participant and his or her performance improvement*" (Brodsky, 2007:2; Singh and Reed, 2001).

Respondents expressed the view that the institution was not sufficiently resourced in terms of both human capacity and expertise in order to successfully implement the eLearning strategy. In addition, respondents also indicated that there was a need for more eLearning training and facilitation in order for lecturers to be able to teach online.

[P21]: "*So for me, I think everybody can do it (teach online)… to answer your question, but I think the intervention from getting people mobilised to do it and to train people to do, it will leverage that intervention appropriately*".

Furthermore respondents agreed that there was a lack of necessary eTools and thus the institution was not adequately prepared for the effective implementation of eLearning. Moreover, it is vital that the development of the necessary human capacity and expertise within all departments be fast tracked. However, scarce resources should also be utilised more efficiently.

6.5.4 Alignment and integration of the eLearning strategy

Diverse views were expressed by respondents from various segments of the university. Respondents confessed that they were aware of the institutional eLearning strategy; however they had not endeavoured its implementation.

[[P18]: "*The formulation of the strategy on e-learning was hindered by the inadequate understandings of the capabilities and resources available to the institution...Leadership aspirations, institutional visions and missions should be understood before strategies can be formulated, as these should be aligned to the aspirations, visions and missions of the institution*…".

Respondents concurred that it was vital that the teaching-and-learning strategy be aligned to the institutional eLearning strategy. Moreover, a respondent indicated that if eLearning becomes the norm of teaching-and-learning practices, then the eLearning strategy would organically develop.

[P25]: "*That is why I'm so interested that a Director: Teaching and Learning will only be responsible for the teaching and learning approach by the end of next year…so that we can develop a feasibility scan of this university, initiate projects, [so] that get people involved in teaching and learning; and e-learning as a part of that and fundamentally then understand that our e-learning strategy will come out of that, so that it grows organically*".

This evidence supports the fact that "*it has long been recognised that passive strategies are ineffective at getting evidence into practice…*[and]*…successful implementation depends on changing behaviour – often of a wide range of people…requires a scientific understanding of the behaviours that need to change, the factors maintaining current behaviour and barriers…and the expertise to develop strategies to achieve change based on this understanding*" (Craig *et al.*, 2008:12-13).

Furthermore, this evidence supports the work of Morrison (2003:112), that an eLearning strategy provides a vision and the scope for guiding the implementation plan. It is important that eLearning be integrated into the broader teaching-and-learning strategy of the institution; and moreover, as Morrison (2003:113) states, that it would enable the institution to do things that it could not do before.

[P29]: "*So e-learning ought not to become an end in itself… because then you can valorize what they know – as opposed to getting them to know what they need to know…The nature of our literacies has change fundamentally. It's e-based, right. So how do you understand the connection between that; and then move towards text-based literacies – and whether that is important – because it is important at this university, at a university level*".

6.5.5 Different attitudes and perceptions at a particular time

Respondents embrace different perceptions about eLearning practices at particular times.

[P19]: "*So I must say, I think 80% of my staff have been and most of them are using e-learning. So that's the value, because it really speaks to our own philosophical underpinnings. It speaks to self-directedness; it inculcates in a student; the student takes ownership of; and the fact that students can learn at their own time, at their own pace and they don't have to be physically in front of a lecturer … so that's where e-learning now bridges the gap between the theory and the clinical*".

At the same time, respondents expressed the importance of attitudinal change as vital for committed eLearning adoption.

[P10]: "*We have people here, as would be expected…with very firm views and I don't think that is really related to fear. Their firm views are related to their firm views*".

However, respondents also still firmly believe in traditional teaching methodologies and seemed to express fear of utilising educational technologies. Even, a conservative head of department might hinder progress.

[P14]: "*I know my subject very well. I don't generally prepare very much for class. So I walk into class and I can teach for an hour and that's it. You see, I haven't got days to spend here marking everybody's hundred word summary. With this online Master's in child and family studies course, I did have assistance from another lecturer...and she's obviously of a different generation*".

In addition, a respondent indicated that his inherent belief of traditional teaching methodologies may impede the adoption of eLearning practices.

[P27]: "*My problem with that is that I'm fundamentally didactically inclined. I love studying in front of a class, I love the sound of my own voice, I think I have something to say, and I say it. Most of the time, I only say it, right. But I'm also very aware of learning theory. I'm also very aware of the limitations in the didactic approach. And so when I use e-learning methodologies, it fundamentally challenges my own understanding of, my own identity, as a lecturer. And when it does this – that is where for me the problem starts. And so, when the technology falters in my mind's eye, I give up more easily than what I should, because I can fall back on what I know best, I think I do best*…".

This is in line with documented research that highlights the fact that considerable change and re-organisation in the institution brought about by eLearning can be viewed, as Kotter and Schelesinger put it (2008:130), as a "*disturbance of the status quo, a threat to people's vested interests in their jobs, and an upset to the established way of doing things*".

Furthermore, a Dean of a faculty, expressed concern as her staff members had requested innovative teaching and assessment methodologies - such as eLearning - should be removed from the faculty teaching-and-learning plans at that time.

[P8]: "*Yes, yes! But the objection was to having online teaching identified as part of a lecturer's performance bonus…I can show you, here it is in a document: Please append plans for presentation on modules, including evaluation by students, (obviously tutorial programs) if any, innovative teaching methods [are] to be used, e.g. e-learning… So, you see, eLearning was taken out*".

This is in line with documented research that, the wave of technological change has caught many academics "*off-guard*", resulting in "*academic moral panic*", whose main features are a "…*series of strongly bounded divides: between a new generation and all previous generations; between the technically adept, and those who are not; and between learners and teachers*". Attitudinal change amongst academics of diverse age groups is, therefore necessary in order to change perceptions (Bennett *et al.,* 2008:782; Koederitz, Macon, Whitehead, and Louisiana State, 1991).

Equally important, respondents (eLearning trainers and facilitators at that time), voiced concern regarding the unheeded responsiveness of the back-end IT team to resolve and prioritise eLearning system

problems. It is, therefore, imperative that IT leadership realises the importance of effective institutional implementation of educational technologies.

6.5.6 Availability of sound infrastructure

Respondents identified a need for functional resources and more computer lab facilities in order for the support team to conduct more staff training sessions. A frequent tendency of discontent related to bandwidth issues emerged. This was associated with complaints about the irregular, unreliable email services. Moreover, these technical challenges were associated with the eLearning support team services; and hence had an impact on the use of eLearning methodologies for lecturers.

[P12]: "*My core needs are a functioning computer...It's taken a long time for me to get that…The second thing I would like is I would like a functioning internet system and a GroupWise that works, which it didn't yesterday, at all, so I actually had to go home. And there are a lot of things that are for me much more important than an e-learning strategy".*

Davies (2003) and Powell and Davies (2002) cited in Harris, Hall, Muirhead, McAteer, Schmoller and Thorpe (2004:1) - note that it is imperative for a "*strong infrastructure to be in place, with targets for students, and staff access to Internet, and enabled computers being met in most colleges*".

In addition, respondents indicated that the institutional challenge of appropriate, reliable infrastructure should be earnestly addressed; as this could further hinder the progress of some students, according to respondents – who needed much more eLearning training to increase their competence levels.

This evidence is in contrast to Bennett and others (2008:776) who disagree that some students lacked the competence of utilising educational technologies and claim that "… *young people are said to have been immersed in technology all their lives, imbuing them with sophisticated technical skills and learning preferences for which traditional education is unprepared*". This inconsistency can most likely be related to the fact that many UWC students come from poor disadvantaged backgrounds and do not have access to ICTs.

Hence, it is vital that the institution attains the appropriate, sound infrastructure - so that those disadvantaged students are not further impeded by a lack of access to educational technologies. Equally important, the institution should acquire the appropriate infrastructure in order to cater for a new kind of student with technological skills. This evidence confirms the claim "*that there is a distinctive new generation of students in possession of sophisticated technological skills and with learning preferences for which education is not equipped to support has recently received much attention''* (Bennett *et al.,* 2008:783; Leung, Undated:1; Ashraf, 2009:347).

6.5.7 Availability of continuous, reliable eLearning infrastructure

Respondents indicated that the overall support services delivered by the eLearning team was adequate; although respondents expressed qualms about the lack of sufficient support – specifically online tutor/facilitator support who should be continuously be on standby to assist at any given time.

[P15]: "*We will need resources, such as computers and staff…from my own experience we have so much students that we are dealing with… in some cases we find classes that are overcrowded...so it makes it impossible for us to provide effective trainin*g".

In addition, the need for sufficient support was also related to the need for more staff to be able to support the integrated front-end and back-end support requests. Surprisingly, respondents requested the development of communication tools to facilitate efficient support for students and lecturers – not acknowledging that there were already various modes of delivery in place to support all users (via email, discussion forums and blogs).

Equally important, respondents indicated that the institutional network connectivity challenges has made them lose confidence; and thus expressed a negative attitude to eLearning practices and support efforts.

This evidence is in line with the "*idea that a new generation of students is entering the education system [and] has excited recent attention among educators and education commentators*" (Bennett, *et al.,* 2008:775; Aprender, 2011). However, there are many challenges that HEIs have to contend with and the

practicality of eLearning practices to address these problems is debatable. Hence eLearning departments often have to compete for institutional resources, specifically the urgent need for online facilitators.

6.5.8 Marketing eLearning concepts and support

Respondents, who were supportive of eLearning initiatives, asserted that there was a need for aggressive marketing of eLearning approaches, efforts and support through institutional media. Resistance to eLearning could be mitigated by effective championing and communication strategies (Broadbent, 2003:3; Stoltenkamp, Kies and Njenga, 2007). Broadbent (2003:6) further argues that one should bear in mind the previous failed experiences by users, especially those related to the implementation of technology.

Respondents from the instructional design team (eLearning support) stated that many students and lecturers did not have a holistic view of the benefits of the eLearning facilities. In addition, lecturer respondents further indicated that there was a lack of commitment by leaders to market eLearning initiatives.

[P33]: "*Institutional leaders should be aligned and prepared to adopt an organisational culture that helps to build staff confidence through more publicity on the success of e-learning, through conducting seminars to highlight real achievements and successes*".

6.5.9 Leadership commitment and communication

Leadership and management are key eLearning implementation factors. Within the higher education culture, there are various players concerned in leadership and the processes which influence their engagements (Gosling, 2009). While the need for effective leaders is generally recognised, there is no assurance about specific leadership activities and its relation to positive outcomes (Bush, 2007). Furthermore, in terms of effective eLearning implementation, higher education institutions are dependent on the establishment of necessary, appropriate structures established by the institutional leaders in order to increase the adoption of eLearning (Mapuva, 2009:104).

Respondents in the leadership group [vice-rectors, deans, executive directors and institutional planners] uttered dissatisfaction at the long-drawn-out pace of eLearning implementation, and especially by those who are responsible for communicating the eLearning strategic plan to lecturers within their respective departments.

In addition, respondents in the leadership group also expressed the lack of commitment by some to implement institutional policy, especially related to the benefits of eLearning for the student population. Moreover, the establishment of an eLearning unit was seen as a good idea; however the lack of institutional support for the newly appointed manager was viewed as a stumbling block to the training and marketing efforts of ePedagogy.

These results are in line with those of Senge (1990, cited in Jones and O'Shea, 2004: 384) who argued that all members of staff should participate in the change process, and it should not merely be top management '*driving top-down change*'. Based on Senge's contributions, a study drawing on a sample of 161 university staff found that they had assumed that strategy would be filtered down hierarchically. This study further revealed a collapse in communication between leaders and staff, resulting in staff feeling powerless and seeing themselves as the victims of change.

[P37]: "When *you speak about leadership, I think what is often lacking at this university… from the leadership perspective, is to develop a bottom-up approach cohered with a co-ordinating and leadership approach. Often the leadership pronounces at the top, and then expects systemically downwards for people to kick in and connect with what the vision that it works. I think that is incorrect...You need to identify in each faculty four or five e-learning projects, and do those projects, and learn from those projects, and have those projects develop a conversation in a faculty like education. And so there's a bottom-up approach from leadership up top that stimulates and drives*…".

Furthermore, respondents in the leadership group also expressed the need for innovative teaching and learning methodologies; and regular upgrades of infrastructure and resources. Equally important, there was an agreement that the eLearning strategic plan is implemented within international benchmarks and trends.

6.5.10 Aligned support approaches and efforts

The various eLearning support staff interviewed indicated the lack of alignment and management of support processes between the developers of the LMS (Free Software Innovation Unit) and the ICS department (technical support), which has a direct impact on front-end support services of the eLearning team.

[P35]: "*You can talk for years... it seems that it is going into a black hole. It is documented, you tell the people, this is the problem and nothing is done. In 2005 I attended a workshop with the eLearning Manager at ICS…where we highlighted the problems there like lack of labs, IT infrastructure and the fact that it was not working. In that workshop I felt like even though you speak, you are not taken seriously. And I think it is because the people that I was speaking to, don't understand what it is that we are doing. They don't understand what the dynamics are of an e-learning support structure:[the] e-learning support unit. So, it is very difficult for them I suppose to see how they must come to the party*".

The current positive relationship between the instructional design team and the ICS service management team (lab maintenance and support) ensures the efficiency of lab bookings for eLearning training sessions.

6.5.11 Summary of factors according to participants

Given the various challenges that eLearning and its adoption by various departments in the institution have encountered, there is a need to adopt persistent marketing strategies to ensure that the campus community and collaborative partners are aware of the benefits of utilising educational technologies for communication and teaching-and-learning purposes. Falcão and Soeiro (2007:3) assert that the "*...use of new multimedia technologies and the internet [is] to improve the quality of learning by facilitating access to resources and services, as well as remote exchanges and collaboration*".

Moreover, there is a need to market eLearning as practices that would enhance and simplify the teaching-and-learning process; rather than replace traditional face-to-face methodologies. eLearning has simplified the teaching-and-learning process because students can now *"...use eLearning to catch up with missed lectures, contact the lecturer with queries, work collaboratively with peers outside of lesson time, and*

submit work on time" (Golden *et al*., 2006:2). Furthermore, "*students do not see eLearning as replacing traditional instructor-led training, but as a complement to it*"; forming part of a blended learning strategy (Ruiz *et al*., 2006:4; Nizami, 2011; Trukhacheva, Tchernysheva and Krjaklina, 2011).

A co-ordinated approach to eLearning support should be adopted by the necessary stakeholders across the university. Cooperative leaders should also ensure that the implementation of the eLearning strategy and the application of ePedagogy eventually succeed within the institution. Knowledgeable support staff would ensure that the application of ePedagogy is attainable. Effective application that "*offer learners control over content, learning sequence, pace of learning, time, and often media – allowing them to tailor their experiences to meet their personal learning objectives"* (Ruiz *et al*., 2006:207; Mushin, 2008; Jethro, Grace and Thomas, 2012; Wiyono, Pribadi and Permana, 2011**:**11). However, the availability of robust, reliable resources has an impact on the application of ePedagogy.

The questions used in the second stage of the second phase of the case study carried out in June-July 2008 constituted an exercise that enabled the researcher to ascertain the extent to which the university population of educators, leadership and support staff understood the concept of eLearning. The factors that determine eLearning success that became evident from the responses of the participants are summarised in Table 6.2 below:

Table 6.2: Factors of eLearning success mentioned by university participants (June/July, 2008)

Factor	Corresponding literature
Time constraints for lecturers and eLearning support team	Macdonald, Starr, Schooley, Yee, Klimowski and Turner (2001) Jamlan, 2004
Dedicated back-end development and IT support	Kotter and Schlesinger (2008)
Institutional commitment to invest in resources	Ruiz *et al*. (2006) Bates (2012) Brodsky (2007) Singh and Reed (2001)
Alignment and integration of the eLearning strategy	Craig *et al*., 2008: 12-13) Morrison (2003)

Different attitudes and perceptions at a particular time	Kotter and Schelesinger (2008) Bennett *et al.*, (2008) Koederitz, Macon, Whitehead, and Louisiana State (1991)
Availability of sound infrastructure	Bennett and others (2008) Ashraf (2009) Harris, Hall, Muirhead, McAteer, Schmoller and Thorpe (2004)
Availability of continuous, reliable eLearning infrastructure	Bennett, *et al*. (2008) Aprender (2011)
Marketing eLearning concepts and support	Broadbent (2003) Stoltenkamp, Kies and Njenga (2007)
Leadership commitment and communication	Gosling (2009) Bush (2007) Mapuva (2009)
Aligned support approaches and efforts	Sharpe, Beetham & McGill (2009)

Based on the above data collection and retrieval processes – the document analysis and the data presentation and analysis of both the email survey and the interviews – the original *Online Creation model* (Chapter 5) was redeveloped to accommodate the results of the qualitative study. Hence, a revised *Inclusive ePegagogy model* is presented and discussed in the following section.

6.6 An inclusive ePedagogy model

The reviewed literature emphasises the need for the deliberation of the underpinning pedagogy, or how '*good teaching-and-learning*' principles are fundamental for the successful adoption and implementation of eLearning. Most pedagogical principles of the traditional classroom pertain to eLearning; but these however have to be comprehensive, in order to adapt and be applicable to the quick technological changes (Govindasamy, 2002:288). There is a need for an all-inclusive approach, which would need to include valuable learning principles based on empirical research, and which are largely independent of the eLearning programme (Tergan and Schenkel, 2003: 604). Furthermore the inclusive approach should

ensure that any eLearning intervention integrates components of "*learning, performance, knowledge, service and change management*" (Bowles, 2005:1).

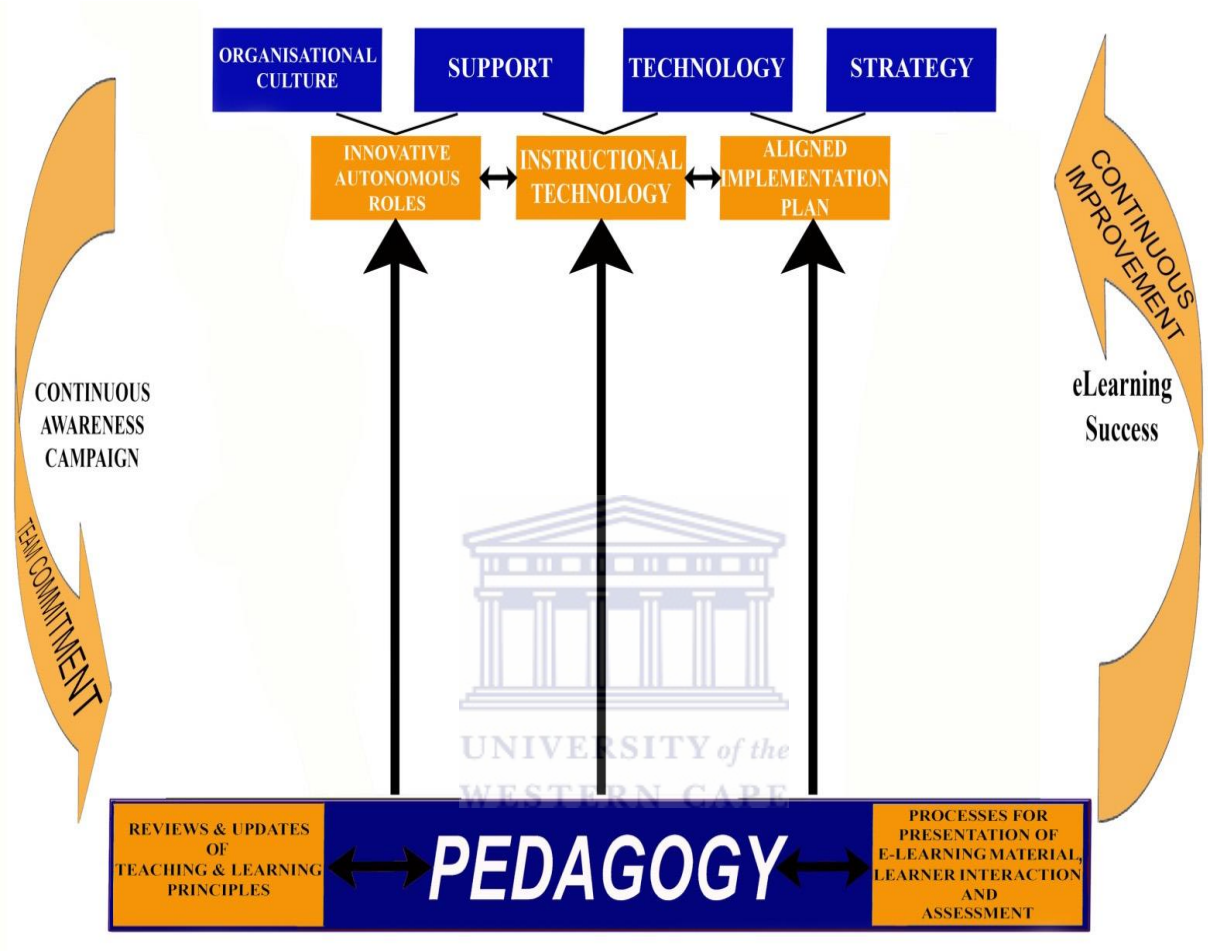


Figure 6.1 :An Inclusive ePedagogy model

An eLearning domain within a higher education institution should be indicative of an "all- inclusive" approach. A revised *Inclusive ePedagogy model* (Figure 6.1) highlights the dimensions of an eLearning domain, namely: *support, strategy, technology* and *organisational culture.* These are all influenced by e*Pedagogy*; and ultimately they will determine the successful implementation of eLearning. The elements of this model are explained in the subsequent text in more detail. More precisely, this section describes the relationships of underlying pedagogy; and: (i) Instructional technology and its impact on support services; (ii) the aligned strategy, processes and practices; (iii) the changing organisational culture; and (iv) the necessary ICT infrastructure to support users.

6.6.1 Underlying pedagogy

The implementation of eLearning is dependent on the exploration of the underlying pedagogy and how learning actually transpires within the online environment (Govindasamy, 2002:287). Furthermore, according to Alonso, Lopez, Manrique and Vines (2005:218), eLearning cannot occur with the lack of any pedagogical principles. This would lead to the continuation of eLearning in the form of a mere topical trend, but without the incorporation of the fundamental pedagogical principles (Bixler and Spotts, 2000, as cited in Govindasamy, 2002:289).

There remains a lack of any teaching and guiding principles for designing and developing sound pedagogical eLearning material (Alonso *et al*., 2005:218). Hence, eLearning material should be based on design principles and evaluated in relation to the pedagogical value (Boyle, 2002). Furthermore, the concept of "*second generation*" eLearning as a novice paradigm of deliberating about the online learning environment, is based on the core pedagogical exploration of innovative, softer-skills; rather than "*first generation*" methods which focus on the development of technical skills (Adams and Morgan, 2007).

6.6.2 Pedagogy: Instructional technology and its impact on support services

The underlying pedagogical principles, which are needed for successful implementation, are those theories that oversee the practice of good, quality teaching-and-learning; and in relation to eLearning, the practice of "*good teaching or instruction*" – also known as instructional technology (Govindasamy, 2002:289; Alonso *et al*., 2005:218). As deduced from the reviewed literature and the empirically collected data, instructional technology is the concern of the entire institution (leaders, deans, lecturers, executive directors, managers and students).

It has an impact on the design and development of institutional support services, quality management processes, infrastructural and technological decisions – and ultimately, the core business of the institution, teaching-and-learning, as well as research and community outreach. This would lead further to a higher educational environment which strives for a holistic eLearning activity.

6.6.3 Pedagogy and aligned strategy, processes and practices

This holistic eLearning activity should include successful online application, successful registration to a programme, as well as successful access (log-in) to a Learning Management System (LMS). Moreover, increasing access should be given to those who cannot access existing traditional learning opportunities. Hence, eLearning should attract attention from all the relevant stakeholders. The leaders of the institution and the staff need to be synergistically aligned, in order to develop strategies, processes and practices for the effective use of the emergent technologies. An eLearning and pedagogical innovation framework can provide a suitable platform for discourse around the development of an eLearning strategy for a higher education institution (Salmon, 2005).

Any lack of misalignment of the strategy - would inevitably lead to an environment ill-equipped to develop the necessary innovative roles for all the stakeholders (Nortar, Wilson and Montgomery, 2005:17). Furthermore, this alignment is in agreement with Mintzberg (1978), who then emphasised that universities require a dynamic interaction between both "*deliberate and emergent*" strategies. These would help with the management of change processes (Jones and O'Shea, 2004:384), which, in turn, would further lead to a changing organisational culture.

6.6.4 Pedagogy and the changing organisational culture

The traditional model of face-to-face teaching has not altered much, although eLearning tools are considerable. Even in this era characterised by pervasive ICT, educators still have to be clear about their teaching content, the needs of the students, and the methodologies that enable effective learning, regardless of geographical space (Nortar, Wilson and Montgomery, 2005:24). Institutional leaders and staff need to be strategically aligned, and to be able to influence and prepare for an organisational culture that would "*reflect the most successful model, i.e. a blended model, which includes: self-paced learning; synchronous e-learning; and face-to-face classroom instruction*" (Alonso, Lopez, Manrique and Vines, 2005:234).

There is a need for educators to be influenced to take a hands-on role in the improvement and application of eLearning tools in the teaching process, highlighted in the *Demand-driven Learning Model* by (Macdonald *et al*., 2001:19, as cited by Engelbrecht, 2003:42). However, Engelbrecht (2003) does not reflect on the inevitability of a changing organisational culture, whereby the leaders, lecturers and students could take on more pro-active, innovative eLearning roles.

Furthermore, institutional leaders and staff need to be strategically aligned and prepared, as well as being able to influence an organisational culture that should inevitably reflect communities of practice (COPs), which are replicated in the institution and which take place between collaborative partners outside the institution, regional and international. This leads to an institution that endeavours to embrace the concept of innovation pedagogy – rooted in "*customer-oriented and multi-field needs of working life; integrated applied research; development and entrepreneurship with education in a flexible way*". In addition, depicts an institution which emphasises resourceful learning and the external impact that the institution has on regional development and international relations (Kettunen, 2011). Moreover, as may be deduced from the reviewed literature and the empirically collected data, these inevitable innovative pedagogical changes are dependent on a sound institutional ICT infrastructure.

6.6.5 Pedagogy and ICT Infrastructure to support growing number of users

Higher Education eLearning environments are dependent on, and should focus – as highlighted in the *Demand-driven Model* (Macdonald *et al.*, 2001:19) – on the essential ICT infrastructure to support eLearning end-user requirements, namely:

- High quality, extensively researched content;
- Interactive, user-friendly e-learning courses;
- Teaching-and-learning resources, administrative and technical support services.

All components of the "*physical e-learning infrastructure should be reliable, robust, sufficient and integrated using defined standards*" (Marshall and Mitchell, 2007). It is important for institutions to benchmark their eLearning endeavours with national and international institutions. Hence, Marshall and

Mitchell (2007) developed the E-Learning Maturity Model (eMM) which institutions can make use of to assess and evaluate their "*capability to sustainably, develop, deploy and support*" eLearning.

Furthermore, it should be emphasised that the needs of the end-user can only be met if pedagogical adjustments are made to content and services (Engelbrecht, 2003:42). Hence, those responsible for providing the technical infrastructure need to realise that their support services impact the implementation of eLearning, and inevitably the teaching-and-learning aspects within the institution.

6.7 Reflective quantitative measures: Voluntary lecturer buy-in and student support

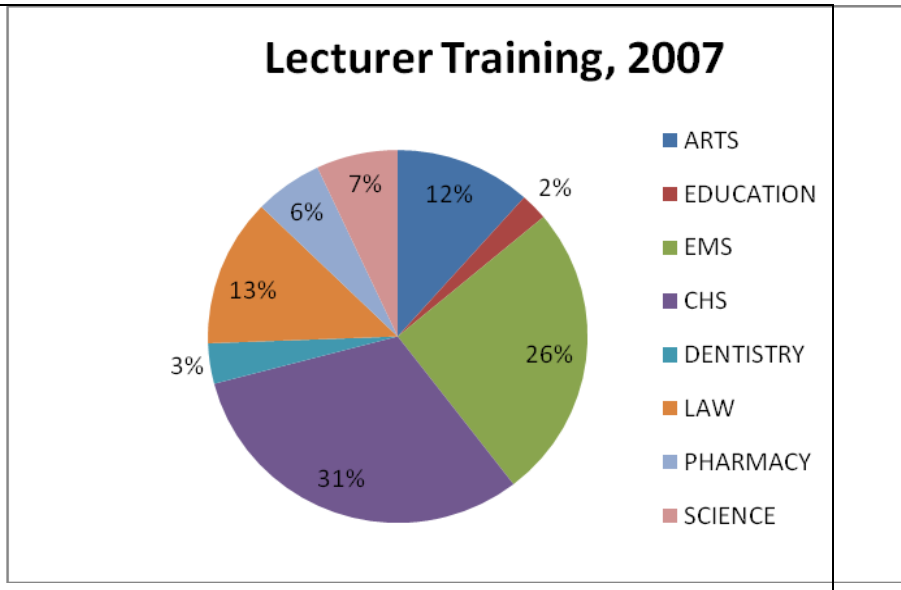
As discussed in the previous phase (phase 1), quantitative evidence was also gathered in this phase to illustrate the progressive non-coercive awareness campaign, and to support the qualitative evidence, as a of measure of success of an implementation approach at UWC.

6.7.1 Reflection on lecturer training, 2007

Table 6.3 reflects the number of staff members that attended eLearning face-to-face scheduled training sessions, and one-on-one office consultations in 2007. The figure (related pie-chart) is a graphical representation of the relative percentages of the number of staff who received training for that period.

Table 6.3: Lecturer training per faculty, January – December 2007

Faculty	Face-to-Face	One-on-One Consultations
ARTS		10
EDUCATION		2
EMS	5	17
LAW		11
DENTISTRY	2	1
CHS	18	9
SCIENCE	1	5
PHARMACY		5
PARTICIPATION TOTAL	**26**	**60**

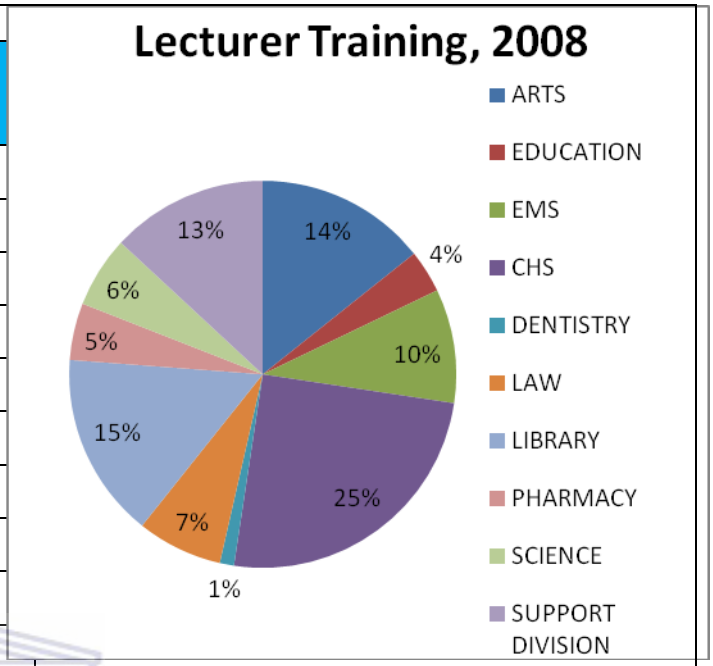


6.7.2 Reflection on lecturer training 2008

Table 6.4 reflects the number of staff members that attended eLearning face-to-face scheduled training sessions, and one-on-one office consultations in 2008. The figure (related pie-chart) is a graphical representation of the relative percentages of the number of staff who received training for that period.

Table 6.4: Lecturer training per faculty, January – December 2008

Faculty	Face-to-Face	One-on-One Consultations
ARTS		12
DENTISTRY		1
EMS		8
EDUCATION		3
LAW		6
CHS		21
SCIENCE		9
ICS	6	3
LIBRARY	13	
SCHOOL OF LIAISON	2	
PARTICIPATION TOTAL	**21**	**63**



During the period of January 2007 – December 2008, individual consultation sessions were continuously offered to lecturers who had attended face-to-face training, but still required further assistance; but were also unable to do so. Due to time constraints, they were unable to attend the face-to-face scheduled training sessions. The UWC staff members were trained in the core functionalities of the eLearning platform LMS; and they were advised on how to use eTools effectively.

Since June 2007, it has been observed that academic staff members preferred the individual one-on-one office consultations within their own office spaces. They were more receptive to learning, and were more willing to try new things within their familiar spaces, especially given that the new technology related to teaching-and-learning methodologies are daunting for some academics; and the fear of failure is powerful. Through training, support and consultation, the eLearning team strives to keep abreast of all the technological and teaching-and-learning changes in line with international best practices.

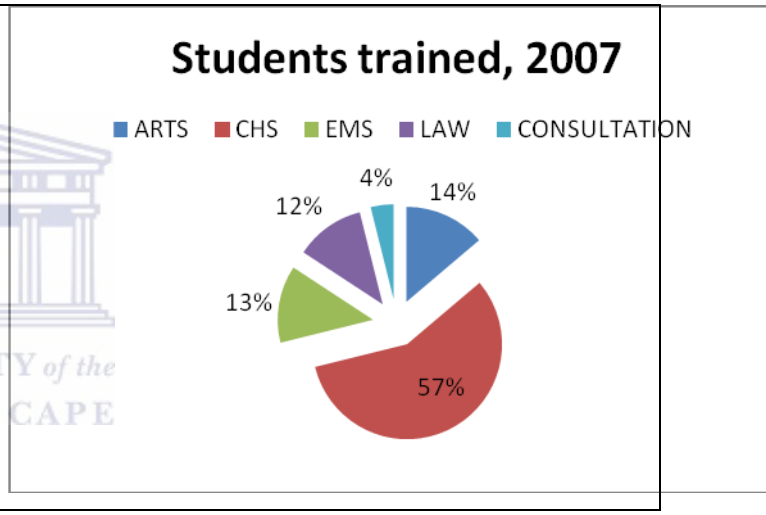
Hence, these skills are imparted to lecturers and students, to enable them to engage and communicate in online activities, such as: getting access to their learning material, engaging in discussion topics, and completing online assessment tasks.

Reflection on training student, January – December 2007

Table 6.5 below reflects the number of students who received eTools training for the period January to December 2007. The figure (related pie-chart) is a graphical representation of the relative percentages of the number of students who received training for that period.

Table 6.5: Student training, Jan - Dec 2007

Faculty	**Number per Faculty**
ARTS	555
CHS	2304
EMS	525
LAW	477
CONSULTATION	157
Total	**4018**

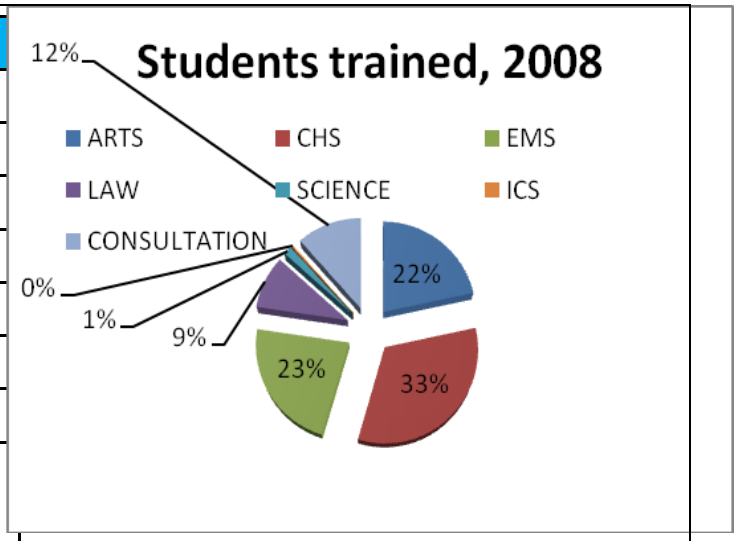


6.7.3 Reflection on student, January – December 2008

Table 6.6 reflects the number of students who received eTools training for the period January to December 2008. The figure (related pie-chart) is a graphical representation of the relative percentages of the number of students who received training for that period.

Table 6.6: Student training, Jan - Dec 2008

Faculty	Number per Faculty
ARTS	701
CHS	1065
EMS	735
LAW	299
SCIENCE	49
ICS	10
CONSULTATION	376
Total	**3235**



Requests for student training intensified with the increasing numbers, as reflected in the statistics above: notably within the Community and Health Science (CHS), Law and Arts Faculties. This is also indicative of increased lecturer buy-in and a paradigm shift with regard to attitudinal and organisation cultural changes towards the adoption of eLearning for teaching-and-learning purposes within these specific disciplines.

It should be highlighted that lecturers make requests for student training on a voluntary basis. As students became more familiar with the eTools, the number of student training requests began to decrease in 2008.

6.8 Summary: Pedagogical adjustments and continuous team commitment and improvement

Subsequent to the discussion in phase 1, and equally important, this phase (phase 2) of the development of a revised eLearning model emphasised that the needs of the end-user would not be met merely through any pedagogical adjustments of content and services. The model begins to depict an integrated holistic approach, that is needed for teaching-and-guiding principles, for the development of eLearning processes and policies in a higher education setting, and for the need for institutional leaders and staff to be aligned

with the issues of pedagogy on all the dimensions of an eLearning implementation plan, namely: technology, strategy, organisational culture and support.

This *Inclusive ePedagogy model* also demonstrates that higher education institutions should come to the realisation that successful eLearning implementation or 'eLearning success' can never be claimed, but should rather be perceived as a continuous ongoing process that requires reviewed and up-to-date improved pedagogical approaches whereby the learning material is presented to user-groups (institutional leaders, eLearning decision-makers, lecturers, students, tutors, eLearning support staff), and how learners should be assessed and interact. In this case, the lecturer and student are both referred to as 'learners'.

Hence, the lecturers themselves should be (mature) life-long learners who have embarked on a life-long eLearning journey.

Furthermore, the *Inclusive ePedagogy model* depicts an eLearning support team committed to an ongoing awareness campaign at UWC (deliberated in Phase 1 of the Case study), whilst the striving for the successful implementation of pedagogically sound eLearning initiatives remains essential and continuous. The different focus areas of the awareness campaign can be categorised as the establishment and maintenance of an integrated support structure, persistent communication, eLearning lunch-time seminars, annual eLearning colloquiums, continuous face-to-face scheduled training, and one-on-one office consultations sessions, departmental visits, and eLearning incentives – efforts that encourage and motivate academics to adopt eLearning practices on a voluntary basis, in a complex technological environment.

CHAPTER 7

UNIVERSITY OF THE WESTERN CAPE CASE STUDY PHASE 3

INDICATIONS OF A CHANGING ORGANISATIONAL CULTURE

September 2008 – October 2011

The development of an Integrated eLearning Model

7.1 Introduction

The previous chapter, reporting on phase 2 of the study, dealt with the development of a revised *Inclusive ePedagogy model.* This was based on the empirical data, as well as how this model would impact online course creation. Phase 3 of the case study, presented here, studied the period September 2008 to October 2011, and also how the eLearning model had developed beyond ePedagogy.

The aim of this chapter is to highlight the main developmental stages in the creation of a revised *Integrated eLearning model,* and how this has influenced organisational cultural change within the UWC for the period September 2008 to October 2011. A blend of methodologies and various theoretical considerations were employed during the creation of the integrated eLearning model in this chapter. The attitudinal changes among the respondents, for example, were determined by way of interviews and questionnaires.

This chapter thus responds to the following objective of the study: "*To develop an integrated eLearning model for use at the University of the Western Cape*".

7.2 The development of an integrated eLearning model: Methodology

Over time the eLearning model of Phase 2 of the case study (Figure 6.1) was further developed after more in-depth interviews and questionnaires that indicated additional important factors, which contribute to the successful implementation of eLearning. A final *Integrated eLearning model*, as shown in Figure 8.1, and discussed and interpreted in chapter 8, was developed. This was based on:

- The processes and empirical data discussed in phases 1 and 2 (Chapters 5 and 6);
- The literature review (Chapters 2 and 3; and woven into the case study, Chapters 5-7);
- The qualitative data retrieved from additional interviews and questionnaires during phase 3 (Chapter 7); and
- Supporting quantitative evidence retrieved from the actual case study: eLearning adoption at the University of the Western Cape (Chapter 7).

This phase of the case study has reflected on the eLearning adoption continuum at UWC (September 2008 – October 2011). Here, there is the evidence of a number of academics who have changed their teaching methodologies by supplementing face-to-face instruction with the use of various eTools (amongst others, discussion forums, blogs, rubrics, assignments, workgroups and podcasts); and on the other end (as stated in the first phase of the study) academics who are still appealing for the abandonment of the home-grown open-source learning management system, KEWL.

7.3 Interviews and questionnaire

The first round of the data collection of this phase, targeted at academics, was held in September 2008; and it consisted of a combination of face-to-face interviews and a questionnaire. It involved a total of 110 interview requests and questionnaire schedules, which were sent to different departments, purposively selected to represent an all-encompassing and inclusive sample. Sixteen (16) academics responded to the interview requests, and eight (8) preferred to complete the questionnaire online, representing an overall response rate of 21.8% [Refer to Appendix A: Lecturer Questionnaire, September 2008].

A second batch of interviews and questionnaire, targeted at both academics and students, was conducted during the period of September/October 2011. The process involved 106 interview requests to lecturers

purposively selected from across the seven faculties of the institution; and who had at that time of the research already employed eTools to supplement their teaching-and-learning practices. Thirty-four (34) lecturers responded to the interview requests, representing a response rate of 36% [Refer to Appendix C: Lecturer Questionnaire, Sept.- Oct. 2011].

Thereafter, the students of the respective lecturers, a sample of 560 students, were requested to complete the questionnaire [Refer to Appendix D: Student Questionnaire, Sept. – Oct. 2011]. However, from a practical point of view, the lecturers allowed the students, 15-20 minutes to complete the questionnaire during a specific lecture. Table 7.1 below reflects the number of 429 students who completed the questionnaire, representing a very high response rate of 72.61%. It should be noted that CHS is the largest faculty and has more lecturers within the faculty who have adopted eLearning practices; and it thus represents the largest percentage in Table 7.1 below (26.34%), followed by EMS (23.78%).

Table 7.1: The number of student respondents per faculty

Faculty	**No. of students**	**Percentage**
Community and Health Sciences (CHS)	113	26.34
Economic & Management Sciences (EMS)	102	23.78
Natural Sciences	80	18.65
Arts	59	13.75
Law	35	8.16
Education	29	6.76
Dentistry	11	2.56
Total	429	100

The cumulative interview process sought to establish the willingness of participants to adopt and encompass eTools and ePedagogy within their teaching and learning agendas. For the September 2008 interviews, the participants could choose from either a face-to-face interview, or the same interview

converted into an online survey. This was intended to suit the different needs, priorities and time constraints of the different participants. It was also intended to maximise participation, as well as to eliminate bias, especially in cases where the participants did not feel comfortable in the presence of the interviewer**.**

Following this, the September/October 2011 process involved a combination of face-to-face interviews for academics and a questionnaire for students. It should be highlighted that in 2008 not many academics had adopted eLearning practices within their disciplines, implying that not many students were exposed to the usage of eTools. Hence in this phase, students were not incorporated into the interview process. However, the September/October 2011 interview process included students, because by then there was an increasing number of academics who had adopted various eTools to complement their teaching practices; thereby exposing an increasing amount of students to eTools. Hence, this second interview process involved students to ascertain their level of familiarity, understanding and exposure to eTools within the institutional Learning Management System (LMS).

7.3.1 The data presentation and analysis: Interviews

This section presents the findings for both data-collection processes administered in September 2008 and September/October 2011. From the cumulative responses, a number of themes emerged:

- Awareness of the eLearning strategy and the inevitability of technological change
- Face-to-face versus blended approaches
- Training and support for ePedagogy and content design
- The key role of instructional designers
- Training and support for students
- eLearning courses supplement traditional teaching methods
- E-Learning and its impact on students' class attendance
- Effective planning linked to time constraints, resources and support
- The need for awareness of the value of online assessment tools
- Lecturers need to implement a hands-on role

- The extent to which variables of age, gender, social-background, experience and race impact the eLearning journey
- The need to be incentivised
- Infrastructure and the availability of resources

All these themes are discussed below in greater detail.

7.3.1.1 Awareness of the eLearning strategy and the inevitability of technological change

The results indicated an awareness of the institutional eLearning strategic document; however, there was a lack of engagement and implementation of the strategy. Despite the lack of engagement thereof, this did not deter individuals from pioneering with eLearning practices.

Table 7.2: Interview quotes on the awareness of the eLearning strategy

Reference	Participant quote
P1	"*I have not read it; but I know there are strategies.*"
P2	"*You are using the word strategy. I am aware that we have eLearning available and I am utilising it myself – to a limited extent.*"
P2	*"The e-learning strategy that was in existence looked theoretically promising, but the implementation has not been forthcoming. The environment determines what people learn and if e-learning and appropriate technology were available to the end-users, definitely they would utilise it."*

In addition, it was apparent that technological change was inevitable, and that individuals have to become a part of the change – given the dynamic nature of the new developments brought about by globalisation.

[P8]: " *We really have to be a part of it [the change] …I have not been hands-on with electronics and computers, but now I find myself experiencing what I learnt 15 years ago in theory – computer-assisted learning."*

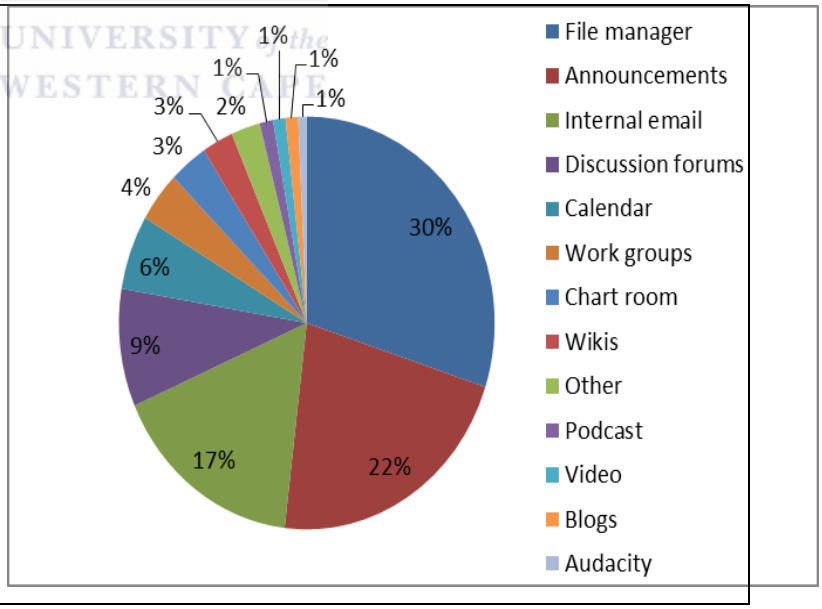
[P12] "Yes absolutely. This department is one of the first to be online. The use of e-teaching is important in a global perspective, which is in line with the university's global attributes."

A respondent [P23] further expressed that: *"eLearning should be mandatory for everyone".* These results corroborate the work of Middlehurst (2003:12), highlighted in Chapter 3, which stated that HEIs are compelled to embrace ICTs, in order to enable them to contribute to the information society; and with expectations of the successful ICT undertakings in "*transforming national and international economic and social environments".* Moreover, these results confirm the findings of Stoltenkamp and Okasuto (2009), as reflected in Chapter 3, highlighting the fact that South African HEIs too are being challenged to meet users' expectations of high-quality face-to-face contact integrated with online learning – in line with global trends.

Table 7.3 represents the student respondents who indicated an increasing usage of various eTools within the UWC eLearning platform, as their respective lecturers have now become a part of the inevitable technological changes within the institution [refer to Appendix E: Screenshots on popular eTools within LMS). The figure (related pie-chart) is a graphical representation of the relative percentages of the number of students who make use of various eTools within the institutional LMS.

Table 7.3: Usage of various eTools by student respondents, October 2011

eTools	Percentages
File manager	78.1
Announcements	56.9
Internal email	43.1
Discussion forums	24
Calendar	15.2
Work groups	10.3
Chat room	8.6
Wikis	7
Other	6.5
Podcast	3
Video	2.8
Blogs	2.8
Audacity	1.9
Total 429 student respondents	



These student results are in line with the work of Wong (2003), as reflected in Chapter 3, highlighting that as the rate of this inevitable change of educational technology continues, vital flexible teaching and

learning methodologies, which include asynchronous and synchronous tools, should subsequently be considered.

Despite the fact that there was acknowledgement that the use of technology in the classroom situation is inevitable; and that it reflects a positive development, reservations about its benefits were made. These were specifically related to access.

[P4]: "*Yes, I think technological change is inevitable. However, my one concern is not so much with its inevitability, but with its accessibility. Technology is inevitable; but the majority of people don't have access – not to the benefit of all*".

7.3.1.2 Face-to-face versus blended approaches of adoption

The adoption of eLearning practices has posed challenges for those who have an intrinsic belief in the traditional, face-to-face method of instruction.

[P2] "*The problem with the adoption of e-learning methodology by lecturers has been their inherent belief in the old methodology of information dissemination through conservative methods of talk-and-chalk.*"

One respondent argued on behalf of students, indicating that face-to-face instruction is more suited to part-time students, whose time is limited.

[P3]: "But we have to remember that some of our students still prefer written assignments; and they still have to rush off to jobs off campus".

The view was expressed that academics still preferred the traditional methodologies, specifically for postgraduate classes and particular disciplines. Another respondent indicated that he would first wait for evidence related to quality and effectiveness, before making the effort to adopt eLearning practices.

[P24] "*I prefer face-to-face for post grad students – to get the concepts…For the Sciences, it is ideal to use the [black] board."*

[P23]: "…if it improves the quality and effectiveness of our teaching and learning, then I will come on board."

It was further expressed that prior preparation for blended eLearning practices is time-consuming. This further corroborated the work of Kotter and Schelesinger (2008:133), as highlighted in Chapter 5: that some academics perceive engaging in eLearning practices as a disadvantage, in terms of the additional workload that is thereby required.

In contrast however, an appreciation for blended teaching-and-learning methodologies was made in relation to access to information; improved learning outcomes; additional time for professional development; decreased workload; and cost-effective, efficient communication and information dissemination between lecturers and students.

Table 7.4: Interview quotes of the appreciation of blended approaches

Reference	Participant quote
P3	*"E-learning success implies making more information available to students than having them to photocopy from hard copies…it also allows students to have access to a wide range and wide variety of information, which would subsequently afford them improved learning and educational outcomes, which on its own is a measure of success."*
P4	"*…e-learning has alleviated problems associated with class attendance by academic staff because due to the incorporation of e-learning into the teaching/learning, the academic staff could utilise it; and they therefore, do not have to be always present, which gives them enough time to develop themselves through attending conferences...Communication between students and lecturers has been facilitated by the adoption and utilisation of technology, thereby bringing the two closer together*."
P5	*"Helps busy students and minimises work load for me."*
P6	*"Improved communication."*
P14	*"Cost-effective, informing students, keeping in touch on a daily basis, helpful using course documents."*
P26	*"Communication is useful, upload assignments electronically, hardcopy and back up after upload, useful way of distribution".*

In addition, blended online teaching opens boundaries, given that higher education institutions require *[P31]: "a very diverse group of students, from different countries"*. It allows for a more constructivist teaching paradigm; and moreover, a blended-online environment enables collaboration, which enhances global partnerships, as well as research, for lecturers and students.

Table 7.5: Interview quotes on how blended approaches enable collaborative, constructivist teaching paradigms

Reference	Participant quote
P13	*"Yes it does. I use constructivist learning, where engagement of students is important. This approach allows students to learn content and gain practice."*
P5	"*Inter-university interaction between UWC and other universities has enhanced the application of e-learning between and among universities, a move which has facilitated students' learning. as well as [the] exchange of ideas and perceptions…Through the adoption and use of e-learning, one reaches out to the world easily, and this facilitates interaction with people across the globe. Constant exposure to technology has seen academic staff improving their knowledge base through making publications in the field of e-learning and other fields of their specialisation.*"
P8	*"Students can do online research and share information."*

Furthermore, respondents who have adopted blended eLearning practices claimed that the eLearning platform consists of educational tools, which enable flexible learning environments and improve student-lecturer relationships.

[P11]: "It is an online educational tool."

[P3]: "How you engage with students allows flexibility."

[P6]: "It allows access to notes and lecture material; as well as improved student-lecturer relationships."

These different responses above require, as highlighted in Chapter 2, that those attempting to influence the implementation of eLearning practices, "*engage academics in the reform process…in their local*

communities of discourse about their educational practices" (Uys, 2007:241-242). Furthermore, these results confirm that the distinctiveness of the integration and application of new technologies into education is only slowly becoming visible – due to the conservatism of education towards factors related to hardware and software; adaptation; need for training of instructional designers; and the familiarisation of educators and learners with systems (eLearning Papers, 2009).

7.3.1.3 Training and support for ePedagogy and content design

Academics maintained that there is a great need for the E-Learning Development and Support Unit (EDSU) to provide the necessary expertise and support. Training becomes a necessity, when a lecturer wishes to place courses online. Such training would not only enhance the notion of content design and ePedagogy; but it would also assist with the quality of online courses that supplement traditional teaching methods.

Table 7.6: Interview quotes on the need for ePedagogy support

Reference	Participants' quotes
P14	*"Anybody can make resources available online, like uploading your material onto eLearning where students can download it… If that is what you mean by teaching online…but in terms of what else is possible then, I would say no. Not anybody can teach online."*
P7	"*I think definitely, you can't just throw everybody in there because it entails a different way of thinking. And I think many people are reluctant because they don't know the environment. You can't just duplicate what you do online – I think it is a special skill. So people would need to learn about ePedagogy.*"
P11	"*I think if they are going to do that [teach online] they are going to copy something from somewhere, an existing recipe…but when you are going to apply your own knowledge, your own subject to that recipe – I think you going to have to get a lesson or two.*"

Furthermore, the attainment of ePedagogy skills was compared to a good lecturer who has applied a student-centred approach to conventional teaching and learning.

[P6]: "I think the e-pedagogy skills would be in some sense similar to what it is to be a good lecturer, in a sense just that any media can be used or abused, so you can have a lecturer,[a] passive transmission experience, or it could be interactive engagement – getting the student to learn and engage".

In addition, the need for efficient, continuous training and support was expressed. The lecturer's needs; and the levels of computer literacy had to be considered – as well as continuous training sessions, in order for lecturers to keep abreast of the introduction of new tools. Support from the eLearning team was also a motivational factor for lecturers who had any fear of new eLearning practices.

Table 7.7: Interview quotes on the need for continuous training, support and motivation

Reference	Participant quote
P19	*"Obtained the necessary training that enable sufficient knowledge to navigate the site."*
P9	*"Yes, definitely I need support, because I only have the basic skills. My colleague does the uploading of slides, because I get confused."*
P12	*"Absolutely yes. I do go for training; I attended 3 of the same sessions. I think training must be an ongoing thing."*
P7	*"I need support on frequently upgraded tools."*
P1	*"People should overcome challenges and the fear for technology and get committed to e-learning, together with motivation from the e-learning team."*

At the same time, it should be noted that given the dynamic nature of education, many academics had not received their education through online environments; hence, this was something that they had only come to realise in recent years and even months. Therefore, they emphasised the need to explore and learn at their own pace. Moreover, some even suggested the creation of online tutorials, where a lecturer would be able to learn at his/her own pace.

[P31]: "Yes, cannot teach online. Those I have learned I struggle to remember; hence, constant training is needed".

[P8]: "Yes, because many people were not at her level of understanding, she was left behind."

[P12]: "*It would be nice for me, the lecturer, to have online tutorials. For the students, I would use it as an additional tool…and as for eLearning, I can use it to place on-sample questions and assignments*".

These results can be directly linked to the context of a non-coercive implementational approach, and the eLearning awareness campaign reflected on in phase 1 of the case study; whereby, the access and socialisation phase of the eLearning model would highlight the need for users to be trained in the use of an eLearning system – before they would be able to focus on ePedagogy and effective online teaching and learning processes.

However, continuous training and support do not always imply that a lecturer would actually make use of eLearning practices, since such practices can be viewed as labour-intensive. Moreover, a lecturer might become familiar with the eTools, but not find the time to continue with the effective implementation of these skills; or even have the time to request any training.

[P17] "…one visit to elearning centre…had 1 group session. Can't find [the] time to actually visit EDSU. A very powerful tool, and needs a lecturer to monitor and make use of the tool."

[P7]: "e-learning is labour-intensive".

[P24]: *"We would like to have training, but we do not have time at this faculty."*

These results are aligned to phase 1 of the case study, indicating that lecturers are not coerced into immediately creating an interactive online environment. The evidence is reflected in the quantitative results indicative of the number of office consultations requested and the actual implementation thereof [Refer to Chapter 8, Figure 8.1.] This is indicative of a 33% of eLearning adoption by lecturers over a period of five years (September 2005 – October 2010).

Subsequently, the need for continuous, reliable support was further extended to having eLearning facilitators on standby in specific classes, as well as telephonically – especially for those lecturers who felt embarrassed if they did not have the necessary know-how, and were not able to assist their students.

[P2] "Probably it would be nice to have support."

[P10] "If I need assistance, I receive assistance telephonically."

[P28]"Currently, I get good support from EDSU; [they are] willing to help every time we have problems".

This evidence can be directly linked to the results of phase 1, the *Online-Creation Model* that was used by the eLearning team during departmental meetings, in order to take a non-evangelical stance against a particular institutional eLearning system; and rather to be perceived as a support team that promotes the effective selection of eTools that are integrated with sound pedagogical practices.

In contrast to these findings, a view was expressed that lecturers should take control and ownership of their eLearning initiatives, whilst knowing that the eLearning support team is always available to assist.

[P17]: "The lecturer should take the initiative."

[P12]: "Whether you taught in the traditional ways or you taught by way of e-learning, it's still your responsibility to improve and take control process."

Interestingly, respondents also indicated that it was not necessary for lecturers to receive training in ePedagogy, and that eLearning practices were perceived to be simple and mundane. One participant [P6] remarked "*...that anyone can teach online".* Rather, it was deemed necessary that tutors also receive training to upload the lecturer's learning material into the online environment.

Furthermore, lecturer respondents whose perception of ePedagogy indicated that it includes the integration of face-to-face interaction between the lecturer and student – a scenario, which in some disciplines like Mathematics is mandatory – and that the application [or lack] of ePedagogy depended on the particular discipline involved. They maintain that there are some subject areas that require face-to-face intervention. Participant [P15] remarked that: *"Students should be in class, especially with the complex mathematics taught in class."*

These perceptions are in line with the work of Alonso, Lopez, Manrique and Vines (2005:222), as reflected on in Chapter 2, highlighting lecturers who make practical decisions regarding the application of eTools, which enable students to apply their learning.

Equally important, paradigm shifts of an institutional pedagogical system were seen to be aligned to a committed institutional leadership. Even more, if lecturers at UWC are seen to have a lack of ePedagogy skills, it would reflect badly on the eLearning department, and the institution as a whole.

Table 7.8: Interview quotes on institutional pedagogical system aligned to institutional leadership

Reference	Participants' quotes
P2	*"It is not automatic that lecturers, learning facilitators and mentors take up where the adoption of e-learning shifts the entire pedagogical system. There has not been encouraging commitment towards e-learning by the institutional leadership; and this has tended to set a discouraging precedent. This has had a negative impact on the adoption of the pedagogy by the academic staff."*
P20	*"…the lack of such skills will reflect badly on the eLearning department and other lecturers, as the work will now be viewable by your class and lecturers from other departments."*

These results corroborate the work of Le Grange, Greyling and Kok (2006:87), as reflected on in Chapter 2, highlighting that institutions who are going through these technological changes should invest in staff development, and processes which support the teams – in this case, the instructional designers of EDSU – who need to support the staff; hence, creating a win-win situation.

7.3.1.4 The key role of instructional designers

Consequently, the results above are indicative of an increased appreciation of the need to apply ePedagogy. These results can be directly linked to the results of phase 1 of this study that ended in the creation of an *eLearning model: Online-Course Creation*, which focused on the pedagogical processes for a blended teaching and learning approach, and moreover, the need for an Instructional Design team to

enhance the creation of interactive online classrooms based on sound pedagogical principles in the institution.

The eLearning strategy of UWC (2004) states that: *Academic staff need to have the necessary skills, competencies and attitudes, educational and theoretical background, as well as access to the technology needed to develop and manage courses that include access to and use of ICT*. This use of ICT can be improved through the practical implementation of instructional design training and support. The eLearning instructional design team is responsible for ensuring that lecturers conceptualise the importance of the effective use of ICT in education; especially with regard to the enhancement of their face-to-face instruction. Academics should also be given the necessary training in these skills, in order to be able to develop their own online courses.

Research results retrieved from the September 2008 interviews with lecturers expressed the notion that lecturers do not have the necessary know-how, in order to teach online. In addition, participants associated the know-how with being familiar with other systems, and being able to navigate a system. Furthermore, one participant actually expressed no need to know how to teach online; associating the necessary know-how with content-based courses only. Some of the responses related to the need to know how to teach online, were as follows:

Table 7.9: Interview quotes on the 'know-how' of online teaching

Reference	Participant quote
P2	*"Only parts of it; no time to play with etools."*
P3	*"Know how, but I still want to learn a lot."*
P7	*"Yes I do know, if judged on the basics I am currently doing."*
P13	*"No. The course is not content-based."*
P19	*"Confident about using the platform; did receive the training that allowed me to navigate the platform."*

P20	*"Been exposed to an online course before, so can relate to eteaching."*
P32	*"No, just know-how to upload notes, and multimedia notes...."*

Apart from formalised training courses offered by the instructional designers, academics are assisted on an individual basis, as the need arises. Hence, the instructional designers play a key role in relation to the blended teaching-and-learning approach, and making sure that lecturers know how to teach online. Thus, findings during the 2011 interviews with lecturers highlighted an increased know-how, and the usage of various eTools within their online courses; namely, content management (file-manager), announcements, discussion forums and assessment tools, as well as digital media tools.

[P12] "I use the discussion forums on 2 of the 3 modules that I teach. I use concept mapping. My students submit their assignments on e-teaching-1st years. I also use podcasts, but 1st years seem to struggle with the access to it."

[*P 11] "If they do theory in class, there is no visualisation for students. But the system allows them to get their own visuals for class."*

These results highlight the need for the instructional designers to create training programmes; and more specifically, as Dowling and Seepe (2004:197) state, the need to create and provide suitable programmes. These eLearning training programmes can be directly linked to the "*pedagogical adjustments*", as referred to by Engelbrecht (2003:42), which need to be made to eLearning support services and content, if the needs of the end-users are to be met.

To date, there is no policy within the institution related to the mandatory adoption of eTools to supplement teaching and learning practices. Thus, lecturers must voluntarily contact the instructional designers for training and support. Progressively speaking, the results of the September/October 2011 data collection are indicative of change in relation to lecturers' thinking about the interactivity, flexibility and individual responsibility of the lecturer to apply online learning practices. One respondent actually thought that eLearning application had become mandatory for all lecturers at UWC.

[P20] "Ensure the platform gives an interaction platform like Facebook."

[P2] "Saves you time, additional flexibility."

[P22] "Yes, it is mandatory for everyone, and for distance learning, [in particular]."

This change in lecturers' thinking about the use of the eTools correlates with that of Fresen (2007:351), as reflected on in Chapter 2, emphasising that online environments present change, which includes different communication and assessment methodologies, as well as the roles of both lecturers and students.

In addition, the answers of these lecturers corroborate with the student results, whereby 95,1% of the student respondents indicated that they were familiar with the institutional eLearning platform. These findings are aligned with those of sections 7.5.1 – 7.5.3, whereby the researcher presents the quantitative results of the increasing number of lecturers who had voluntarily contacted the instructional designers to assist with the creation of their online courses during the period January 2009 – October 2011.

Furthermore, the results are in agreement with the fact that the domains of content and pedagogy should not be split. The association of instructional designers (pedagogical experts) and educators (content and research experts) should lead to instructional designers gaining a better understanding of specific disciplines; and research should lead to an increasing discovery of pedagogical and content knowledge that educators and subject matter experts can apply within their teaching discipline (Kanuka, 2006). Moreover, this evidence relates to the results of the analysis of the institutional eLearning strategy, which envisaged the instructional design approach to familiarise and train staff and students within a blended eLearning environment.

7.3.1.5 Training and support for students

The support by the eLearning team, specifically the instructional designers, extends to the provision of training to students – to enable them to use the eTools effectively. Once lecturers had received training from the instructional designers, they requested this training for their students also. There is definite evidence that ICT can only improve learning when various factors come together to promote this purpose. This situation still prevails, as it was to Moseley and Higgins (1999), that "*the professional development of staff in computer literacy [has] contributed to substantial gains in students' attainment in the short term, under the following conditions*:

- *Clear subject-focused objectives had been identified;*
- *It was clear that the teacher could use the ICT activity to deliver those objectives;*

- *The teachers ensured that students had ICT skills that were sufficient to enable them to achieve the subject-specific objectives; and*
- *Students were given sufficient access to ICT to achieve the learning objectives*".

Respondents indicated the need for training for their students, in order for them to become familiar with the eLearning environment, and to then be able to access the communication and content within the eLearning platform. In addition, a need for basic computer literacy skills training for students was identified.

Table 7.10: Interview quotes on the need for student eLearning and basic literacy skills training

Reference	Participant quote
P9	*"Yes, for sure. We did it [organised training] for our groups when we started. We had a eLearning training session in the lab for students where everyone was introduced to the eLearning environment. I think it is very important that they are starting on the same basis and nobody feels out…and that they don't feel disadvantaged in any way."*
P8	*"They only know this technology: cell phones.[When] you come to computers – they don't know anything. They don't know the mouse. Hence, it becomes a problem. For our first-year nursing students, we want them to do computer literacy. They need to learn how to type. They need to know at least one computer package, such as MS Word."*

Moreover, it is important that a student also takes ownership of his/her eLearning experiences.

[P26]: *"It is not the responsibility of lecturers only, but also of students to use and know how to use eLearning platforms".*

This evidence can be directly linked to the institutional eLearning strategy, which highlights the strategic objective, whereby the student "*will have the necessary skills, attitudes and resources to use technology creatively in taking responsibility for their own learning and becoming independent learners.*"

Students in the institution are trained in the navigation of the eLearning system. The team supports students who need to engage in online activities through face-to-face training sessions, email, telephonic, as well as walk-in visits, to the eLearning department. Student respondent results indicated that 90.7% admitted to having received eTools training. The student results are aligned with the importance of students becoming more familiar with eTools within their specific online courses, in order to gain student advantages, such as improved collaboration and teamwork, a focus on deeper understanding and analysis, and even more, the attainment of ICT skills, which is a vital employment criterion (Jones, 2010).

However, 44.8% of the student respondents emphasised that the training was not sufficient, and that they needed more training, in order to become familiar with the functionalities of the system. These results confirm that educators and students will always need assistance with eLearning activities, as they progress through online environments, searching the internet, or developing a multimedia presentation (Mayisela, 2009/10-2011/12). In addition, these results confirm that eLearning courses, either fully online or blended supplementary, entail various tools and functionalities that must be available to students and educators; hence, it is vital that the eLearning support community investigate the usage of preferred tools (Buzzetto-More, 2010).

7.3.1.6 E-Learning practices supplement traditional methods

Respondents firmly stated that the UWC was not a distance-education institution, and that online courses would not replace traditional teaching methods, but would rather supplement them.

Table 7.11: Interview quotes on how online courses are supplementary to traditional methods

Reference	Participant quote
P13	"*Supplementary, yes. I do not think in Mathematics, it is going to replace…for some students perhaps, but for most, I think they still need the teachers.*"
P10	*"Supplementing, yes – not ever replacing."*
P12	"*At this point, as a supplement. Perhaps in two years or so, I would have a different view.*"

P7	"*We are not a distance-learning institution, so you must decide how you are going to pitch it. Perhaps you want to pitch it for somebody that is ill. Then you can pitch it for distance learning. It will eventually go that way, but initially it is supplementary."*

Others viewed eLearning practices not as supplementary, but rather as a completely different mode of instruction. Moreover, a respondent also indicated that an online module would never supplement face-to-face instruction; rather it could facilitate some of the specific achievements of a module.

Table 7.12: Interview quotes on how online courses are **not** supplementary to traditional methods

Reference	Participants' quotes
P5	"*No, I see them as totally different to traditional instruction. You can use other forms of learning, but when you talk about traditional instruction, I would think you mean sort of content-based learning. Whereas I see e-learning as more lifelong learning, where you are looking at improving people's skills which they can use beyond university.*"
P8	"*It can never supplement my face-to-face with students, but it can take a lot of work away from me, so that I keep those specific modules – those that I have face-to-face, based on the context…modules that I want to reach deep into the students. As teachers, we are also leaders. We teach, we lead, we support, we counsel, we do a lot during the teaching session….so technology can never replace those modules…the human touch. But it facilitates the achievement of our outcomes…because it is much faster.*"

Hence, it was not surprising that respondents were content with just placing notes online. To such respondents, online teaching implies uploading information online. Participant [P34] remarked that she: *"Never uses anything else besides downloaded notes."* However, to add value to the learning process, technology should be closely linked with core learning and instructional outcomes (Fourie, 2000); and it should not be used as a repository for PowerPoint slides or lecture notes.

At the same time, these results correlated with those student results, which indicated that 88% of student respondents were making use of the LMS to download lecture notes. In addition, only

14,9% were using it to share files; and only 9.1% were using it for personal usage. Equally important, it should be noted that 40.6 % of student respondents made use of it for communication purposes; while as many as 41% used it for assessment purposes.

Table 7.13: Application of eTools within the LMS

Use of LMS	Percentages (%)
Downloading notes	88%
Assessment purposes	41%
Communication purposes	40.6%
Sharing files	14.9%
Personal usage	9.1%

Student respondent results also showed that only 32, 2% make use of eTools on a daily basis; while 36.8% indicated that they only used eTools when necessary. Furthermore, these student respondents (results) corroborate the looming paradox above: despite the majority of students reflecting a readiness to accept change and familiarity with the eLearning platform, most were mainly using the system to download notes; and hence, were not using it effectively. These results could relate to the need for sufficient infrastructure; and moreover to the fact that students only have access to online material and eTools if their lecturers adopt blended eLearning practices, since eLearning application is not mandatory – and it is often viewed as a practice that would inevitably enable students not to attend classes on a face-to-face basis.

7.3.1.7 E-Learning and its impact on students' class attendance

The results above directly influenced respondents' perception that if students were constantly exposed to online notes and even tests, they may decide to absent themselves from the physical contacts with lecturers, preferring to access the lectures and notes online. *Participant* [P2] remarked: *"It is a problem because students don't come to class because there is a backup. False place of security…"*

Balanced against this, a respondent actually expressed the view that the core business of the eLearning team should be to ensure that a lecturer's course material is placed online. In addition, a lecturer could explain important concepts online; and thereby, keep students updated regarding current issues.

Table 7.14: Interview quotes on the importance of placing notes online for students

Reference	Participants' quotes
P8	*"E-learning must have as its core business to deliver a course material by putting the lecture on the webpage. The audio stuff, the graphics and the videos may come in later."*
P25	*"Yes eLearning helps…students don't come to class on time, so the lecturer can explain concepts online."*
P7	*"Pay attention in class – listening rather than writing notes. Can download later."*

Equally important, students are able to listen more attentively in class, and are able to download supplementary notes online. Moreover, introverted students are able to participate more easily in an online environment.

[P8] "Helps students discuss current issues pertaining to the course".

[P21] "Good-structure, focused, allows for collaboration, especially for introvert students…".

At the same time, student results indicate that 88% of student respondents expressed the view that they had benefited in terms of being able to access course notes on the eLearning platform. One student responded: "*It makes it easier to receive notes and worksheets. Assist in downloading and when completing notes."*

On the other hand, lecturer respondents expressed the view that eLearning is predominantly suitable for distance learning; and it therefore, gives students access to class material, especially those who might not be able to attend classes, due to personal home and financial challenges.

[P7] "Helps students who were not in class, not to say students should not attend."

[P3] "Announcements are easy, video clips – students can access; flexible

[P4] "E-learning system helps. Everybody does not have a textbook."

[P5] "[It]helps those who cannot attend, due to home and personal problems."

In addition, one respondent expressed the notion that some students were abusing the privileges extended to them to utilise teaching-and-learning by just attending a face-to-face class for formality's sake; and

some to secure a mark allocated for being present in a lecture, but without showing any commitment. Thus, lecturers expressed the need to adopt effective eLearning practices, even for large first-year classes.

[P12] "The discussion forums for 1st year/ foundation students contribute to their critical thinking. It allows diverse opinions and forces students to read, which is an academic skill. It enhances their critical reading and self-reflection, as they are forced to think about what they would like to write about in the discussion forum."

These results corroborate the work of Salmon (2004: 48), as discussed in Chapter 5, highlighting the need for a "*constructivist approach to learning, which fosters deeper thinking and reflection*". Furthermore, the results are also in line with phase 1 (Chapter 5), which highlights that it is important for lecturers to plan online courses more effectively, in order for students to be developed as knowledge builders, whereby they are given the responsibility to initiate and contribute to online discussion forums and collaborative groups.

7.3.1.8 Effective planning linked to time constraints, resources and support

Respondents expressed the need to plan in advance for their online courses, in order for them to have the time to become familiar with the use of the eTools. E-Learning practices were also viewed as comprising an additional workload.

[P10]: "*I am a technophobe, so the first thing I will do is make time to come along to a department, like the eLearning department*".

[P11]: "*Of course, I would have to plan. It is going to be a lot of work and time. Some people are totally against it, because it means more work. At the moment, they are quite comfortable in lecturing the way they are doing…"*

However, others deemed effective eLearning planning as being ad-hoc learning, as it was associated with the necessary availability of time and resources to support online initiatives and efforts for specific disciplines.

[P22]: "…*in order to prosper in this new teaching-and-learning environment, one would have to plan on an ad-hoc basis, when time allows.*"

[P9] "*Yes, you would need to plan. It sounds all very great, but I don't think for Languages our university is willing to invest enough for us to do technological teaching. I work with such outdated equipment, it is quite laughable. There is lots happening out there, but I can't even use a quarter of that…we work with old equipment…If I want to use any labs, they are broken down.*"

These results show that a lecturer's positive attitude to the reduction of face-to-face lectures and an increasing awareness of asynchronous eTools, should not be seen as an opportunity by the institutional leaders to increase the workload of a faculty; rather, more time should be given to them to plan for blended-learning approaches (Lefoe and Hedberg, 2006).

7.3.1.9 The need for an awareness of the value of online assessment tools

Respondents were not aware of the existence of eLearning assessment tools; and they stated that there were factors for or against the benefits of the online assessment eTools, especially for specific disciplines.

[P14]: "*We only know the traditional ways of assessment: test and assignment; and that's it. If with the advent of technology and online teaching maybe some new assessment methods become available…if you have that kind of information and you can demonstrate the value thereof…then certainly, I will adopt it.*"

[P10]: "*With the English discipline it is more essay-based, so I don't think much of that [online assessment tools] will be very relevant.*

In contrast, other respondents highlighted that technology makes the creation and marking of online assessment tasks easier; and they stated that some lecturers were optimistic about exploring and using online assessment tools.

[P2]: *"…online assessment tools could help in generating computerised Multiple-Choice Questions (MCQs) because of the difficulty one experiences in developing them."*

[P19] "Accessibility to various tools, such as an MCQ, assists especially when it comes to marking."

[P23] "Those who have already started using eLearning, especially with e-testing, have expressed some excitement."

Furthermore, a respondent [P7] indicated that within her specific discipline, they are already making use of another off-the-shelf assessment tool: "*We teach computer literacy, and we have a tool that we use for*

online assessment...It is a well-written tool, so if we had to duplicate, it would take long – so we take it off the shelf...it is called a skills-assessment manager. It looks at how, for instance, people use words, and so forth…it keeps track of everything."

These results are in line with the findings of Lim and Chai (2008), as discussed in Chapter 5 of the case study, who highlighted that students and staff are still focused on examination marks; and that perhaps it would be easier to transform their pedagogical beliefs through the promotion of online-assessment systems.

7.3.1.10 Lecturers need to employ a hands-on role

Respondents expressed that they (the lecturers) should take a hands-on role, in terms of giving the necessary feedback to the eLearning team on the benefits and pedagogical value of the eTools.

Table 7.15: Interview quotes on the need for lecturers to take a hands-on approach

Reference	Participants' quotes
P10	"*Definitely, one can only give that feedback when one works with what is available and see where there are problems.*"
P7	"*It is worthwhile to get feedback from lecturers. Because when you just go-ahead on your own, then people don't want to come on board…I must say that is what happened to the Marks System [when it] was launched before it was ready…and people were so disappointed and became reluctant to spend the[necessary] time on it.*"
P12	"*This is very important. Otherwise, you will develop many good theories, but you will not know how it[sic] works in practice…*"

In addition, a hands-on role would possibly further enhance the traditional face-to-face instruction, while at the same time it would improve students' eskills.

P27]: *"Yes, lecturers should take a hands-on role – to enhance the face-to-face classes more, and to enhance students' technological capabilities."*

However, a respondent [P9] sees this as a task, which would add to one's administrative duties, and would, in turn, impact one's teaching responsibilities: "*Yes, but I say it with a big caution. I find that one of the things that one has to watch very carefully is that one doesn't get drawn away from one's teaching work into too much admin…It sounds great, and it is obviously of great interest to the eLearning team, but I find it is always extra work that you have to do on top of your university work – admin and not actually teaching…"*

Furthermore, another respondent [P8] indicated that the type of underprepared students entering the university might hinder a lecturer's motivation to be more hands-on: *"It is important for us lecturers to be hands-on. However, the discrepancy might be – the type, the calibre of students might also draw us back. For example, I put a self-assessment questionnaire online;… however, when they arrive on campus for the first time they are not even ready to do the first assessment of discovering what they are able to do; what they know; what they can and cannot do;…we are struggling so much this year."*

7.3.1.11 Variables of age, gender, social background, experience and race impact the eLearning journey

Respondents expressed the belief that age has an impact on the desire to use eLearning, and technology in general. Participant [P3] remarked: "*Some of us still prefer to actually deal with written text in front of us. Maybe age has something to do with it. Perhaps for some of the younger students, it is more appealing".* This corroborates the work of Robert (1991:6), reflected on in Chapter 3, highlighting that changes are evident as younger innovative generations produce transformed beliefs about "*life, work, family, community and organisations.*"

In contrast, some respondents indicated that age does not affect one's eLearning journey, and that it depended on the individual, and more often on the available resources. Respondent [P9] stated: *"You clearly have people of my age group who have come to work with computers fairly late in our teaching career… and some find it easy to deal with and others not…It really depends on the individual. I believe that provided the classroom set-up works that way, it [eLearning] does supplement [traditional learning]…*" These results correlate with the student respondents – majority, aged 18 and 24 years – who indicated that they had benefited from their usage of the eTools.

Furthermore, a respondent also aligned the age factor and experience stated [P31]: "*In our department, we did a study on first years and their knowledge of these technologies, and those older [ones] with another degree had more skills than the first timers.*"

There was a general perception that males are more inclined to have an inherent interest in electronic and technological innovations than females. Hence, a respondent [P10] indicated that gender is a definite obstacle that influences her eLearning practices: *"Gender is a definite obstacle. I am afraid I conform to the statement that women are not supposed to be technologically capable."*

However, in contrast, a respondent [P7] indicated that the men in her department would never attempt any eLearning practices: *"I would be willing to explore, but I wouldn't be able to motivate the males here in my department;…they have their own ideas."*

Other respondents indicated that a person's qualifications and knowledge can overcome all barriers. Even more, racial barriers can be broken down in online collaborative environments.

[P8]: "I think for me it is qualification. I believe knowledge is mind-opening. If you know why you need that, then no gender can stop you; no social standing can stand in your way. Knowledge is important. So, if you can be qualified accordingly, and know why you need to be, then you can overcome all the others."

[P11]: "The collaboration between Stellenbosch and UWC students via KNG has helped to bridge the gap that previously existed between white and black."

Furthermore, it was emphasised by participant [P7] that both the student's and lecturer's social-background, related to the usage of technologies; and these will both have an impact on an individual's willingness to make use of technology: "*A student's social background. Some students are so much more familiar with technology. For example, our group of students from Afghanistan…The easy way for us to meet [is] on Skype;… then the lecturer moves things into Skype…I am slightly slower…she easily cuts and pastes and moves things into the Skype environment…Another lecturer in our department is totally flabbergasted at what we are doing;…he does not know what we are talking about…So, obviously your cultural background is important…that is a culture of using the technology….I would think it is important*

to create that culture by introducing new things slowly…Some students are more reluctant than others;…and it may be because of the accessibility of the technology…"

7.3.1.12 The need to be incentivised

Respondents had conflicting views about the offering of incentives to academics who adopt eLearning practices. They were of the opinion that it should not be necessary for lecturers to receive incentives, as the decision to employ eLearning practices was for the development of the students; and it should be integrated into a lecturer's courseware design.

[P12]: "Difficult question…I don't think I need an incentive…I think as a teacher you need to give students every possibility they should have;…you must interest the students…"

[P10]: "I don't think I should be rewarded for embarking on eLearning…eLearning, as in research, is developing one's skills, in particular one's teaching skills…"

[P7]: "No, I don't think so…that is part of your teaching…it should become part of the design of your courseware for general consumption…"

Others were of the opinion that incentives would motivate academics and keep them interested and involved.

[P7]: "Yes, when we are talking rewards; we are trying to bring up standards; we are trying to introduce technology things that have not been there. It always goes with human needs; and when you are getting some reward, you feel like you did something good…not a salary, but acknowledgement…"

[P9]: "Giving laptops to newly recruited staff members is an excellent idea. However, for the laptops to reap results, constant meetings and feedbacks from the users are necessary."

Furthermore, there were respondents who expressed the need to receive incentives before actively engaging with eTools; and moreover, they found it difficult to see the continuity within an online environment in the event of a lecturer leaving the institution.

[P9]"Yes, but there is a lot of uncertainty; because I am a temporary lecturer, and I don't want to put work on the site; and in 6 months [time], I will not be around to explain it."

[P33] "If there is an incentive for me to do so, I will. But for now there isn't [any incentive]."

7.3.1.13 Infrastructure and the availability of resources

Respondents indicated that the shortage of the necessary resources, especially computers, and suitable teaching venues, made it difficult to completely implement eLearning practices. The general resentment about inadequate facilities and resources among both students and academic staff constantly surfaced.

[P19]"No access to Labs."

[P14]: "The resources are not available, like an LCD or computer. Quite often you are limited. That is just referring to the use of PPT…If that is not available, then, yes, you will go back to the old way of teaching. Planning is important; and it is related to what your institution has in terms of resources."

Respondents stated that even though they had started to use eTools, the continuous connectivity problems hinder their progress. Furthermore, it was highlighted that many students at UWC have no access to resources at home as well.

[P8] "Frustrated with slow network."

[P8]: "I see a problem here on campus. We introduce students; we tell students; but it ends just there! When they go home there is no computer. Fortunately, they do have cell phones, but these are not linked to their academic work. They are only available for their social lives."

Consequently, most student respondents felt that there was a need for sufficient infrastructure on campus to accommodate every learner. This was evident, when they were asked how they accessed eTools; the majority (74.6%) indicated that they relied on institutional/campus PCs. It should be noted, however, that an increasing number of students (48.7%) indicated that they made use of their own laptops.

By the same token, respondents expressed the concern that eLearning interventions are exclusive; as they are still not available for all students.

[P11] "Not a lot of people have access. Students don't have computer literacy."

[*P2] "Language – not only English; no internet at home; [only] available to [the] elite."*

These results corroborate the work of Fourie and Bothma (2006:485), as discussed in Chapter 2, highlighting the focus on necessary support and access; hence, the inability to progress to a higher level

of "*bridging the digital divide*"; and ultimately the empowerment to operate and share within a group and societal context.

The necessary infrastructure is thus one of the most vital components for effective eLearning implementation. eLearning implementation should, consequently, also focus on establishing or upgrading the ICT infrastructure to meet the expectations with regard to capacity, workload and dependability. It should be chosen and implemented carefully, in order to support integrated teaching and learning strategies of the institution. Inappropriate selection of the infrastructure would have far-reaching detrimental effects on the entire strategic and operational plans, as well as on the processes envisaged at this institution.

Respondents expressed the need for a stable eLearning system in relation to longevity, user-friendliness, aesthetics, and sufficient bandwidth and storage. If the necessary infrastructure support strategies are not implemented, it takes more effort for the eLearning team to motivate lecturers to adopt blended-teaching methodologies.

Table 7.16: Interview quotes on the need for a stable, user-friendly eLearning system

Reference	Participant quote
P8	*"So quality to me means that the system is robust; and that it doesn't fall down. That it will work today, and that it will work in five years' time as well; not work today, and in three months' time it falls down because of insufficient capacity, or bandwidth, or speed, or memory or whatever.*"
P20	*"Made use of Blackboard Vista and comparing with eteaching, eteaching is not user-friendly. Student ignorance [is a big problem]."*
P7	*"If it [LMS] is very clean and crisp, then you are able to use [it]."*
P22	*"Tools take long to open up. I am sometimes impatient to log on to site."*

P32	*"User-guides for e-teaching is a priority; and space for uploading files as requirements differ per module; hence, there should be more space, as opposed to the limited space there."*
P7	*"Now because the technology has failed, most people in certain areas, for instance on emails…and they see that the people that are taking care of that infrastructure are failing them – in the sense that they don't get the proper support or it takes long for them to fix something…there is a need for e-learning to come up with a motivational strategy that will encourage them to come back on board."*

Equally important, a respondent [P2] expressed the view that if the necessary resources were available to users, training and support would not be necessary*: "If all mechanisms and resources are put in place, it would not be necessary to have back-up support staff/team to give students and other end-users the necessary support in terms of e-pedagogy and technology tools."*

These findings are in line with those of Houghton and Sheehan (2000:21), who stated that "*productivity and growth are increasingly determined by the rate of technical progress and [the] accumulation of knowledge*". The systems, which should enable the effective distribution and dissemination of this information, are vitally important. The findings are also aligned to the hybrid/blended eLearning model, as deliberated on in Chapter 2, highlighting an e-Learning philosophy, which addresses both software and hardware elements, in order to attain institutional learning goals (Ijab, Anwar and Hamid, 2004:80).

Respondent [P20] stated: *"Efforts to develop a vibrant e-learning facility have been hampered by scarcity of resources, especially financial resources, due to lack of commitment by institutional leadership to e-learning within the institution…this culture of non-delivery and complacence within the institution with respect to the development and commitment to e-learning has been frustrating, which, in turn, would impact negatively on e-learning support structures."*

In contrast, despite the inadequacy of the resources, some respondents expressed a positive, optimistic attitude toward the use of the e-Learning platform; and they indicated that it proved to be a user-friendly,

stable and robust system. Participant [P22] remarked: *"Easy to use, friendly, accurate, stable platform, a strong platform, a good teaching basis."*

Equally important, the results corroborate with the fact that an increasing student population entails the need for significant investment in ICT to sustain support levels. In African countries, this entails the necessary technology, buildings, IT and administration support; and even more, the committed skilled staff who are willing to stay at the institution for a long time – to plan and implement equipment on both the technical and pedagogical levels (Tedre, Ngumbuke and Kemppainen, 2010).

7.4 Summary: Positive and negative attitudes at different times of the e-Learning continuum

The various retrieved themes indicate that there are both negative and positive attitudes, as well as responses regarding the adoption of eLearning practices at UWC – at different times of the continuum; and in this phase of the case study, for the period September 2008 to October 2011. These contrasting attitudes correlate with the work of Kotter and Schelesinger (2008:130), as highlighted in Chapter 5, that e-Learning initiatives result in major changes in an institution; and moreover, they create "*a disturbance to the normal way of teaching and learning.*"

The general consensus indicated that there was a need for change of attitude, starting with the formal leadership at the top, right down to the academics. If the institutional leadership could embrace the notion of eLearning, and encourage the academics responsible for the application of eLearning, it would be easy for the notion of effective online teaching and learning to be adopted by the entire campus community. Moreover, those academics who were seen to be champions, even communicating with students over weekends, should be best suited to apply ePedagogy, and, in turn, to motivate others. This supports the contention that considerable effort should be made by institutions to meet the needs of the motivated staff members, who are the main drivers of change in the institution (Vrana, Fragidis, Zafiropoulos and Paschaloudis: Undated).

These results corroborate the work of Uys (2007:238), as discussed in Chapter 2, highlighting the need to "*enable both top-down and bottom-up implementation approaches to ensure enterprise-wide technological transformation in higher education.*"

The results further indicated constraints, such as the lack of expertise and skills among the academic staff expected to implement an effective online teaching-and-learning environment; and the lack of adequate resources that need to be addressed, before eLearning could be fully adopted. A positive attitude and optimism should also be visible among those tasked to implement and support eLearning initiatives. Back-up support for lecturers in the lecture halls would ensure that they could feel more secure and confident. These findings corroborate the view that it is important for colleagues involved in teaching academics to apply educational technologies; to be continuously involved in the study of pedagogy; to model pedagogical practices; and moreover, to employ support staff, who have the necessary pedagogical backgrounds and experiences (Jugovich and Reeves, 2006).

Additionally, this last phase of interviews conducted with academics in September 2008 and September/October 2011 indicated an improved appreciation of the adoption of blended methodologies and the application of ePedagogy within the traditional teaching-and-learning environment. These results corroborate the view that an opportunity arises to examine the pedagogical practices, whilst learning to teach online (Riedinger and Rosenberg, 2006). Moreover, these lecturer results correlate with positive student attitudes in 2011, toward accepting change; as 95,1% then indicated that they were familiar with eTools, and moreover that they had benefited from making use of the eTools within the institutional LMS.

This correlates with the fact that the institution should provide eLearning student support and training; it emphasises that the students play a critical role in the application of eLearning practices to the curriculum; and in order to augment positive student attitudes, to dispel their apprehension, and highlight the benefits thereof for them (Vrana, Fragidis, Zafiropoulos and Paschaloudis, Undated).

The adoption of a positive mindset has been hinted by respondents who noted that resilience and patience with online teaching were of paramount importance; and they maintained that acceptance of the

inevitability of technology hinged on [P24] "*our attitude towards learning and developing a mindset that allows [us] to deliver courses in a changing world".*

These results also confirm the "*bottom-up approach of Roger's innovation of diffusion theory*", as deliberated on in Chapter 2, with regard to implementation in complex HE settings: *the take-off stage by a group of innovators*; *the change agents of the next phase of early-adopters*; the third phase of *legitimising the innovation and opening up the potential for the adoption to the early majority*; and the final stage that is *characterised by widespread adoption* (Uys, 2007:238).

Furthermore, these positive and negative attitudes by respondents are in line with the researcher's observation (Chapter 6), that there are many factors, which contribute to the implementation of eLearning in a HEI, as reflected by peoples' perceptions at different times of an eLearning continuum. These contrasting negative and positive mindsets corroborate the complex model of an activity system in a higher education setting, as deliberated on in Chapter 2, highlighting that lecturers function within an intricate system of "*actions, tools, members, rules and a community*" (Lautenbach and van der Westhuizen, 2005:52).

Equally important, the results confirms that those responsible for familiarising educators with online teaching should consider their diverse educational beliefs and the benefits of educational technologies; especially as some educators may achieve specific goals without the use of any technology (Kiraz and Ozdemir, 2006). Respondent [P8] stated it so clearly: *"This is why you will never ever be able to please everybody, because each person has his/her own individual mindset on how they want things done".* Technological change does not guarantee success, but rather how we handle the change determines the success (Allen, 2011).

The questions used in this phase of the case study administered in September 2008 and September/October 2011 further constituted an exercise that enabled the researcher to ascertain the extent to which the university population of educators and students understood the concept and benefits of eLearning. The factors that determine eLearning success that became evident from the responses of the participants are summarised in Table 7.17, and cross-referenced with the relevant literature.

Table 7.17: Themes derived from interviews, phase 3 of the case study

Factors	Corresponding Literature
Awareness of the eLearning strategy and the inevitability of technological change	Breitenbach, Aderibigbe and Muzungu (2005) Lloyd (2012) Tilvawala, Myers and Andrade (2009)
Adoption: Face-to-face vs blended approaches	Holmes and Gardner (2006) Wagner, Hassanein and Head (2008) Govender (2004) Marginson and van der Wende (2006)
Training and support for ePedagogy and content design	Czerniewicz, Ravjee and Mlitwa (2006) Bingimlas (2009) van der Westhuizen; Murdoch and De Bruin (2004) MacPherson; Homan and Wilkinson (2005)
The key role of instructional designers	Govindasamy (2002) Mayes and de Freitas (2004) Alonso, Lopez, Manrique and Vines (2005) Unwin (2008) Kordel (2008)
Training and support for students	Carmody and Berge (2005) Salmon (2004) Fourie and Bothma (2006)
eLearning courses supplement traditional teaching methods	Murphy, Walker and Webb (2001) Lautenbach and van der Westhuizen (2002) Vovides, Sanchez-Alonso, Mitropoulou and Nickmans (2007)
E-Learning and its impact on students' class attendance	Sawyer, 2004
Effective planning linked to time constraints, resources and support	Engelbrecht (2003) Czerniewicz and Brown (2009) Mayedwa, Stoltenkamp and Kasuto (2009)
Need for awareness of the value of online	Salmon (2004)

assessment tools	Iahad (2004) Fresen (2007) Liu, Magjuka and Lee (2008)
Lecturers need to take a hands-on role	Engelbrecht (2003) Boyd and Fresen (2004) Kop and Hill (2008) Liu, Magjuka and Lee (2008) Atherton (2011)
Variables of age, gender, social background, experience and race impact the eLearning journey	Bradach (1996) Salmon (2004) America (2006) Kotter and Schlesinger (2008) Liu, Magjuka and Lee (2008)
Need to be incentivised	Livingston and Robertson (2001) Shannon and Doube (2004) Jackson, Schuler and Werner (2011)
Infrastructure and availability of resources	Mentz and Mentz (2003) Ijab, Anwar and Hamid (2004) Guri-Rosenblit (2005) Hollow and ICWE (2009)

The themes derived from the interviews have highlighted various additional factors, which also impact the implementation of eLearning within a HEI; and have further led to the development of the *Integrated eLearning model*, which is presented and deliberated on in Chapter 8.

7.5 Reflective quantitative evidence: Voluntary lecturer buy-in and student-support

As discussed in the previous phase 2, quantitative evidence was gathered in this phase to illustrate the progressive non-coercive awareness campaign, and to support the qualitative evidence of the success factors of the implementation approach at UWC. During the period of January 2009 – October 2011, individual consultation sessions were continuously offered to lecturers who had attended face-to-face

training, but required further assistance; and were also unable, due to time-constraints, to attend the face-to-face scheduled group training sessions. The UWC staff members were trained on the core functionalities of the eLearning platform; and they were advised on how to use eTools effectively.

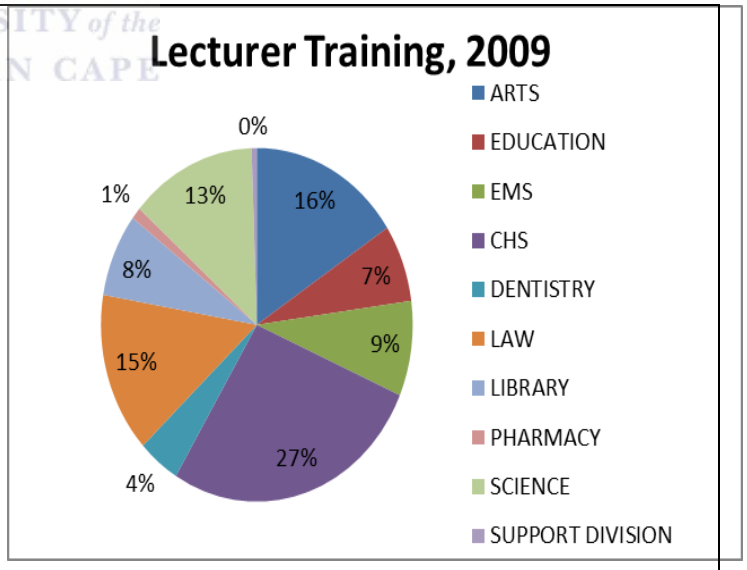
The following quantitative evidence (7.5.1.1-7.5.4) presents the overall number of lecturers who voluntarily contacted the eLearning team for support; and subsequently requested that their students receive training on how to effectively use the eTools for the period, January 2009 – October 2011.

7.5.1 Reflections on lecturer training, 2009

Table 7.18 below reflects the number of staff members (from various faculties and support units) that attended scheduled eLearning face-to-face training sessions; and one-on-one office consultations in 2009. The figure (related pie-chart) is a graphical representation of the relative percentages of the number of staff members who attended the training sessions in 2009.

Table 7.18: Number of lecturers who received training, 2009

	Face-to-face	Consultation
Arts		29
Education	6	7
EMS		16
CHS	21	29
Dentistry		8
Law	6	21
Library	12	2
Pharmacy		2
Science	10	14
Support division		1
	55	**129**



There were increasing numbers of requests for personal one-on-one office consultations. Within the Arts faculty, English and Linguistics lecturers requested training, specifically to place material online for Foundation Programmes, consisting of a large number of students. New CHS lecturers attended the

eLearning staff induction-training programme; and they also requested group training sessions, which would enable lecturers to co-facilitate within an online collaborative course. The librarians needed to become familiar with the LMS, as many students accessed their eLearning courses from computers within the Library.

Statistics lecturers within the Science Faculty expressed a need to become familiar with the online stats tutorial tools. Additionally, they requested to place documents online. There has also been an increased interest by lecturers within the Education faculty to place documents online. An increasing number of lecturers from the Law faculty requested training on how to upload documents; and on how to create online assessments – specifically, the 'uploadable assignment tool'. It should be noted that the Dentistry faculty is a very small faculty. Lecturers in this faculty mainly requested that they need to familiarise themselves with the eTools.

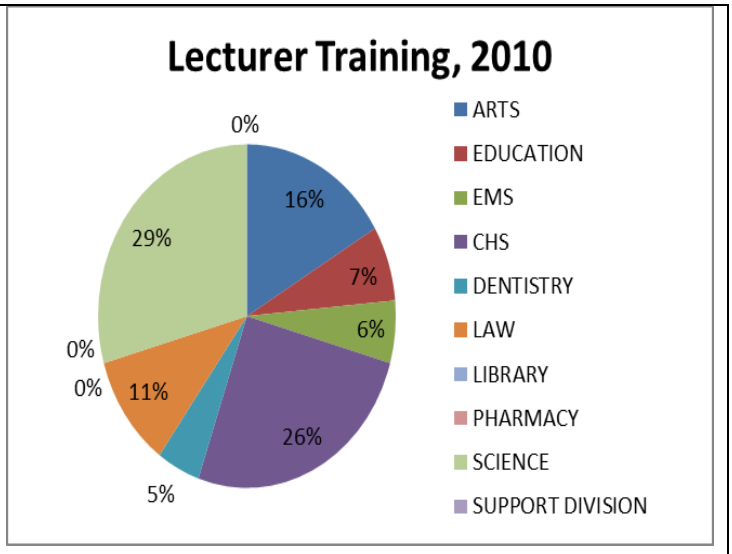
In addition, it should be noted that most of the requests from the EMS faculty (the second-largest faculty within the institution) – were for one-on-one consultations. Lecturers also expressed a need to become more familiar with the use of the eTools; and the creation of online assessments. Lecturers were also assisted with the creation of a collaborative course, example: Oklahoma State University and Utrecht University of Applied Sciences. Hence, lecturers from UWC and co-lecturers from abroad were trained on how to make use of the eTools to supplement a management course. It should also be noted that, at times, staff members from other support units across campus, requested to be familiarised with the eLearning platform.

7.5.2 Reflections on lecturer training, 2010

Table 7.19 reflects the number of staff members (from various faculties and support units) who attended eLearning face-to-face scheduled training sessions; and one-on-one office consultations in 2010. The figure (related pie-chart) is a graphical representation of the relative percentages of the number of staff members who attended training sessions in 2010.

Table 7.19: The number of lecturers who received training, 2010

	Face-to-face	Consultation
Arts		14
Education	1	6
EMS	1	5
CHS	14	22
Dentistry	2	4
Law	9	9
Library		
Pharmacy		
Science	14	25
Support division	2	
	43	**85**



An increasing number of requests from the Science faculty entailed training interventions for the creation of online content; videos to enhance laboratory practicals, and the creation of online multiple-choice questions (MCQs). A Physics lecturer also requested his Master's Programme be broken up into sub-projects (online modules), which were co-facilitated with other colleagues within his department.

Within the Education faculty, there was continuous interest expressed by lecturers to place documents online. A Maths lecturer placed previous examination question papers and template answer online for students to support her face-to-face lectures. Law lecturers requested training interventions for new staff members, and follow-up sessions to improve their eskills. Lecturers from the Dentistry faculty requested re-skilling; placing lecture notes online, and moreover, the need to experiment with discussion forums.

Lecturers within the Arts faculty continued to show an interest in the usage of eTools; and requested to experiment with more eTools – other than placing notes online. Hence, requests for the creation of discussion forums to be used as an assessment tool; and online worksheets (an interactive eTool, which would enable students to answer short questions online).

It should be noted that lecturers from the EMS faculty, who were familiar with the online environment, used their initiative to continue creating more modules online without the personal one-on-one assistance

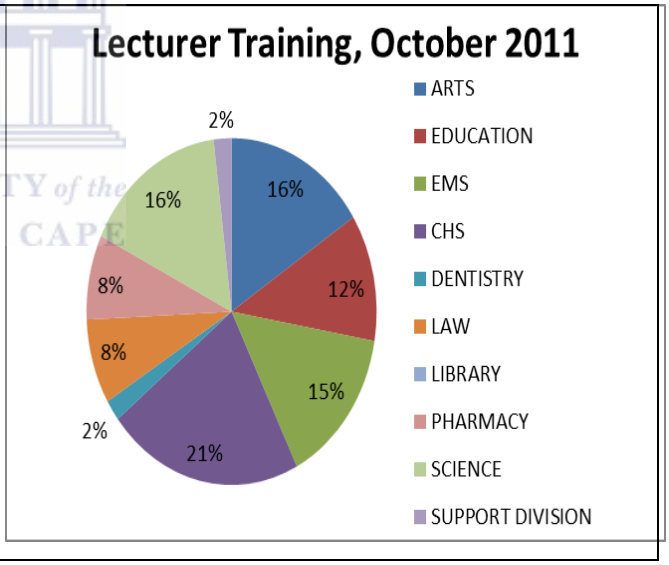
of the eLearning team. However, they continued to request assistance via the telephone. The researcher could deduce from these results that staff members from the EMS faculty expressed a level of self-directed learning. Furthermore, members from the Centre for Student Support Services (CSSS) also requested training, in order to become more familiar with the eLearning platform.

7.5.3 Reflections on lecturer training, 2011

Table 7.20 below reflects the number of staff members (from various faculties and support units) that attended eLearning face-to-face scheduled training sessions, and one-on-one office consultations, in 2011. The figure (related pie-chart) is a graphical representation of the relative percentages of the number of staff members who attended training sessions in 2011.

Table 7.20: Number of lecturers who received training, 2011

	Face-to-face	Consultation
Arts	7	16
Education	1	12
EMS	1	15
CHS	14	22
Dentistry	4	2
Law	0	8
Pharmacy		8
Science	7	16
Support division	8	2
	42	**101**



An increasing number of requests for eLearning training across the campus community might be linked to the fact that students had been requesting their lecturers to create online environments. Students, who visit the eLearning department for assistance, are also surprised to find out that they are not able to access lecture notes, because their lecturers had not created online environments. A lecturer from the Medical-Biosciences department stated: "*[M]y students asked me to place my content online because another*

lecturer within our department has placed lecture notes online". It is apparent from these findings that the benefits of eLearning practices have spread largely by word-of-mouth.

It should also be noted that there is a continuous increase in Education faculty lecturers requesting training and advice related to the usage of online assessment tools. Moreover, even the Deputy-dean of the faculty requested training in advance, for her to be able to plan effectively for online modules for 2012.

The EMS faculty requested training for new lecturers, as well as the creation of collaborative courses, which entails co-facilitation. In addition, lecturers from the Pharmacy department expressed a need for follow-up consultations. It should be noted that a specific lecturer repeatedly requested consultations to enable her to upload lecture notes. Hence, the researcher is able to emphasise the need for a dedicated support team that would be able to repeatedly assist lecturers, even with tasks that might seem too mundane for others. Other lecturers within this department requested podcast training.

Within the CHS faculty (largest faculty within the institution), an increasing number of training requests came from the Nursing and Social-Work lecturers, specifically for the creation of online assessment for formal examination purposes and discussion workgroups. In addition, the CSSS team members requested training for the application of digital components, such as digital stories. Equally important, it should be noted that lecturers from the Statistics department have decided not to make use of the online tutorial tool, as the integration of the tool within the institutional LMS has given them repeated problems.

Tables (7.18 – 7.20) reflect an increasing number of lecturers who have requested office consultations. It should be noted that since the inception of a new blog marketing strategy by the eLearning unit in November 2008, the number of lecturer requests for eLearning consultations has increased significantly. "*An email is sent out to the campus community, relaying noteworthy eLearning initiatives undertaken by educators at UWC. The email, which is duplicated in an online blogging space, includes: a catchy title, the name and department of the lecturer who has adopted eLearning practices, the specific content creation and/or communication and/or assessment eTools, which the lecturer has selected to be of pedagogical value to the online course; and in addition, an example of the actual structured activities and assessment tasks linked to the eTools*" (Stoltenkamp and Kasuto, 2009).

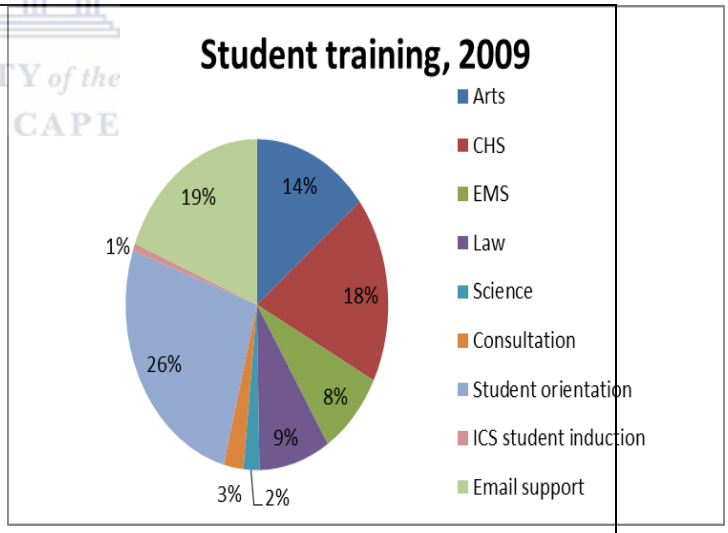
Since then, the eLearning team was mostly approached for personal one-on-one office consultations, in order to discuss the provision of support at the start of the lecturer's eLearning journey. This process encompassed training, the selection of eTools, and discussions about the pedagogical value of the eTools implemented to supplement their traditional face-to-face instruction. The results also reflect the fact that the academic staff seem to prefer personal one-on-one office consultations to group scheduled face-to-face training sessions within a lab environment.

7.5.4 Reflections on student training, Jan 2009 – Oct 2011

Table 7.21 below reflects the number of students (from various faculties and support units) that attended eLearning scheduled training sessions for the period January – December 2009. The figure (related pie-chart) is a graphical representation of the relative percentages of the number of students who attended training sessions in 2009.

Table 7.21: Student training and support, January – December 2009

Faculty	Number of Students
Arts	642
CHS	820
EMS	375
Law	393
Science	88
Consultation	109
Student orientation	1176
ICS student induction	34
Email support	851
Total	**4488**



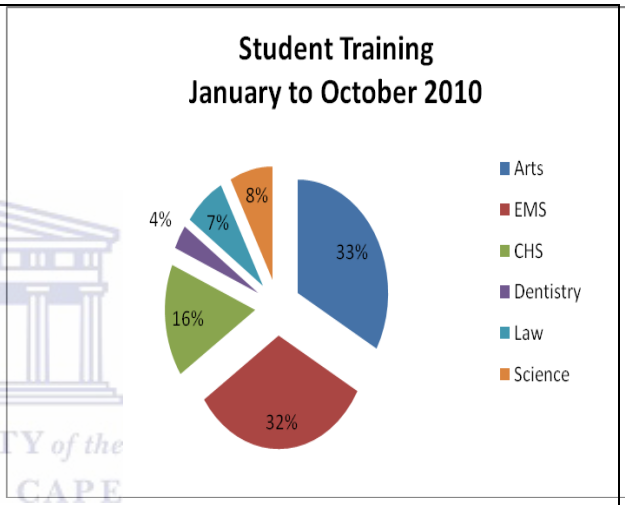
An increasing number of students received training in 2009. When comparing 2008 to 2009 student training numbers below, it is obvious that the first three months of training in 2009 comprise the entire 2008 statistics. This large number can be linked to the student eLearning orientation programme for 1st

year students across all the faculties, and the introduction of an upgraded eLearning platform, currently referred to as the eTeaching platform.

Table 7.22 below reflects the number of students (from various faculties and support units) that attended eLearning scheduled training sessions for the period January – October 2010. The figure (related pie-chart) is a graphical representation of the relative percentages of the number of students who attended training sessions in 2010.

Table 7.22: Student training and support, January – October 2010

Faculty	Number of Students
Arts	1425
EMS	1390
CHS	689
Dentistry	148
Law	317
Science	331
Total	**4300**

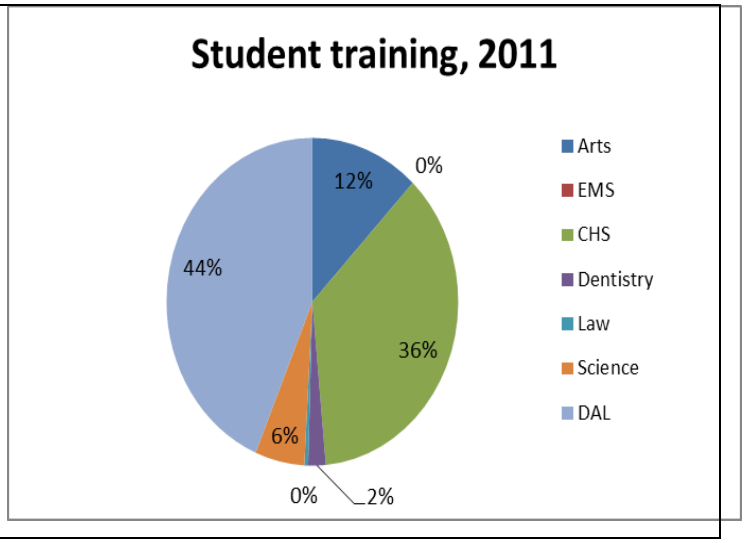


In 2010, student training numbers decreased; as lecturers then preferred eLearning team members to address their students within lecture halls during class times. Dedicated eLearning team members provided eLearning demonstrations focusing on: how to log in to the eLearning platform; navigate the site; select a course; view course documents; how to reply on a discussion topic thread; and how to engage in assessment tools, such as the Multiple Choice Question (MCQ) eTool.

Table 7.23 reflects the number of students (from various faculties and support units) that attended eLearning scheduled training sessions for the period January – October 2011. The figure (related pie-chart) is a graphical representation of the relative percentages of the number of students who attended training sessions in 2011.

Table 7.23: Student training and support, Jan-Oct 2011

Faculty	Number of Students
Arts	375
EMS	0
CHS	1131
Dentistry	60
Law	13
Science	170
DAL	1354
Total	**3103**



It should be noted that the EMS faculty did not request any training for their students in 2011. Notable for this period, a large number of students (from other faculties) – were also trained as part of the eLearning's Digital Academic Literacy (DAL) programme, which focuses on equipping students with ICT skills against the backdrop of the HIV/AIDS content. The students are expected to undertake eskills assessments and tasks, including a self-study time of 10 hours, over the period of a semester. Hence, this student quantitative evidence is indicative of a more consultative process by the eLearning team with faculties which are becoming more aware of the necessity of infused processes, where eLearning skills are not merely viewed as an 'add-on'; but rather as necessary skills needed by students for academic purposes.

7.6 Summary

This chapter has discussed the development of the *Integrated eLearning Model*, and how it facilitates learning within a HEI. It draws conclusions from the data collected via interviews (face-to-face), as well as via questionnaires administered electronically to the respondents. This third phase of the case study reflected on more in-depth interviews and questionnaires with academics and students, highlighting further important factors, which contribute to eLearning implementation in a complex higher education setting. These processes were also supported by the quantitative data retrieved from the natural environment.

The *Integrated eLearning model*, partly based on the empirical data, is presented, discussed and interpreted in the following chapter, chapter 8. This chapter highlights the *integrated factors,* which contribute to *eLearning implementation in a complex higher education environment*.

CHAPTER 8

AN INTEGRATED E-LEARNING MODEL

8.1 Introduction

This study has explored the significant success factors that need to be considered when employing eLearning at a university in a developing country. It was envisaged that a resultant *Integrated eLearning model* would enable eLearning decision-makers and users to optimally implement eLearning for the core business of the institution, namely teaching and learning, in addition to research and community outreach. The implementation of an *Infused ePedagogy model* (phase 2 of the case study) has opened up and revealed significant gaps. These gaps were carefully identified and addressed, which further led to the development of an *Integrated eLearning model* (in phase 3 of this study, Chapter 7) – thereby highlighting the integrated factors which contribute to eLearning implementation in a complex higher educational environment.

This chapter presents the *Integrated eLearning model*, responding to the research objective which reads:

To present an integrated eLearning model for implementation at the University of the Western Cape and possible adoption by other higher education institutions…

8.1.1 Qualitative evidence: Key themes retrieved

From the responses drawn from participants during phases 2 and 3 of the case study, the researcher identified a number of recurring key points, which were converted into themes, as depicted in Table 8.1.

Table 8.1: Key themes retrieved during data-collection phases 2 and 3

THEMES	
Phase 2: (Jan 2007 – August 2008)	**Phase 3: (Sept 2008 – Oct 2011)**
Alignment of the eLearning strategy	Awareness of the eLearning strategy and the inevitability of technological change
Use of and interaction with eTools	Lecturers need to take a hands-on role
Effective use of eTools to promote learning	Training and support for ePedagogy and content design
Integration of eLearning into teaching and learning practices	Adoption: Face-to-face vs blended approaches
Student training on basic applications	Training and support for students
Reaching out to new student populations	eLearning courses supplement traditional teaching methods
Team work, collaboration and coordination of tasks	Effective planning linked to time constraints, resources and support
Introduction of educational technology and convincing resistant academics	The key role of instructional designers
Optimal use of eTools	Need for awareness of the value of online assessment tools
Exposure of large numbers of students to the learning situation	E-Learning and its impact on students' class attendance
Negative perceptions have a devastating effect on overall adoption	Variables of age, gender, social background, experience and race impact the eLearning journey
Reporting satisfaction in relation to interaction	Need to be incentivised
Lack of resources	Infrastructure and availability of resources
Frequent use of eLearning facilities by students and lecturers	
Reliable user-friendly learning technologies	
eLearning exerts pressure on inadequate available resources	

Strong support system and efficient and competent course facilitators	
Clearly defined aims and objectives	
Time constraints for lecturers and eLearning support team	
Dedicated back-end development support	
Availability of an appropriate infrastructure	
Availability, easy adaptability and quality of eLearning facilities	
Attitudes and perceptions at a given time	
E-Learning support	
Marketing eLearning concepts and support	
Leadership commitment and communication	
Aligned support approaches and efforts	

The following sections (8.1.2 – 8.1.5) present a summary of the recurring themes derived from the empirical data; the accumulated data from the supporting quantitative evidence for the period September 2005 to October 2011; and the result of the extensive research study in the form of an *Integrated eLearning model*, as depicted in Figure 8.2.

8.1.2 Qualitative evidence: Emergent recurring themes

Further analysis of the results has highlighted the emergent recurring themes drawn from phases 2 and 3 of the case study; and these are presented in Table 8.2.

Table 8.2:Recurring eLearning themes

RECURRING THEMES
▪ Leadership commitment and communication ▪ Internal marketing of eLearning concepts ▪ Alignment of the eLearning strategy ▪ Effective use of blended eLearning practices to promote learning ▪ Training and support for ePedagogy and content design ▪ Training and support for students ▪ Attitudes and perceptions at a given time ▪ Infrastructure and availability of resources ▪ Aligned support approaches and efforts

The main recurring themes can also be linked to the discussion on the strengths and areas of further development of the eLearning Strategy document (phase 2 of the case study): the emphasis on integrating computer literacies for students; the involvement of academic staff in the development of eLearning implementation; the aligning of academic computer literacy development to staff promotion criteria; the establishment of partnerships within UWC and with other institutions.

Furthermore, there were areas for further development in the strategy that could be directly linked to the recurring themes: there were no set targets for infrastructural development; no clear stipulation of the dire need for dedicated back-end support and the maintenance of a home-grown open-source eLearning platform; and moreover no acknowledgement of the necessary approaches and intentions for an integrated eLearning support team.

Furthermore, the main recurring themes indicate that eLearning success can be measured by *the scale and quality of learning interactions among students and between students and lecturers*; the institution's ability to provide a stable eLearning platform, and the *required functionality and user-support*; the availability of appropriate resources related to eLearning marketing strategies, in order for the institutional community to see the benefits of adopting eLearning practices; and the integral eLearning

support team, which should entail efficient and competent course facilitators who could influence the mindset and attitudes of academics (working within time constraints and having no online tutors) – to enable the use of eTools to effectively promote learning. This eLearning support team is, in turn, dependent on the necessary technological resources; sound, stable infrastructure; and co-ordinated processes and approaches between the technical issues and the eLearning platform development team.

8.1.3 Supporting quantitative evidence: Accumulative results (Sept 2005 – Oct 2011)

8.1.3.1 *Lecturers who voluntarily contacted the eLearning team for training*

Table 8.3 reflects the accumulative number of lecturers for the period September 2005 to October 2011. These lecturers approached the eLearning support team for scheduled eLearning training sessions within a lab environment and/or for personal one-on-one office consultations.

Table 8.3: Accumulative number of lecturers who adopted eLearning practices for the period September 2005 – October 2011

Year	Face-to-face scheduled training	One-on-one office consultation
2005	89	53
2006	73	63
2007	26	60
2008	21	63
2009	55	129
2010	43	85
2011	30	86
Total	**337**	**539**
Combined Total	**876**	

From the inception of the eLearning unit in September 2005, the eLearning support team consistently communicated with the campus community, inviting all interested parties to eLearning training workshops. Table 8.3 above depicts the number of lecturers (876), who voluntarily contacted the eLearning support team during the period September 2005 to October 2011 – requesting to join face-to-face scheduled training sessions, and/or one-on-one office consultations. These lecturers were advised on the use of eTools to supplement their face-to-face traditional instruction method.

8.1.3.2 *E-Learning student training*

Table 8.4 reflects the accumulated number of students – for the period January 2006 to October 2011 – who received eLearning training from the eLearning team on request by lecturers within the various faculties.

Table 8.4: Accumulated number of students who received eLearning training and support, Jan 2006-October 2011

Year	Face-to-face scheduled training	Demonstrations	Support	Invigilation
2006	2259			
2007	4018			
2008	3235			
2009	3637			
2010	4300	19	341	256
2011	2997	20	215	
Total	**20446**	**39**	**556**	**256**
Grand Total	**20456**			

It should be noted that there was a decline in the number of requests for scheduled training sessions in 2011. As an increasing number of lecturers have become more familiar with the eTools, they prefer to give demonstrations on how to access and submit assessment tasks online – within their specific lecture times. This situation is more practical, as there are not enough computer lab facilities for all the scheduled student training requests. It should also be noted that some lecturers requested assistance (invigilation) – from the eLearning team during online assessment/examination periods.

8.1.3.3 *Lecturer and student training and the number of online courses (2005-2011)*

Table 8.5 reflects the accumulated number of lecturer-and-student training sessions, as well as the number of blended online courses within the institutional Learning Management System (LMS) for the period, September 2005 to October 2011.

Table 8.5: Lecturer and student training and support over 5 yrs (September 2005 – October 2011)

Target Audience	Phase1 (2005-2006)	Phase 2 (2007-2008)	Phase 3 (2009-2011)	Total (Sept 2005-Oct 2011)	Growth over 5 years
Lecturer Training & Support	278	170	428	876	54.0%
Student Training & Support	2259	7253	10934	20446	384.0%
Number of Courses	203	385	775	1160	281.8%

From Table 8.5 above, it is evident that the increase in the training of lecturers (54%) and students (384%) led to a remarkable increase in online courses of 281.8% over a period of 5 years.

8.1.3.4 *The usage of eTools to supplement teaching-and-learning practices*

Tables 8.6 and 8.7 are reflective of the various eTools used in eLearning courses over a period of five years within the institutional LMS (September 2005 – October 2011).

Table 8.6: The number of eTools used for teaching-and-learning activities (Sept 2005 – Oct 2010)

eTools	2005	2006	2007	2008	2009	2010	Growth
Course documents	33	92	96	76	150	213	545.5%
Content pages		204	86	58	65	123	-39.7%
Discussion Forum	38	38	60		13	13	-65.8%
Workgroups	-	-	-	-	5	8	60.0%
Announcement	-	-	-	-	-	20	-
Calendar	-	-	-	-	28	34	21.4%
Assignments	19	79	11	12	15	30	57.9%
Multiple Choice Questions	18	75	15	13	16	22	22.2%
Essays	9	38	8	6	3	4	-55.6%
Online Worksheets	1	28	11	13	15	16	1500.0%

Problem-based learning	15	-	-	-	-	0	-100.0%
Rubrics		77	-	-	7	11	-85.7%
Interactive Tutorials	-	-	-	-		1	-
Statistics Tutorials	-	-	-	-	3	4	33.3%
Total Courses	**100**	**303**	**689**	**753**	**1061**	**1113**	1013.0%

The above table indicates the increasing numbers of lecturers who make use of the LMS to upload notes for students before or after the scheduled face-to-face lecture. Some lecturers prefer only to upload PowerPoint slides, which include the main concepts, as they feel that students should continue to attend traditional lectures. Course content is also linked to related articles, external resources and extra learning material.

At the inception of the scheduled lecturer training sessions, lecturers were very eager to experiment with the rubric tool. Recent results are indicative of only the Master's in Social Work Programme, which makes effective use of the rubric tool.

The Statistics department requested the integration of an offline stats tutorial tool to be merged into the institutional LMS. However, the developer of this tool resigned; and the tool was not maintained thereafter. The same situation applies to the problem-based tool.

The workgroup tool is effectively being used by Social Work lecturers and the English department as a Foundation course. It should be noted that the tool was not deemed viable for the Master's in Law course; however, it is being used effectively for a Master's in Social Work course, where students are divided into peer-mentoring groups.

There has been a decline in the usage of the discussion forum tool, as lecturers state that they do not have time to engage in online discussions with large classes. The discussion forum tool is also being used effectively for the Master's in Social Work; this comprises a smaller group of students. Equally important, it should be noted that the discussion forum is also being utilised for a large group of students in the English department.

The announcement tool is popular, as it is linked to the institutional email system, often also linked to students' mobile phones. It should also be highlighted that lecturers have become very despondent with continuous internet connectivity challenges; and in turn, students are not able to submit their assignments within the assignment tool. This also applies to the submission of Multiple Choice Questions (MCQs), as the students repeatedly receive connection error messages, whilst trying to submit online assessment tasks. Despite these challenges, the tool has become very popular, as the system instantly grades the student, and is able to randomise a bank of questions.

It should be noted that the statistics presented in Table 8.6 were manually retrieved from the LMS, since the results could not be automated. By 2010, lecturers had not migrated to the upgraded Chisimba platform (Kewl 3.0).

Table 8.7 below is indicative of the number of online courses making use of various eTools in 2011 on the new upgraded LMS, Kewl 3.0. More importantly, it should be noted that the statistics presented in the table below were not retrieved manually, but the retrieval from the upgraded eLearning platform was automated in 2011.

Table 8.7: Number of courses making use of the selected eTools in 2011

eTool	Number of courses making use of the selected eTool
Announcement	597
Assignment	439
Calendar	461
Context content	923
Dictionary	90
Essay	130
FAQ	78
File Manager	931
Discussion forum	362
Glossary	127
Grade-book	72
MCQ tests	210
Rubric	151
Stats tutorial	30
Tutorials	70
Wiki	95
Workgroup	156
Worksheet	149

The results above are indicative of the specific eTools selected by the lecturer during 2011, whilst creating online courses within the institutional eLearning platform. Lecturers showed a great interest in experimenting with and viewing the new upgraded eLearning platform. Hence, the results indicate an increased usage of eTools within the new eLearning platform, compared to 2010.

Major events have taken place since the establishment of the eLearning Development and Support Unit (EDSU). These have been highlighted in the previous phases of this case study. *Phase 1* (September 2005 - December 2006) entailed a widespread eLearning awareness campaign; and the quantitative measures are indicative of an eLearning support team and those lecturers who were willing to participate in the continuous awareness processes.

Phase 2 (January 2007 – August 2008) reflects a decrease in lecturer training and an increase in student training, as well as the number of courses created online to supplement teaching-and-learning practices. Lecturers created their own eLearning courses, as they became more familiar with the usage of the eTools. Moreover, they wanted to ensure that their students were able to engage with their online courses. Surprisingly, lecturers continued to show an interest in eLearning practices – even though this phase entailed the migrating of users to a new version of the eLearning platform.

Phase 3 (September 2008 - October 2011) is indicative of increased lecturer and student training across the various faculties; and a large number of online courses for teaching-and-learning purposes. This phase included a blog-marketing campaign, which highlighted eLearning adoption, as well as lecturers from various faculties and the outcomes which they endeavoured to achieve. An increased number of eLearning practices led to an increased demand for eLearning support through one-on-one office consultations, email and telephonic services. These results are also indicative of lecturers who took ownership; and increasingly created their own online environments, sometimes up to seven modules.

The drive by the eLearning team for blended teaching-and-learning practices gave rise to an increased number of collaborative online courses, as well as postgraduate online courses. Moreover, the quantitative results are indicative of 38% of the academics who had voluntarily adopted eLearning practices across all the faculties in the institution by October 2011.

The usage of specific eTools by lecturers for teaching-and-learning practices reflects an increased preference for the content-development tools. However, despite the eLearning team's continuous awareness of the discussion forum as a sound communication and assessment tool, a decrease in usage is reflected. Lecturers are engaged in the teaching of large classes, and they frequently feel daunted by the administration and monitoring of the discussion topics. Hence, they express the need for online tutor assistance.

8.1.4 Current institutional eLearning practices corroborate the literature

The study provided important evidence from the data gathered with regard to the current eLearning practices within the researched institution. It became evident that the empirical data regarding the current eLearning practices within the researched institution in many instances correspond with the "best practices" found in the reviewed literature.

The literature reviewed in Phase 2 of this study highlights the necessary changes of communication and assessment methodologies, the roles of lecturers and students, and the investment in staff development and support processes. An increased appreciation of the need to apply ePedagogy and increased adoption can be linked to the results in the Phase 1 of this study, namely: the development of an *Online Course Creation model*, which focuses on pedagogical principles for a blended teaching-and-learning approach.

Academics increasingly seek advice regarding the use of eTools through one-on-one consultations, indicative of the results of an eLearning awareness campaign and a non-coercive implementation approach, as highlighted in phase 1 of the case-study. Consequently, as academics become more familiar and comfortable with the eTools, they are able to focus more on ePedagogy.

Academics at UWC, the researched institution, are closely supported by the Instructional Design team. This observation corroborates with the literature in Phase 2, and is indicative of the need to create and support suitable programmes, linked to the pedagogical adjustments, which need to be made by the eLearning support team. This is further related to the finding of increasing student support in terms of

computer literacy and eTools, aligned to the data retrieved from the institutional eLearning strategy document. Hence, the need for the students to have the necessary *skills, attitudes and resources,* in order for them to become self-directed learners is highlighted.

The evidence of increased formal leadership support and eLearning change management strategies can be aligned to the analysis of the eLearning strategy document, which highlights the need for the acknowledgement of necessary implementation approaches and interventions for the successful implementation of eLearning within a HEI.

Recent examination of the implementation of integrated teaching-and-learning strategies (which infuse technology), and the goals of the Institutional Operational Plan of the University of the Western Cape (IOP 2010-2014) can be aligned to the Phase 2 of the case study. This resulted in the development of an *Infused ePedagogy model* that highlighted the alignment of the eLearning strategy to teaching-and-learning and assessment strategies. Moreover, these recent institutional practices are indicative of a changing organisational culture.

8.2 *An Integrated eLearning model*

The analysis of the collected data (Chapter 7, phase 3 of the case study) emphasised certain gaps in the *Infused ePedagogy model* (Phase 2). This resulted in the eventual development of the *Integrated eLearning Model* (Figure 8.2), which is presented as the final product of this study. This *Integrated eLearning model* depicts the important factors that contribute to the successful eLearning implementation in a complex higher education setting, such as the empirical setting of this study.

This section will make the *Integrated eLearning model* (Fig.8.2) explicit – encompassing people-development processes and organisational issues, as well as the use and integration of ICTs within a HEI to enhance the core business of the institution (teaching-and-learning, research, and community outreach). The researcher includes academic and non-academic support and development as being issues that are keys to the core business of the university. However, highlighting the core business only is not

enough, since the *Integrated eLearning model* suggests, as Badat (2004:41) states: *"[R]obust, useful and creative planning that contributes to the system…"*.

The factors that contribute to the successful implementation of eLearning, and ultimately to a ***changing organisational culture***, here seen as elements of the *Integrated eLearning model* (Figure 8.2), have a direct origin in the analysis of the data collected in phases 1-3 of the case study, as well as the literature study; and are discussed below in a non-linear, integrated manner.

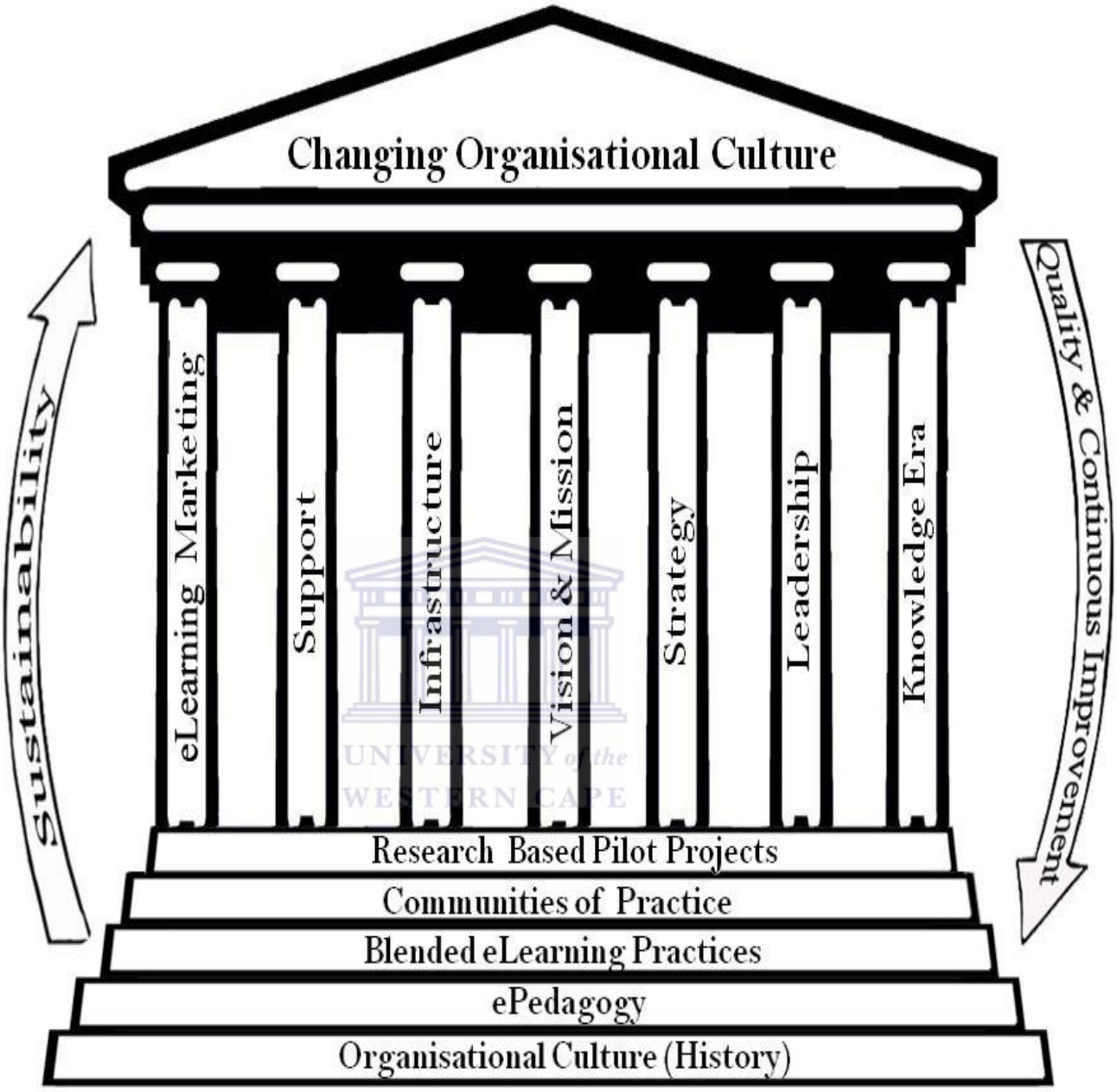


Figure 8.1: An Integrated eLearning model

The integrated eLearning factors illustrated in Figure 8.1, are:

- E-Learning initiatives aligned to a changing organisational culture
- *E-Pedagogy skills aligned to the creation of interactive, supportive online environments*
- Blended eLearning practices aligned to the pedagogical value of eTools
- Online communities of practices in an ever-changing 'borderless world'
- Joint ownership of research-based pilot projects
- Innovative marketing of eLearning practices
- E-Learning support and a responsibility toward evolving organic processes
- Infrastructure and resources: More than access to computers and information skills
- E-Learning alignment with the vision and mission of the institution
- Strategic alignment for the infusion of technology
- The importance of leadership
- Contribution to the knowledge era, as innovative leaders and researchers
- Reviewed sustainability and quality assurance approaches

These eLearning success factors will now be discussed in greater detail.

8.2.1 E-Learning initiatives aligned to a changing organisational culture

Any (new) eLearning initiative and implementation has to take the history and organisational culture of the organisation into consideration, in order for the initiative to be successful. The establishment of an eLearning centre within a HEI has to contribute to a changing organisational culture, by providing *"…leadership to support policy development,[and] enhancing research and [the] implementation of change…"* (UNESCO, 2012:1). Moreover, eLearning initiatives in an institution should be aligned to a ***changing organisational culture*** in a dynamic society. In the case of UWC, research results are indicative of an institution which has taken advantage of the internet, and acknowledged that teaching-and-learning, and research are not restricted to physical spaces.

Furthermore, a changing organisational culture would be indicative *"…of clear structure, openness to new ideas, and commitment to high quality courseware…[in order to]…meet the need[s] of our students*

and prepare them for the careers in today's high-tech workforce" (Leacock, 2005:355). In the case of UWC, current eLearning initiatives are aligned to a changing organisational culture, aligned to its mission statement in terms of responding in "*…critical and creative ways to the needs of a society in transition…".* Equally important, increasing evidence of the adoption of educational technologies within an institution, eventually leads to a changing organisational culture, which strives, as stated by Melody (2002:7), to rid South Africans of the '*dependency syndrome*', and endeavouring to position itself as an '*equal partner*' in the ICT knowledge economy.

8.2.2 E-Pedagogy skills aligned to the creation of interactive, supportive online environments

Academics need to embrace a positive attitude to the ***adoption of ePedagogy skills*** as a prerequisite for the implementation of eLearning practices. Hence, lecturers need to adopt a *"… learning design that incorporates educational quality, values and effectiveness of teaching, learning and assessment activities supported by technology"* (Wright, 2004). Furthermore, recent research advocates that innovative methods of teaching and learning are rising through the *"…use of online networks, access to remote experts and, more recently, mobile technologies"* (Wright, 2004).

This is in line with the claim by Lim and Chai (2008:808) who stated that there will be no change in the manner that educators use technology, if there is no change in their pedagogical paradigms. The researcher has highlighted the development of an eLearning programme, based on sound ePedagogy, to ensure that academics create interactive, supportive online courses.

8.2.3 Blended eLearning practices aligned to the pedagogical value of eTools

Increasing ***blended eLearning practices across faculties*** within an institution are indicative of a changing organisational culture. Moreover, these innovative practices include the decisions and strategies that educators have to apply when making use of the eTools for teaching. These are referred to as the processes of ePedagogy (Beacham, 2011: 5). Furthermore, the application of ePedagogy processes to blended practices must be aligned to the earlier work of Nortar, Wilson and Montgomery (2005:24). This

work highlights that educators still have to be clear about their teaching content, the needs of the students, and the methodologies that enable effective learning, regardless of geographical space.

In the case of UWC, there is an indication of increasing voluntary adoption of blended eLearning practices by academics aligned to thought processes regarding the pedagogical value and effective use of various eTools to supplement teaching practices. However, the situation is – as stated by Nortar, Wilson and Montgomery (2005:24) – that the model for teaching has not altered much, even though there are now many eLearning tools available.

8.2.4 Online communities of practices in an ever-changing 'borderless world'

O***nline collaborative courses and communities of practice*** are vital for the institution, because – as Till (2003:5) highlights – current increasing student numbers; the subsequent declining qualified educator numbers; and the call for the responsibility of the social and economic roles of higher education institutions, have forced them towards the *"…successful, self-sustaining client- oriented providers of education in a rapidly changing borderless education world*".

Furthermore, online courses should be viewed as communities of practice. In this case, these communities of practice enable the institution to 'live its mission', since it claims to: *nurture and use the abilities of all in the university community*. Recent eLearning practices at UWC present online collaborative projects which open boundaries through eTools, such as discussion forums and workgroups. Students across countries, namely Israel, Uganda, Kenya, USA, Jamaica, Finland and Netherlands were able to engage in online courses with UWC students.

This relates to the work of Pallof and Pratt (2005:1), which shows that social presence is an important component of the online community, and one that is vital for collaborative tasks. Moreover, that the *"community is the vehicle through which online courses are most effectively delivered, regardless of content".*

8.2.5 Joint ownership of research-based pilot projects

Collaborative research projects could ensure future sustainable professional development programmes, as they draw from the educators' professional expertise and promote peer learning – as these educators and other stakeholders of similar interests can together reflect on the joint project (Hennessy, Harrison and Wamakote, 2010). Furthermore, collaborative eLearning projects can lead to the *"…development of a network, linking educational research...and add to the menu available to other institutions"* (McClelland, 2011:18 & 53). Thus, an eLearning support department should be viewed as a unit that is also able to engage in research: specifically, ***joint action research eLearning projects***, including lecturers, eLearning team members, staff members from other academic support groups, and online tutors.

In the case of UWC, the eLearning department has recently established a research partnership with the IS Department in the EMS Faculty. Joint research is undertaken on Honours, Master's and PhD levels. The relationship will stimulate an innovative culture. Moreover, it will contribute to the benefits of eLearning and m-Learning (mobile learning) for the institution, the community and business. Abrahams and Melody (2005:8) highlight the fact that efforts in the US, in terms of research funding, the creation of research parks to support the link between university and corporate researchers, and the support of doctoral training programmes has produced many stories of accomplishment.

However, they are only linked to a few leading research universities. This is true for the South African HE sector as well. Nevertheless, the eLearning research partnership with the IS Department should in the future contribute to some success stories for South Africa.

8.2.6 Innovative marketing of eLearning practices

Innovative eLearning marketing practices can increase eLearning adoption. It can ensure that "*upward feedback occurs to stakeholders*", and that the eLearning champions and others *"…remain convinced of the success and value..."* of eLearning initiatives (Applebee and Veness, 2006:20). In addition, eLearning marketing should also enable the institution to identify the *"…distinctive contribution e-learning*

makes…", as students face many challenges – including *"…personal, social and institutional variables"* – which impact their learning experiences (Harris *et al.*, 2004:15).

At the University of the Western Cape, an eLearning blog-marketing campaign, initiated on 11 November 2009, has enabled the eLearning department to market eLearning practices adopted by lecturers with the assistance of the eLearning team. This also includes the use of communication and assessment eTools, in addition to digital media – to enhance the existing content.

On the one hand, major institutional events and announcements at UWC are disseminated to the campus community via email. This is still the accepted practice of communication. On the other hand, communicating and sharing through blogs has become a new means of communication. In order for the user to view a snapshot of the structured online course and the assessment task, he/she is enticed to click on a link within an email. This leads directly to the blog within the eLearning system. Hence, the reader/user now finds herself/himself in a new communication space: the blog tool.

The content of the email is repeated within the blog; however, the reader is only able to view the real-life eLearning activity that was created by a fellow UWC academic and colleague within the blog. The reader also gets a glimpse of the layout and look-and-feel of the institutional LMS; and moreover, is then also able to comment on the specific blog.

The blog tool is furthermore used by the eLearning team as an internal communication and marketing strategy. This also exposes the institution's eLearning practices to the global village – as the blog is an internet-based communication tool. It is envisaged that this marketing approach could further enable a community of practice, as there is currently a link from the institutional website, directly to the blogs within the eLearning system. Global readers are exposed to the institution's use of innovative tools; and they are also encouraged to share their best practices, to respond, and to comment on the blogs.

This communication blog tool within the eLearning system enables the institution to share knowledge within a community of practice; hence, as Houghton and Sheehan (2000:13) stated: "The benefits of knowledge can be used repeatedly, and the return on investment is in the dissemination of knowledge".

Consequently, the eLearning marketing strategy reflects an institution consisting of academics and professionals, who offer services, that are – as Dowling and Seepe (2004:186) state – "*socially relevant, and that place an emphasis on skills and vocational training*".

8.2.7 E-Learning support and the responsibility towards evolving organic processes

E-Learning places new burdens and challenges on the support facilities of HEIs, as they embark on infusing educational technologies into their traditional classrooms: to create blended courses, and to deliver distance learning material (Baker, Boggs and Arabasz, 2003:2). Subsequently, staff training and development responsibilities should lead to implementation and support strategies and approaches, lessons learnt and best practices. This corroborates the work of Le Grange, Greyling and Kok (2006:87), which states that it is imperative that lecturers and institutions of learning, going through changes, should focus on lifelong learning, and emphasise the need for staff development.

Moreover, it is also important that policies and procedures that "*support those who have to support*" the academics, should be put into place, in order to augment teaching and learning processes.

The eLearning department at UWC ***supports all eLearning users across all faculties*** and other support units. In addition, the eLearning department also offers ICT skills training and support to the campus community (academic and administrative staff). Scheduled face-to-face training sessions are intended to enable the creative application of ICTs into daily teaching-and-learning processes, research, community engagement, in addition to the efficient execution of administrative duties. These responsibilities have not been imposed on the department, but are due to an organic process, which has unfolded, according to the needs of the staff in the institution.

This evidence corroborates the work of Duhaney (2005:10-11), who highlighted the fact that access and equity should not be addressed merely as quantitative terms, referring only to the number of available computers, but should also consider the effective use of the educational technologies, as well as the quality of the training offered to academics to enable them to successfully incorporate a "*variety of technologies into their pedagogical activities*". Subsequently, there has been a steep increase in the

demand for ICT skills and Marks-Administration-System (MAS) training over the past three years (2007-2009) at the University of the Western Cape.

The institution has also recently purchased a three-year campus licence for the anti-plagiarism tool, Turnitin (Tii). The eLearning team prepared an institutional roll-out plan (September/October 2009). This included infrastructural and front-end user processes. This evidence corroborates the claim of the institutional mission statement, to "*encourage and provide opportunities for lifelong learning through programmes and courses*". The evidence also links to the results of the awareness campaign (phase 1 of the case study), whereby the eLearning team aimed to be perceived by the campus community as an established, reliable and competent unit.

8.2.8 Infrastructure and resources: More than access to computers and information skills

Access to a stable, robust Learning Management System (LMS) is important; and moreover, related to ***infrastructural network*** and load issues. On the one hand, issues of accessibility to relevant resources, such as computers, laboratories and equipped teaching venues are vital. However, the issue of access should also be discussed in terms of – as Fourie and Bothma (2006:469) state – knowledge-building and sharing within communities of practices that will enable us to *bridge the digital divide*. More importantly, it is vital to highlight the fact that the digital divide does not only involve ICT access and information skills; rather it requires *"individual commitment; group work; and intellectual and academic support from the institution [that] might contribute to bringing people to higher levels of knowledge generation and communication"* (Fourie and Bothma, 2006:469).

Govindasamy (2002:298) – as highlighted in Chapter 2 – states that the necessary resource management tools to administer the face-to-face hardware and software issues are essential; and if lacking, no institution can possibly implement eLearning fully.

8.2.9 E-Learning alignment with the vision and mission of the institution

The earlier work of Hanna (2000:28), as cited in Jones and O'Shea (2004:387), noted that as a result of the introduction and implementation of eLearning, "…*fundamental changes are occurring within higher education institutions; and the success of these change processes depends both on the organisation's ability to undergo a significant shift in values, vision and direction and on the ability of stakeholders to understand and accept a new conceptualism of the organisation*".

Subsequently, recent eLearning developments in the institution emphasise the importance of integrated strategies for effective online teaching-and-learning, in order for eLearning to become an integral part of the curriculum design across all academic and non-academic programmes at the institution. It is important that eLearning should be ***aligned to the vision and mission of the institution***.

Furthermore, the eLearning Manager at UWC has emphasised the need for integrated strategies within the working task teams of the Institutional Operational Planning (2010-2014), which recently gave rise to a Strategic Teaching and Learning Plan for UWC that has established eLearning as one of the core strategic elements. This should ensure that effective integrated eLearning practices are emphasised on various forums – not merely for the adoption in silos and as mere 'add-ons' by academics.

8.2.10 Strategic alignment for the infusion of technology

The ***eLearning Strategic Plan*** of the institution should be ***aligned to the Strategic Plan for Teaching and Learning***. Zemsky and Massy (2004) emphasised that the early hopes that eLearning would transform education have given way to a more realistic approach. A realistic infusion approach would clearly relate to the fact that, while innovators and early adopters are likely to initially accept relatively high levels of risk, even their continuing use of eLearning requires a multi-stakeholder, strategic commitment at the highest levels (Holt, Rice, Smissen and Bowly, 2001; Zemsky and Massy, 2004; Moser, 2006). Consequently, it is vital that there be an infusion of the eLearning Strategic Plan and the Strategic Teaching and Learning Plan into an institution. Furthermore, infusion indicates that stakeholders across the institution realise that they should plan collaboratively towards an institution that

offers quality support and sustains development, whilst simultaneously experiencing changes in systems and practices of delivery.

Currently at UWC, the Strategic Plan for Teaching and Learning highlights the goals of the Institutional Operational Plan (IOP, 2010-2014) and provides a strategic plan for teaching and learning in the institution over the next five years. The current IOP highlights the infusion of technology into teaching and learning, and the promotion of the use of ePedagogy: *Improved and innovative teaching and learning through the use of Information and Communication Technologies (ICTs)* – which is already in process through the work of the eLearning Development and Support Unit (EDSU) at UWC, but merely needs to be promoted.

In addition, this alignment of strategic plans within the institution promotes formal professional development, such as ePedagogy, to improve teaching and learning with ICTs amongst UWC staff. The promotion of ePedagogy; and the familiarisation and socialisation of the use of eTools for both lecturers and students, could be further developed through regional and national co-operation. Equally important, the alignment of strategies would encourage research into innovative teaching and learning, as well as the development of curricula, which promote student-centred, flexible learning and evaluations.

8.2.11 The importance of leadership

*"**Sound leadership and good management practice**"* are vital for the successful implementation of eLearning (LaBonte, 2006:60). As complex HEIs are inherently resistant to change, and – as highlighted by Jones and O'Shea (2004:384) – in order for significant change to occur, it is imperative that there should be support from the "*strategic apex*" of the institution. HEIs need to progress toward an educational setting inclusive of the adoption of optimistic attitudes, supportive policies and motivating leadership (Loreman, 2007). Moreover, a holistic eLearning project leadership is emerging, which affords "*new insight into fundamental assumptions about change, control, order, organisations, [and] people…*" (LaBonte, 2006:60).

Progressively, current experiences within the institution are indicative of supportive leadership for eLearning initiatives. In addition, in this case, the researcher also refers to the UWC eLearning support

staff as leaders – especially in terms of initiating various change management strategies, in order to achieve eLearning adoption from all stakeholders across the institution, especially the academics.

8.2.12 Contribution to the knowledge era as innovative leaders and researchers

Continuous research in niche areas of eLearning should be an integral part of the institution; hence, facilities should therefore be made available for the promotion of such research and ultimately, the ***institution's contribution to the knowledge era***. Subsequently, researchers in the field of educational technology should start to look further than just the interim objectives of individual research initiatives; and they "*…must realise the transformational potential of their profession…[and] should be concerned with examining the technological process as it unfolds in schools and universities and its relationship to the larger society*" (Amiel and Reeves, 2008: 37).

An active research agenda should not only be considered, in order to know how to implement educational technologies, but also to recognise key principles, to promote best practices; and moreover, to acknowledge what succeeds (Alliston, 2007:13). E-Learning practices at UWC indicate large-scale podcast initiatives for students at UWC, which are amongst the first at South African universities. This renders UWC amongst the pioneers and leaders in exploring the pedagogical value of the use of podcasts, in order to enhance student-learning processes.

As pioneers within the South African higher education context, it is the eLearning department that needs to set the trend and provide valuable lessons of experience through research.

In addition, there is a need for HEIs to embark on research that will enable sustainability, such as, "*comprehensive high-quality research studies to evaluate the processes, outcomes and impacts of practice-based inter-professional collaborative learning initiatives*" (Reeves *et al*., Undated:5).

Recently, the eLearning department at UWC designed a new Digital Inclusion: eCentre Manager Programme, targeted at eCentre managers within various communities in the Western and Northern Cape. This blended programme has been developed and facilitated by the eLearning department – in terms of the digitisation and localisation of learning material, as well as the delivery and facilitation of interactive

face-to-face and online activities. This new innovative blended programme has enabled linkages with industry, business, civil society and other higher education institutions. These types of collaborative eSkills projects are in line with Chetty (2005:22), who stated that they lead to the establishment of organised interactions that cultivate and encourage partnerships.

Moreover, these innovative collaborative projects move EDSU, and ultimately, the institution into a sphere where the support team is not only known as the implementers and drivers of blended eLearning initiatives, but also as researchers, who are aware – as Abrahams and Melody (2005:7) state – that *"South African higher education institutions are tasked with the regeneration of the nation's knowledge base through their teaching and research missions; with the generation of new knowledge through their research (and innovation) missions; and with contributing to community and social development through their community-engagement missions".*

As has been indicated (in Chapter 3), the University of the Western Cape has developed a home-grown Open Source eLearning system to support the design and development of online courses and teaching-and-learning materials. The communication, content creation and assessment eTools of the eLearning system enable the institution to engage in Communities of Practice (COPs). Knowledge is shared and consumed within these communities of practice. Houghton and Sheehan (2000:13) stated that the benefits of knowledge can be used repeatedly; thus, the return on investment is in the dissemination of knowledge.

Moreover, the development of the Open Source eLearning platform is linked to the African Virtual Open Initiative and Resources (AVOIR) Network, whereby developers across sixteen (16) institutions in Africa, North America, Europe, Kabul, and Afghanistan can contribute to the development of the software. The development of the system has entailed collaboration with developers in other African universities (AVOIR); and moreover, how this leads to individual research, collaborative research with other national and international HEIs, and research linked to industry needs. Thus, such systems can be viewed – as Houghton and Sheehan (2000:12) have highlighted it – as systems, which *"consist of flows, and relationships, which exist among industry, government and academia in the development of science and technology".*

8.2.13 Reviewed sustainability and quality-assurance approaches

Due to the nature and departmentalisation of higher education, ***sustainability approaches*** that entail cultivating working relationships with departments that deal with academic student support need to be made. In the case of UWC, these relationships ensure the implementation of student work-place internship programmes, whereby students are mentored and engage actively in daily eLearning operations. It also serves as a cost-effective way of supporting and sustaining an eLearning unit. In addition, the importance of ***continuous quality-assurance processes*** related to eLearning content and ePedagogy will enable an eLearning support team to contribute to the quality-assurance systems of the broader HE education system.

In addition, it should further enable the institution to apply methodologies and guidelines for the development of eLearning best practices in the institution.

Consequently, at UWC, these relationships have recently extended to partnerships with the Student Enrolment Management Unit (SEMU), the Library, the Centre for Student Support Services (CSSS), the institutional Convocation, and even Campus Control – enabling them to make use of the expertise of the eLearning team to market their specific services and the institution, using various digital media tools and social networks. This is in line with documented research, which highlights that eLearning teams in HE settings may operate across departments within the institution or assist academics on specific projects (Lucas, 2006:479).

Moreover, these relationships confirm the work of Lucas (2006:479), which highlights smart implementation approaches that emphasise the importance of the academic organisational culture; and the work of Holt and others (2001:279), which highlights the need for a '*balanced approach*' that respects the perspectives of stakeholders' educational needs, while considering diversity, quality, creativity, stable systems, and a competitive market-related standing.

Equally important, since institutional income is affected by the number of engaged students, current developments of the institution's Institutional Operational Plan (IOP2014) should highlight UWC as a determined institution, escalating in numbers; where the continuous enrolment, supported by a multi-

modal delivery approach, should help the institution, according to Clarke (1983:171), to position itself as one that is *"liberated from government and political bureaucracies".*

By the same token, quality assurance issues require reviewed and up-to-date improved change-management strategies and pedagogical approaches – which would enable learners (students and lecturers) to embark on a lifelong eLearning journey.

These elements, (factors) discussed above, should enable the institution to engage and market itself with confidence, in terms of its mission, as a national university, alert to its African and international context, as it *"strives to be a place of quality, a place to grow – committed to excellence in teaching, learning and research, to nurturing the cultural diversity of South Africa, and to responding in critical and creative ways to the needs of a society in transition*". The *Integrated eLearning model* intends to build on accomplished initiatives for ***mission achievement,*** by *"nurturing well-educated and dynamic citizens who are able to cope in an ever-changing global society"* (Mission statement, UWC).

8.3 Summary: A reiterative, cyclic *Integrated eLearning model that* impacts implementation

It is important to notice that the *Integrated eLearning model* is cyclic in nature; and therefore, 'eLearning success' can never be claimed, but must rather be perceived in terms of a team commitment to continuous support, process and awareness to learners. In this case, the learners are the lecturers, students and support functions, who are 'on a lifelong learning journey', and in particular, an eLearning journey. Hence, the growing eLearning initiatives and practices at the University of the Western Cape *continuously change the organisational culture* of the institution. The reiterative key factors, which interplay, impact and contribute to effective eLearning implementation, are:

- The provision of access to holistic online activities – successful online application, successful registration, and successful access (log-in) to the eLearning system (*support, infrastructure, sustainability*);
- The integrated institutional ICT infrastructure and systems with dedicated front-end and back-end support capacity and processes; enabling the development of pedagogically sound, interactive

online courses, which can be accessed at any time and from any geographical space (*ePedagogy, support, infrastructure*);

- The support and development of the citizens: students, lecturers and support staff (*vision and mission, communities of practice*);
- The educators who take hands-on roles in the implementation and the application of blended eLearning practices, linked to increased relevant joint research for the enhancement of online teaching-and-learning (*research-based pilot projects, blended eLearning practi*ces);
- The communities of practice (COPs), which are replicated in the institution and between collaborative partners outside the institution (*COPs, research-based pilot projects*);
- Attempts by the institution to contribute and position itself favourably in the global and knowledge society (*knowledge era, vision and mission, COPs*);
- Those leaders and staff of the institution recognising the need to align and take ownership, in order to develop integrated strategies, processes and practices for the effective use of the emergent technologies (*leadership, strategy*);
- The motivation by leaders (Vice-Chancellor; Heads of Departments; Executive Directors) and managers to guide and direct the academic and non-academic staff to interrogate plans and policies, which should not be devoid of socio-economic issues, such as access, shortages of classrooms and computer laboratories, remedial assistance for learners, and the HIV/AIDS Pandemic (*leadership, strategy, organisational culture/history, vision and mission*);
- An integrated curriculum design, in order for eLearning to become an integral part of the teaching-and-learning curriculum across all programmes of the institution (*blended eLearning practices, ePedagogy, quality assurance and continuous improvement*);
- Team commitment to continuous support, process and awareness (*marketing, support, quality assurance and continuous improvement*);
- Sustainability, which requires change management strategies that would consider constructive and cost-effective approaches in sustaining the eLearning support unit, as well as other institutional support units (*marketing, sustainability, support*);
- Quality-assured, reviewed and up-to-date improved change management strategies and pedagogical approaches to the way in which eLearning practices are presented to user-groups (institutional leaders, eLearning decision-makers, lecturers, students, tutors, eLearning support

staff), as well as the way in which learners are assessed and interact (*quality assurance and continuous improvement; strategy, ePedagogy, leadership*);

- Research-based eLearning pilot projects, which would contribute to the institution's throughput rates by developing autonomous, independent graduates that are able to engage in critical enquiry and knowledge-creation (*research-based pilot projects, vision and mission*);
- Effective change-management, marketing strategies and approaches, which could further enable effective communities of practices (*marketing, COPs*); and moreover, the
- Integrated professional leadership, management and support of the components of the eLearning model, which would ensure that the institution has a shared vision and a structured implementation approach to eLearning policy design, development, and implementation (*leadership, vision and mission, strategy*).

This integrated eLearning model intends to guide HEIs who want to embark on implementing eLearning; and specifically those who endeavour to make use of open-source eLearning systems; and for those who have already implemented such, to possibly assess their progress and the quality of their eLearning initiatives; as well as challenges that may have been encountered or are being encountered. Hence, the discussions also reflect on lecturer and student support issues and the barriers with which an eLearning support unit must grapple when implementing eLearning.

Furthermore, the model also touches on change-management and marketing strategies for the successful implementation of eLearning in a HE context. It is also intended that this integrated eLearning model should perform an educational role in the future eLearning implementation planning in HE contexts; as well as contributing to the emerging body of knowledge, in terms of eLearning implementation in a developing country. Moreover, it highlights the indications of lifelong organisational cultural changes due to an ever-growing eLearning community.

For the most part, the development of an *Integrated eLearning Model* has been a difficult task; and it is, as Badat (2004:47) puts it: "*that policy development, planning and implementation is a complex task, which is linked to the wider social objectives, apprehensions and struggles*". The situation today remains, as Clarke (1983:167) stated, "*The national system comes under pressure for more and better higher education, a differentiation is highly probable in which there will be a residual market for private*

sectors… and when the public sector is not providing either the more or the better, government officials, as well as multitudes of consumers, are likely to support those institutions, new and old, that compete in the residual market".

8.4 Conclusion: Critical decision-making

This chapter has discussed and interpreted the *Integrated eLearning model*, based on the data gathered during the different phases, as well as the major gaps in the implementation of eLearning in a higher education setting. These gaps were highlighted in terms of hands-on innovative lecturer roles, eLearning growth, and a focus on the need for ePedagogy skills, increasing blended eLearning practices – despite an unstable eLearning system – due to innovative eLearning marketing strategies and joint research-based pilot projects. Moreover, the research has reflected on the development of the home-grown Open Source eLearning system as a contribution to the knowledge era, linked to the African Virtual Open Initiative and Resources (AVOIR) Network.

However, a paradox is evident in the institution. The research has reflected on the exponential growth of eLearning, improved attitudes and mindsets, strategic commitment to the infusion of technology and ePedagogy, in addition to the institutional teaching and learning strategy. On the other hand, these results are in stark contrast to the repeated launches and crashes of a home-grown eLearning system, linked to the lack of management of the development of the home-grown Open Source platform, often hindering online teaching and learning initiatives, as well as support processes.

These results further leave the decision-makers in a difficult situation. On the one hand, UWC is well-renowned globally for its Open Source initiatives, especially with regard to the home-grown eLearning system. On the other hand, the research has reflected on repeated unstable launches and crashes of various versions of the institutional learning management platform, indicative of a lack of version-control management by the developers of the system; and moreover as highlighted previously, the call on the ground for the abandonment of this system. Hence, in 2010, the eLearning Manager highlighted to the formal leadership of the institution, the need for serious decisions to be made due to the looming paradox,

which cannot be ignored, in order for eLearning to grow to the next level at the University of the Western Cape.

Recently, by the end of 2011, the formal leadership has accepted the eLearning Manager's proposal to select the Sakai collaborative learning environment as the institutional eLearning platform for the University of the Western Cape.

Furthermore, it has become evident that even through a well-researched and motivated *Infused ePedagogy* and *Integrated eLearning model* – that may be used in the implementation of eLearning at a HEI – the success of the implementation can be seriously limited or even lead to the unwillingness of academics to participate, if an unstable or unsuitable learning management platform is used. Thus, there remains a lack of sound infrastructure and necessary bandwidth to make use of all the educational technologies. Time and resources will continuously be spent on stabilising an unstable platform and addressing infrastructural requirements; whereas, these resources could have been better spent, and more fruitfully, on enhancing the effective adoption of eLearning practices.

CHAPTER 9

CONCLUSIONS AND RECOMMENDATIONS

9.1 Summary of the research

9.1.1 Overview

Chapter One included an introduction to the study contextualising a case study in relation to changing societal expectations, as related to ICT and the growth of eLearning in higher education. Higher Education Institutions (HEIs) abroad and in South Africa have implemented eLearning to – amongst other things – prepare students for a society that expects graduates to be able to perform under the pressures of ever-changing technological challenges. Consequently, a need has arisen for ePedagogy training, and support for academics and students within challenging, complex HE settings. Within this context, this first chapter pointed out the need to study the eLearning-related factors that contribute to successful eLearning implementation within higher education institutions, as well as the need for optimising those factors through a model, such as the *Integrated eLearning Model*, as presented in the thesis.

This first chapter stated the rationale and the aims of the study; it presented the formulation of the research question; and it provided an overview of the empirical research design and the methodology.

Chapter Two provided the theoretical framework on which the rest of the study is built**.** The theoretical underpinnings that inform eLearning were explored, as well as how the merging of learning theories; different teaching and learning approaches and technology can enable the creation of effective eLearning models. This second chapter explored how theories of eLearning have impacted the application of learning, and specifically eLearning. The following theories were explored: Behaviourism, Cognitivism, Social-communal Constructivism and emerging Connectivism. Furthermore, the chapter discussed eLearning models, specifically with the aim of providing a more structured approach to the implementation of eLearning.

Chapter Three endeavoured to position the eLearning discourse within a global perspective, and how it has impacted technological developments within HEIs. Consequently, it was necessary to deliberate on eLearning in the global context of higher education (HE), with particular emphasis on the concepts of globalisation and the knowledge era; the changing higher educational context; and the global legislative framework of higher education institutions underpinning the creation of enabling ICT environments. Moreover, the chapter also endeavoured to address the ever-changing demands of ICTs within HEIs; and whether ICT is indeed constructively impacting teaching-and-learning practices. The chapter concluded with a discussion of the implementation of Learning Management Systems (LMSs) within Western Cape HEIs; and more specifically within the University of the Western Cape (UWC).

Chapter Four identified the empirical research design and methodologies that were used to collect and analyse the data for this explorative, longitudinal case study on the implementation of eLearning in a higher educational institution (HEI) in a South African context, namely: the University of the Western Cape (UWC). In addition, the chapter discussed a mixed-methods approach; sampling procedures; and the analytical approach that was applied to the study. The chapter concluded with a description of the data collection in three phases: from September 2005 to October 2011.

Chapter Five highlighted the first phase of the case study – reflecting on the situation prior to the inception of the eLearning Development and Support Unit (EDSU); the establishment of the support unit as an illustration of organisational change to support eLearning across a university; the deployment of a non-coercive approach to the implementation of eLearning; and the impact it has had on the organisational culture of the institution. This led to the development of an *Online Course Creation Model* – which forms the core of *phase 1* of the case study – based on the data gathered from an extensive literature review focused on an eLearning awareness campaign within a higher education setting. Supporting quantitative evidence was presented to illustrate the number of lecturers who had voluntarily contacted the eLearning support team for training; the number of students trained; and the number of courses developed online for the period September 2005 to December 2006.

Chapter Six showcased the gaps in the *Online Course Creation model,* and it emphasised the need that eLearning implementation in a complex higher education setting should go beyond the focus on

ePedagogy with regard to effective online course creation. Hence, this second phase of the case study involved the development of a revised eLearning model, the *Inclusive ePedagogy model* – which was based on the processes of the development of an eLearning model discussed in phase 1; and further data-collection through an email questionnaire, which was administered to academics in the institution who had voluntarily enquired about eLearning training, and how they could effectively use the eTools of the Open Source eLearning system. This questionnaire was also administered to institutional leaders, eLearning support staff, and eLearning experts and consultants (each having about ten years of eLearning experience) at other higher education institutions (HEIs) in South Africa.

Interviews were also conducted at the University of the Western Cape with various stakeholders (institutional leaders, academics, IT support staff and eLearning support staff), whose specific perspectives impact on and contribute to the decision-making processes of the institutional eLearning implementation. Furthermore, supporting quantitative evidence was gathered to illustrate the number of lecturers who had voluntarily contacted the eLearning support team for training, the number of students trained, and the number of courses developed online for the period January 2007 to August 2008.

Chapter Seven highlighted the main developmental stages implemented in the creation of a final *Integrated eLearning model,* and how these have influenced the organisational cultural change within UWC. This third phase of the case study was based on the findings of the previous phases and further empirical data collected through another set of interviews. These interviews were conducted with lecturers, in order to determine their level of effective employment of eTools within the learning management system. At the same time, the level of use of specific eTools by their respective students was determined through the use of a questionnaire.

Supporting quantitative evidence was gathered to illustrate the number of lecturers who had voluntarily contacted the eLearning support team for training; the number of students trained; and the number of online courses developed for the period September 2008 to October 2011.

Chapter Eight presented and discussed the final *Integrated eLearning model:* highlighting the integrated factors that contributed to the implementation of eLearning in a complex higher educational environment.

It was concluded that the resultant *Integrated eLearning model* could enable eLearning decision-makers and users to optimally implement eLearning for the core business of the institution, namely: teaching and learning; in addition to research and community outreach.

9.1.2 Introduction to the research

The study has been a longitudinal study which was undertaken from September 2005 to February 2011, after it was realised that there are many challenges faced by academics in the implementation of eLearning practices across the globe, and in particular at the University of the Western Cape (UWC). As a result, the study explored the factors that contribute to the successful implementation of eLearning within a higher education institution. Interaction with various stakeholders included interviews and questionnaires. The results from these interactions facilitated the development and presentation of a provisional *Online Creation model*; a revised *Infused ePedagogy model*; and finally an *Integrated eLearning model*, which the researcher envisages would be of value to eLearning decision-makers and practitioners at UWC and other higher education institutions, as they seek to implement eLearning.

9.1.3 Research problem and questions

A paradox in eLearning adoption at UWC was demonstrated, where, on the one hand, a number of academics have enhanced their traditional methodologies with various eTools (communication, content creation and assessment). However, on the other hand, many academics have consistently rejected the use of the open source home-grown institutional learning management system at UWC. In addition, the above problem has been exacerbated by the lack of sound ICT infrastructure, human capital and effective back-end maintenance and support processes.

The research thus proposed that, for the effective implementation of eLearning, HEIs will have to take cognisance of the complex higher educational domain and the various factors that contribute holistically to the implementation of eLearning. Within this context, the main research question of the study was formulated as follows:

What are the factors that contribute to the successful implementation of eLearning at the University of the Western Cape (UWC), and how could these factors be optimised?

Furthermore, the research had to respond to the following sub-questions, in order to answer the primary research question:

1. *To what extent do learning theories impact eLearning practices?*
2. *How do global trends in eLearning impact its implementation in HEIs in developing countries?*
3. *How can HEIs create enabling environments for the transformation of organisational culture, reflecting blended eLearning practices and communities of practice?*
4. *What are the factors which enhance and inhibit successful eLearning implementation in HEIs in general, and at the UWC in particular?*
5. *How can an integrated eLearning model provide a guide to HEIs for the development of oriented plans and strategies for educational technologies?*

9.1.4 Aim and objectives of the study

The main aim of the study was to establish the contributing factors to successful eLearning implementation in a complex higher education setting. In order to achieve this aim, it was necessary to meet the following objectives:

- *To explore and apply relevant literature, in order to determine the new demands of teaching supported by eLearning, and to interpret these demands in the context of learning theories and global trends;*
- *To identify the factors which enhance or restrict the successful implementation of eLearning at UWC;*
- *To develop an integrated eLearning model for use at the University of the Western Cape;*
- *To present an integrated eLearning model for implementation at the University of the Western Cape, and its possible adoption by other higher education institutions.*

9.1.5 Literature study

The literature review of this study was not presented in one chapter, but rather integrated into two chapters (Chapters 2 and 3), and then further woven into the three phases of the case study (Chapters 5 to 8).

Chapter 1 gave an introductory road map to the study, briefly covering the literature, which highlights: (i) Efforts of ICT implementation in HE settings, and the importance of documented lessons learnt and repeated critique; (ii) effective eLearning implementation guided by strategy and ePedagogy; and (iii) the integration of educational technologies into traditional teaching-and-learning practices.

Chapter 2 included a theoretical framework as part of the study; and it presented literature highlighting: (i) Various learning theories and their impact on online education delivery; (ii) eLearning models and their impact on the application of teaching and learning; and (iii) the application of new online pedagogies into traditional practices.

Chapter 3 presented a literature review on: (i) Global legislation for the adoption of ICTs in higher education; (ii) the changing climate of higher education in South Africa; (iii) open-source software and its contribution to educational institutions; (iv) LMS adoption in HEIs in South Africa; and (v) the use of learning-management systems (LMSs) to motivate the effective use of eTools.

Chapters 5-8 presented corroborating literature which was woven into the empirical findings of the three phases of the case study; and the subsequent development and presentation of the: (i) *Online Creation model*; (ii) the *Infused ePedagogy model*; and the (iii) the final *Integrated eLearning model*.

9.1.6 Empirical Research design

Mindful of the nature of the research question in the study, a qualitative research design was used to facilitate an in-depth study within the context of eLearning implementation at the University of the Western Cape, the empirical setting of the case study. Hence, the empirical research design incorporated a longitudinal, explorative case study methodology to guide the collection and the analysis of the

empirical data obtained. Furthermore, it was considered necessary to investigate changes over time, specifically those related to eLearning adoption within a complex HEI. Although predominantly qualitative, the nature of the research required a fusion of qualitative and quantitative research methods for the data collection. Thus, a mixed-methods approach was used where quantitative evidence was used to support and complement the qualitative data.

Subsequently, the longitudinal case study (September 2005 – December 2011) for the implementation of eLearning at UWC was presented in three data-collection phases coinciding with the three phases in the development of an eLearning model. Evidence was collected from a diverse population: (i) Academics who voluntarily opted to use eLearning to support their teaching methodologies; (ii) those who had not yet opted to use eTools; (iii) students who had access to specific eTools within specific online courses; (iv) the leaders of the institution; and (v) ICT and eLearning support staff members who influence eLearning implementation in a higher education setting.

In addition, several data-collection tools, namely: document analysis, questionnaires and interviews, were utilised in the study. These were intended to minimise the subjectivity of the research findings, and to eliminate any bias.

9.1.7 Analysis and results

Qualitative analysis, containing an interpretive analysis process, was conducted over a period of time by the researcher. The empirical research findings of the study were not presented in a monolithic chapter, but were rather woven into the three case-study phases:

Phase 1 (September 2005 – December 2006) involved an extensive literature review focused on an eLearning awareness campaign within a higher education setting. This resulted in the development of the *Online Creation model*.

Phase 2 (January 2007 to August 2008) further expanded on the literature review; and it included the analysis of the UWC eLearning strategy document. This phase also involved an email questionnaire; in

addition to interviews conducted at the University of the Western Cape with various stakeholders (institutional leaders, academics, IT support staff and eLearning support staff). This phase resulted in the development of the *Infused ePedagogy model*, which is a revised version of the *Online Creation model*.

Phase 3 (September 2008 to October 2011) further expanded on the literature review; and it involved interviews with academics within the UWC. These academics were randomly selected from the lecturing staff and from different departments in the institution. In addition, another set of interviews was undertaken in October 2011 with lecturers, in order to determine their level of effective employment of eTools within the learning management system; this was in addition to the level of use of specific eTools by their respective students.

Supporting quantitative evidence was presented within each of the three phases, to illustrate the number of lecturers who had voluntarily contacted the eLearning support team for training; the number of students trained; and the number of courses developed online for a specific period of time. Subsequently, the evolving explanations derived from the qualitative and supporting quantitative data were analysed. This then led to the development and presentation of the final *Integrated eLearning model*.

9.2 Conclusions

Through the exploration and application of the relevant literature and in-depth qualitative analysis, the study established those factors which contribute to the successful eLearning implementation in a complex higher education setting. The results of the research eventually led to the development and presentation of an *Integrated eLearning model* – to enhance teaching-and-learning practices as a supplement to traditional modes of instruction. Those factors which enhance and restrict the implementation of eLearning were identified and incorporated into the model.

9.2.1 The research objectives/questions in the light of the findings

Both Chapters 2 and 3 responded to the research objective: *To explore and apply relevant literature, in order to determine the new demands of teaching supported by eLearning in relation to the learning theories and global trends.*

Chapter 2 presented a theoretical framework, emphasising that emergent eLearning endeavours should not be considered as add-on developments, but it should rather be highlighted that even though eLearning may be fundamentally technology-dependent, it is not devoid of the necessary theoretical underpinnings. Because of the infiltration of ICT into the strategies and traditional teaching practices, it was necessary to deliberate on the various theories of learning. Thus, it was necessary to explore the Behaviourist, Cognitivist, and Constructivist theories, as well as their variants. Hence, the dynamic changes in education should undoubtedly command the full attention of theorists from all education-related disciplines; and it is crucial to study how these theorists have impacted the delivery of online education.

Subsequently, Chapter 2 also highlighted how the merging of these learning theories impact teaching and learning approaches and technology; and moreover, how they facilitate the creation of effective eLearning models, which are able to assist HEIs to leverage traditional classroom instruction to online environments.

Chapter 3 placed the eLearning discourse into a global frame-of-reference, and sought to ascertain how this has impacted technological developments within HEIs. Consequently, it was necessary to deliberate on eLearning in the global context of higher education (HE), and especially in relation to the concepts of globalisation and the knowledge era. This chapter also engaged in discussion regarding the changing higher education context and the global legislative framework of higher education institutions. This legislative framework inescapably underpins the creation of all enabling ICT environments.

Chapter 3 further promoted the argument for the increasing adoption of ICT in HEIs, especially in terms of the adoption of either open-source (preferably) or proprietary LMSs. Equally important, various disparities were discussed in terms of their adoption and usage trends in South African HEIs. Thus, Chapters 2 and 3 answered the established sub-questions:

- *To what extent do learning theories impact on eLearning practices?*
- *How do global trends in eLearning impact its implementation in HEIs in developing countries?*

Chapters 5, 6, and 7 responded to the research objective: *To develop an integrated eLearning model for use at the University of the Western Cape*.

Chapter 5 of the case study reported on an implementation approach to eLearning at the University of the Western Cape – with a special focus on some of the factors that an institution encounters, and continues to encounter, in the transition between a pioneering phase (where a small number of educators are introducing eLearning to their practice) and the institutionalisation of eLearning (where it becomes an integral part of teaching and learning throughout the institution). In addition, the establishment of the E-Learning Development and Support Unit (EDSU) is discussed, as an illustration of organisational change to support blended eLearning approaches and methodologies across an institution. The chapter also reflects on the factors of change management, eLearning marketing and communication strategies of an 'awareness campaign' within a resistant, complex environment.

Hence, Chapter 5, the first phase of the case study, presented various focus areas of change management aligned to an 'awareness campaign' that led to the development of an *Online Course Creation model*, focused mainly on the application of ePedagogy for effective blended online course creation within the institution, as well as for collaborative communities of practice.

Chapter 6, the second phase of the case study, further highlighted the factors of eLearning implementation in a complex higher education domain, which go beyond merely focusing on ePedagogy with regard to effective blended online course creation. This led to the development of a revised eLearning model depicting a holistic approach to eLearning implementation, namely, an *Inclusive ePedagogy model*. This revised model further depicted an important factor of eLearning implementation – that is, the need for an eLearning support team committed to an ongoing awareness campaign within a HEI.

Chapter 7 further highlighted factors that impact and hinder eLearning implementation; especially related to both negative and positive attitudes regarding the adoption of eLearning practices – at different times

of a continuum. The need for a change of attitude, starting with the formal leadership of the institution to encourage the adoption of eLearning practices; the importance of encouraging eLearning champions to motivate others; and the need for lecturer and student support for the effective application of ePedagogy were emphasised. Equally important, the familiarisation of educators with the online-teaching environment should consider the diverse educational beliefs and benefits of various educational technologies.

Hence, Chapter 7, the third phase of the case study, discussed the development of the final *Integrated eLearning model,* highlighting further important factors, which contribute to eLearning implementation in a complex higher education setting.

Equally important, Chapters 5, 6 and 7 highlighted those factors which contribute to the successful implementation of eLearning. This cannot be measured through quantitative data alone, but also requires qualitative evidence.

Subsequently, Chapters 5, 6, and 7 answered the established sub-questions:

- *How can HEIs create enabling environments for the transformation of organisational culture reflecting blended eLearning practices and communities of practice?*
- *What are the factors which enhance and inhibit successful eLearning implementation in HEIs in general, and at UWC in particular?*

Finally, Chapter 8 responded to the research objective: *To present an integrated eLearning model for the implementation at the University of the Western Cape and possible adoption by other higher education institutions*.

This chapter has presented the *Integrated eLearning model*, which highlights the integrated factors to successful eLearning implementation in a complex higher education environment. This is intended as a guide to the successful implementation at other HEIs. This included the exponential growth of eLearning, improved attitudes and mindsets, strategic commitment to the infusion of educational technologies and ePedagogy – especially in relation to the review of the eLearning strategic plan and the teaching and learning strategies of the institution. Thus, Chapter 8 answered the established sub-question:

- *How can an integrated eLearning model provide a guide to HEIs for the development of oriented plans and strategies for educational technologies?*

By responding to the above sub-questions and objectives, the research has answered the primary research question: ***What are the factors that contribute to the successful implementation of eLearning at the University of the Western Cape (UWC), and how could these factors be optimised?***

9.2.2 eLearning implementation conclusions

The research has concluded that a number of factors have a positive influence on the implementation of eLearning. These factors include the following:

- E-Learning initiatives aligned to a changing organisational culture
- E-Pedagogy skills aligned to the creation of interactive, supportive online environments
- Blended eLearning practices aligned to the pedagogical value of eTools
- Online communities of practice in an ever-changing 'borderless world'
- Joint ownership of research-based pilot projects
- Innovative marketing of eLearning practices
- E-Learning support and a responsibility toward evolving organic processes
- Infrastructure and resources: More than mere access to computers and information skills
- E-Learning alignment with the vision and mission of the institution
- Strategic alignment for the infusion of technology
- The importance of leadership
- Contribution to the knowledge era, as innovative leaders and researchers
- Reviewed sustainability and quality-assurance approaches

These reiterative key factors highlighted above come together in an *Integrated eLearning model;* and they interplay, impact and contribute to the effective eLearning implementation within a HE setting. The *Integrated eLearning model* highlights the reiterative important factors, which impact eLearning implementation, reflecting on: The interplay of the provision of holistic online activities; integrated institutional ICT infrastructure and systems; the support of educators and students; the necessary positive

attitude by lecturers to take a hands-on role in the application of blended eLearning practices – aligned to research and the contribution to the knowledge era; the importance of communities of practice within and outside the institution; the need for motivated formal leadership and educators to take ownership of the development of aligned, integrated curriculum strategies supportive of emergent educational technologies; continuous commitment to eLearning support and quality-assurance processes; sustainable eLearning change management and marketing strategies; and crucial integrated professional leadership, management and support of the elements of the *Integrated eLearning model*.

Equally important, the factors above are all indicative of growing eLearning initiatives and practices at the University of the Western Cape. These have all contributed to a ***changing organisational culture***. The study highlights that these organisational cultural changes within a complex higher education setting, namely UWC, did not happen overnight. Hence, the research has identified evident attitudinal and mindset changes amongst eLearning users and decision-makers. Many of these have become more supportive and accommodative of eLearning initiatives. The supportive eLearning unit, in place since 2005, has led to academics adopting eLearning practices to supplement their traditional teaching methodologies.

The factors presented above within the context of the study, are indicative of a transformed institution – in so far as the implementation of eLearning is concerned. These factors have further resulted in the institutionalisation of eLearning at the UWC.

9.2.3 Contributions of the study

The final product of the study, an *Integrated eLearning model,* depicts the important factors that contribute to the successful eLearning implementation in a complex higher education setting. The model is a guide for HEIs who want to embark on the implementation of eLearning; and for those who have already implemented eLearning to possibly assess their progress and the quality of their eLearning initiatives. In addition, the model enables an institution to address challenges, such as lecturer and student-support issues and barriers. The model also emphasises the importance of eLearning change management and marketing strategies, especially in an open source environment. Moreover, the model

also highlights the importance of the educational role of eLearning implementation in complex HE settings.

Equally important, the *Integrated eLearning model* contributes to the emerging body of knowledge, in terms of eLearning implementation in a developing country; specifically highlighting that eLearning implementation in a complex higher education domain goes beyond merely focusing on the ePedagogy applied to effective online course creation. Organisational cultural changes within a HE could also be measured in terms of ever-growing eLearning practices; and the successful implementation can be assessed in terms of qualitative and quantitative measures. Furthermore, the model reflects that eLearning implementation in a higher education environment takes place in a broader socio-economic global village, and more importantly, within the national context of any specific country.

9.3 Recommendations

9.3.1 The institutional eLearning strategic document

The institutional eLearning Strategic document (2004) of the University of the Western Cape should be reviewed. Such a document should involve those who are practically involved in the implementation of eLearning; and not purely the formal institutional leadership. Hence, it is imperative to apply and evaluate the eLearning strategy holistically in an all-encompassing approach, exploring the key issues of: building and retaining skilled human capacity; a reviewed financial model; stipulated resources; and the need for collaborative eLearning research undertakings with other departments.

9.3.2 Quality assurance and the evaluation of the integrated implementation of eLearning

Quality assurance processes within the institution should include the submission of reviews and evaluation of the implementation of eLearning. These interventions should be undertaken regularly; perhaps annually or every two years, by both internal and external evaluators. External evaluators, such as the Higher Education Quality Committee (HEQC), could employ the *Integrated eLearning model* presented in this study as a template for the measurement and reflection on the quality of integrated

eLearning implementation within a complex higher education setting, namely, the University of the Western Cape – and possibly also other higher education institutions across the country.

9.3.3 Continued research

Equally important, the *Integrated eLearning model* emphasises the need for more relevant research – and in this case – for the enhancement of online teaching and learning. Hence, the support for new researchers is essential; and an institutional portal should be developed for research staff and students, in which eLearning outcomes, opportunities, inputs, statistics and projects could be managed. The membership of research foundations would allow the researcher access to a wider network. While the *Integrated eLearning model* highlights evidence that the institution has made substantive progress with innovative systems and blended eLearning practices, the situation at the institution could be described, as emphasised by Abrahams and Melody (2005:24): as a lack of "*specific network linkages*" for multidisciplinary research within the institution or with other research enterprises.

Furthermore, the well-researched *Integrated eLearning model* may be implemented at UWC and other HEIs to further guide the implementation of eLearning within the institution, as well as to measure the progress and quality of current implementations.

9.4 Recommendations for further study

9.4.1 Integrated blended curriculum design

Continued research is also necessary with regard to the emphasis of integrated blended curriculum design; whereby eLearning training and practices will become more infused into the current teaching and learning practices. Hence more in-depth ePedagogy research is necessary, especially related to the alignment of learner outcomes; course design and development; online teaching-and-learning practices related to learning theories; and eLearning support. Furthermore continued research on how administrative and technical aspects impact the application of online teaching and learning practices is key to successful eLearning implementation in higher education settings.

9.4.2 eLearning training integrated into the curriculum

Continued research is also necessary with regard to the benefits of eLearning training integrated into the curriculum; not only for a couple of training sessions, rather for a period of one semester, and even throughout the academic year. Hence, the research could seek to concur with the documented research that a paramount influence on students' performance has been the successful incorporation of IT sessions into programmes, whereby the sessions are not viewed as IT sessions, but rather as subject-matter sessions that actively connect to IT (Masters and Duffield, 2004:4; Jenee, 2011).

9.4.3 Innovative, self-directed lecturer involvement

Continued research related to lecturers' engagement as pro-active, self-directed learners within eLearning environments is necessary. Hence, the research could seek to find out why some lecturers only seek assistance and advice from the eLearning team during the initial stages and continue to create subsequent online modules on their own; whereas some lecturers need consistent support. As a result, the research could seek to find evidence as perceived by Engelbrecht (2003:42) - of autonomous learners who themselves take on a hands-on role in the improvement and application of eLearning tools in the teaching process.

9.4.4 ePedagogy staff development and remuneration

Continued research with regards to increasing positive attitudes to the adoption of eLearning and ePedagogy is necessary; hence, seeking to concur the claim by Lim and Chai (2008:808), who stated that there will be no change in the manner that educators use technology, if there is no change in their pedagogical paradigms.

In addition, continued research is necessary where the view is expressed that embarking on eLearning is part of staff development and personal enrichment; and for the betterment of lecturers and student, and should not be rewarded. At the same time, continued research is also necessary with regards to the issue of rewarding academics who have adopted eLearning practices, which is in line with Schuler and Jackson (2006:412) who stated that "*employee's satisfaction is determined by perceptions of whether the rewards*

received for performance are fair". Schuler and Jackson (2006) further highlights that training and developmental initiatives could enhance the knowledge and skills necessary for work related performance; however the most proficient employee needs to be motivated in order to function competently.

9.4.5 Academics attain skills in other areas of expertise when engaging in eLearning

Continued research is needed with regards eLearning staff development and capacity building in terms of attaining new skills in other areas related to their expertise by engaging in eLearning activities. Hence, the research could seek to concur the work of Anderson and Elloumi (2004:xiv) which emphasised eLearning as a focus area that includes the "*knowledge and practice of pedagogy, of psychology and sociology, of economics and business, of production and technology*" (Anderson and Elloumi, 2004:xiv).

9.4.6 Sustainability approaches of an eLearning unit benefit other support units

Continued research is needed with regards to the nature and departmentalisation of higher education, specifically sustainability approaches that entail the creation of working relationships with other department that deal with academic student support. Furthermore, continued research is necessary with regards to the implementation of eLearning student work-place internship programmes, whereby students are mentored and engage actively in daily eLearning operations – in order to enable a cost-effective way of supporting and sustaining an eLearning unit. Hence the research will seek to concur documented research which highlights that eLearning teams in HE settings may operate across departments within the institution or assist academics on specific projects (Lucas, 2006:479). Moreover, it will seek to assert the work of Lucas (2006:479) which highlights smart implementation approaches; and the work of Holt et al (2001:279) which highlights the need for a "*balanced approach*" that respects the perspectives of stakeholders' educational needs, considering diversity; quality; creativity; stable systems; and competitive market-related standing.

9.4.7 Open source versus propriety learning management systems

The impact and value of open source Learning Management Systems versus propriety and commercialised systems should be thoroughly investigated, with particular focus on homegrown systems and its particular challenges to implementation, support and change management.

For the most part, it is also important that the *Integrated eLearning model* is tested within other HEIs in South Africa, and possibly globally. Hence, the need for further studies on the impact of eLearning implementation and strategy development and planning in HEIs – emphasising the complexity of the task within wider socio-economic challenges.

9.5 The incitement of debate and experimentation

This study has incited and opened up a number of areas for possible debate: for example, open source software developments and their perceived contribution to HE. The research has highlighted some significant inconsistencies identified in the existing literature; and it has revealed an actual experience in the Southern African region – especially with regard to the case study, where there was evidence of a lack of dedicated maintenance and support of a home-grown open source eLearning system. This was added, in order to further define this case study, and the emergent body of knowledge in the eLearning field.

Another crucial area for further debate is the quality dilemma in Higher Education (HE), especially in terms of embedded systems and approaches; and moreover the need to ensure the quality of eLearning.

This research expects to produce more than mere "*information that gets shelved and has no practical value*" (Hollingsworth, 1997:317). Thus reports and short presentations on preliminary and final findings, conference papers and articles with regard to this research were delivered.

There are possibilities that this research will incite further debates in South Africa, on the rest of the African continent – and even abroad, which could lead to more research on eLearning implementation in the developing world, enabling all (especially Africans) to agree on issues of Open Source home-grown

eLearning systems and eLearning quality issues. However, due to the qualitative nature of this study, care must be exercised when generalising to the broader eLearning community.

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11) APPENDICES

Appendix A :Questionnaire: Interviews: September, 2008

[Academics responded to the interview requests; and others preferred to complete the questionnaire online]

Question 1

Do you think it is necessary for you to be taught – 'how to teach online'?

Question 2

Do you think there is a need for the application of instructional design within online courses?

Question 3

Do you think that technological change is inevitable?

Question 4

Have you engaged with the eLearning strategic document of the institution?

Question 5

Do you think it is a necessary for a lecturer to supplement a traditional classroom with an online environment?

Question 6

Did any participant mention that their 'unquestioned authority' will not prevail; and that they will take on a facilitator role with more discussion?

Question 7

Do you have any concerns regarding online assessment methods?

Question 8

What are the benefits of online assessment methods?

Question 9

Do you have any concerns regarding access to an online environment/s within the eLearning platform? Are you able to access your online environment at work; and at home?

Question10

Do you think that by engaging eLearning practices, it would improve your personal professional development?

Question 11

Would you refer to yourself as a bold explorer, willing to experiment; or somebody that would only adopt innovative teaching practices - 'when all is perfect' – and all technical and infrastructural issues are dealt with in the institution?

Question 12

Do you think it is necessary for you to adopt eLearning practices – in order for you to be a part of the pedagogical transformation of an entire institution?

Question 13

Do you think it is necessary for you to experience what it would be like to log into the eLearning system as a student? Would this assist you to design effective online courses?

Question 14

Are you content with placing notes online?

Question 15

Are you concerned with issues about online content design and aesthetics?

Appendix B : Interview schedule guiding questions to determine eLearning success

Key-stakeholder Interviews: Determining eLearning success

The researcher conducted key-stakeholder interviews, using the same set of email survey questions. The questions were posed as open-ended questions which allowed the collection of rich qualitative data.

The participants were asked to briefly respond to the following questions:

- ***What do you think is meant by eLearning success?***
- ***When will you know that your organization has achieved eLearning success?***
- ***What are the factors that will influence success?***

Purposive sampling was used. The researcher targeted an eLearning user population at a Higher Education Institution (HEI) of:

- Institutional Leaders
- Institutional Executive Directors
- Deans of Faculties
- HODs of Faculties
- Senior Lecturers
- Junior Lecturers
- ICS Director
- ICS Managers
- IT Operational Staff
- eLearning consultants and support staff
- Learning Management System (LMS) Developers

The development of an interview schedule was to serve as a guide during the key-stakeholder interviews. The interview schedule is a collation of a 'suite of questions' targeting and probing a specific sample of participants, for the retrieval of rich qualitative data in a natural conversational way.

Interview schedule: Guiding questions to determine eLearning success

Determining eLearning Success							
	Leaders	Deans & HODs	Lecturers	IT OPS	eLearning Consultants & Decision-Makers	eLearning Support Staff	eLearning Systems Developers
A. Pedagogy	A	A	A	A	A	A	A
B. Strategy	B	B	B		B		
C. Technology			C	C	C	C	C
D. Support			D	D	D	D	D
E. Organisational Culture	E	E	E	E	E	E	E
F. Quality Teaching-and-Learning Environments	F	F	F	F	F	F	F

The questions are categorised into sections of *strategy; organisational culture; pedagogy; technology; support and quality teaching-and-learning environments*. These should however not be viewed as linear and departmental. Many of them overlap categories. It enables the interviewer to collect rich qualitative data in a natural conversational manner. For example, an institutional leader may be asked pertinent strategic questions, but these could overlap into the important organisational culture arena. The category of *quality teaching-and-learning environments* is linked to all categories.

A. Strategy

1. Does your institution have an eLearning strategy?
2. Was the eLearning strategy formulated by a competent task team?
3. Do you think the project task team who formulated the strategy was aware of the factors that need to be considered when engaging in the formulation of a strategy?
4. Does your eLearning strategy include an implementation plan?
5. Do you think a sound implementation plan within an eLearning strategy is necessary?
6. Have your institutional leaders, deans, managers and senior lecturers aligned in terms of developing implementation processes and practices for the emergent technologies?
7. Do you think eLearning strategies should focus more on the effective use of these emergent technologies?
8. Do you think the success of the eLearning strategy will be jeopardised if strategic planners fail to focus on critical strategic issues?
9. Who should be responsible for highlighting the importance of the operational decision-making issues to enable successful implementation?
10. Did the institution conduct a SWOT (an acronym for *S*trengths, *W*eaknesses, *O*pportunities and *T*hreats) analysis when establishing an eLearning strategy? [The SWOT analysis will enable the organisation to identify critical strategic issues, built on core strengths, eliminate underlying weaknesses, take quick advantage of significant opportunities, and circumnavigate or mitigate threats].
11. Do you think it is advisable to diagnose problems before finalising the eLearning strategy?
12. Does your eLearning strategy include a business-case?
13. Do you think the establishment of the eLearning strategy should be preceded by a business case?
14. Is it important to get the support of top management when introducing eLearning?
15. Does the institution have a member at the executive level that sponsors the eLearning strategy?
16. However, do you think the institution is at risk of having a person who may use the opportunity at executive level to push his/her own eLearning agenda instead of the institution?

B. Organisational culture

17. Does your eLearning strategy identify both internal and external stakeholders? [These may include learners (end-users), line managers, business unit managers, top management, the IT department and partners].
18. Did the organizational executive leaders (the task team who developed the eLearning strategy), acknowledge the viewpoints of many stakeholders? [In order to enable suitable strategies which reflect not only on the costs and technology, but as well as the effects of the staff members and organisational culture].
19. Does your eLearning strategy reflect the participation of every employee, department and structure in the institution, or is it confined to institutional leaders and managers only?
20. Do you feel that you should share in the ownership of the eLearning strategy?
21. Do you have a vision that reflects how eLearning would enable your institution to do things it could not do before?
22. What do you think will happen in an environment if the eLearning strategy focuses more on acquiring knowledge about hardware and software applications?
23. Are your current eLearning initiatives developing your 'innovative' role?

24. The degree and rate of change have serious implications for the institution. Do you think everybody in the institution should embark on an eLearning initiative? [External environmental factors that may influence the nature of the eLearning strategy include customers, competition, technology, politics, culture and the workforce. eLearning should therefore not be introduced just for the sake of it].
25. Is there an indistinctness of eLearning language use in your institution?
26. Is there an uncritical use of eLearning jargon in your institution?
27. Do you think the eLearning jargon and analogies used by executive decision-makers expose their attitudes and values which they support and uphold in the institution?
28. Do you think our institutional leaders and staff are aligned and prepared for an organisational culture that should 'reflect the most successful model, i.e. an eLearning blended model which includes: self-paced learning; synchronous eLearning; and face-2-face classroom instruction?
29. Do you think our institutional leaders and staff are aligned and prepared for an organisational culture that will inevitably reflect Communities of Practice (COPs) which are replicated in the institution and between collaborative partners outside the institution?

C. Pedagogy

30. What do you think the 'sound foundation' of any eLearning successful implementation plan consists of?
31. Do you think there is a lack of learner deliberations/considerations, which beckons for a much wider understanding of the impact of teaching-and-learning?
32. Do you think the deliberation of technology for implementation plans is more important than the deliberation of the learner?
33. Should the pedagogical principles of the traditional classroom pertain to eLearning?
34. How can you (in your own domain) ensure that eLearning does not just become a topical trend?
35. Have you explored eLearning teaching-and-guiding principles for designing and developing an online course and eLearning material?
36. Do you think there is a lack of teaching-and-guiding principles for designing and developing pedagogical sound eLearning material?
37. Do you think that lecturers should take a hands-on role in the improvement and application of eLearning tools in the teaching process?
38. Do you think the institution will inevitably reflect an organizational culture whereby the leaders, lecturers and students will take on more pro-active, innovative roles?

D. Technology

39. What happens in an eLearning environment when the vision does not include substance issues such as infrastructure, bandwidth, cost and the co-operation of role players?
40. What is the best way to develop this vision?
41. In relation to eLearning, the practice of 'good teaching or instruction' is well presented in the science known as ***Instructional Technology*.** Have you explored this field of study?

42. In relation to eLearning, the practice of 'good teaching or instruction' is well presented in the science known as *Instructional Technology*. Have you explored this field of study before developing/building the Learning Management System (LMS) of the institution?
43. Do you think the science of Instructional Technology is the concern of the entire institution (leaders, deans, lecturers, executive directors, managers and students)?
44. Do you think the institution is striving for access to a holistic eLearning activity? This is successful online application, successful registration to a programme, successful access (log-in) to the Learning Management System (LMS).
45. Moreover, do you think our current systems will be able to increase the access given to those who cannot access existing traditional learning opportunities?
46. Do you think the essential ICT infrastructure to support eLearning end-user requirements are in place? Please deliberate.
47. Are you pleased with the tools offered by the current Learning Management System (LMS) – KewlNext.Gen (KNG)? Please deliberate.
48. Are you frustrated by technical hitches? Please deliberate.

E. Support

49. What would you highlight as the three most important end-user requirements in an eLearning environment?
50. Do you think our institutional structures were caught off-guard by the rapid expansion of the initial bottom-up approach?
51. Do you have technical support needs?
52. Do you need hands-on skills with KewlNextGen (KNG) as an eLearning tool?
53. Do you know how to teach online?
54. Do you need support in eLearning pedagogy?
55. Should the eLearning team offer regular scheduled training opportunities?
56. Should the eLearning team offer in-office training (one-on-one office consultation)?
57. Do you need training in instructional design principles and processes?
58. Do you believe that it is your responsibility to develop an online course?
59. Do you believe that a system should be in place whereby the obligation of developing an online course is shared?
60. Would an eLearning student support centre alleviate demands made on you from the students?

F. Quality teaching-and-learning environments

61. Would you agree that the successful adoption of eLearning is conditional to developing quality teaching-and-learning environments?
62. Would you agree that the successful adoption of the eLearning system (in this case, the Learning Management System, KNG), is conditional to developing quality teaching-and-learning environments?
63. What defines this quality online teaching-and-learning environment?

64. What defines the quality aspects of the eLearning system (LMS)?
65. What defines the quality aspects of eLearning (online) activities?

Appendix C :Questionnaire, lecturer participants (September - October 2011)

[Individual Interviews conducted with lecturers who had already adopted eLearning practices]

1. Which eTools do you apply in your online environment?
2. What are the benefits thereof?
3. Can you define any quality aspects related to your online environment?
4. Do you need support regarding the application of ePedagogy?
5. Do you think it is your responsibility to create your own online courses?
6. Do you think a lecturer should take a hands-on role, by giving feedback to the E-Learning Development and Support Unit (EDSU) - regarding the functionality and pedagogical value of the eLearning tools?
7. Do you think the current eLearning platform increases access to those who can't access traditional teaching environments?
8. Do you have any other issues you would like to mention?
9. Do you have any thoughts on the delivery of eLearning training for lecturers on campus?

Appendix D :Student Biographical Questionnaire

Section A

You are kindly requested to complete section A: Biographical information. This section contains certain personal information which will be used for statistical analyses only.

1. Age

_____Years

2. Year of study

	1st Year
	2nd Year
	3rd Year
	4th year/honours
	Masters
	PhD
	Other (list)

3. Gender

	Female
	Male

3. Racial Group

	African
	Coloured
	Indian
	White
	Other

4.Mother Tongue

	English
	Afrikaans
	Xhosa
	Zulu
	Sotho
	Other

5. Faculty

	Natural Sciences
	Law
	Education
	Economic and Management Sciences
	Dentistry
	Community & Health Sciences
	Arts

6. Department (Major Course)

7. **Where do you live/grew up?**

	Rural
	Urban
	Village

Section B

Since the implementation of the Learning Management System (LMS) - (eLearning/ eTeaching):

1. Are you familiar with the eLearning and eTeaching platforms? Please tick your relevant answer.

	Yes
	No

2. How do you access eTools?

	Smartphone
	Computer at Home
	Computer at Campus
	Internet Café
	Your Own Laptop

3. Tick the eTools you make use of for learning purposes

	Chat room		Discussion forums
	Internal email		Workgroups
	Announcements		Calendar
	Podcast		Audacity
	Wiki		Blogs
	File manager		Video
			Other

4. If you have allocated a zero (0) to a specific eTool, please provide a reason

_____

_____

5. How often do you use the eTools? Please tick your answer.

	Everyday
	At least twice a week
	Only when it is necessary
	I seldom use it
	I do not know what it E-Tools are?

6. What are your reasons for using eTools? Please tick the option(s) that you use.

	For Downloading Notes
	Sharing files with others/peers
	Communication Purposes (Internal email, Chat, Discussion Forums)
	Assessment Purposes (MCQ tests; Online Worksheets;, interactive Tutorials)
	Personal Use

7. Have you ever received Training from the eLearning Development Support Unit?

	Yes
	No
	I don't remember

8. Do you feel you have received sufficient/enough training on using eTools? If No, please state a reason

	Yes
	No

9. How would you rate the eTools in terms of user satisfaction on a scale of 1-4? Please tick your opinion.

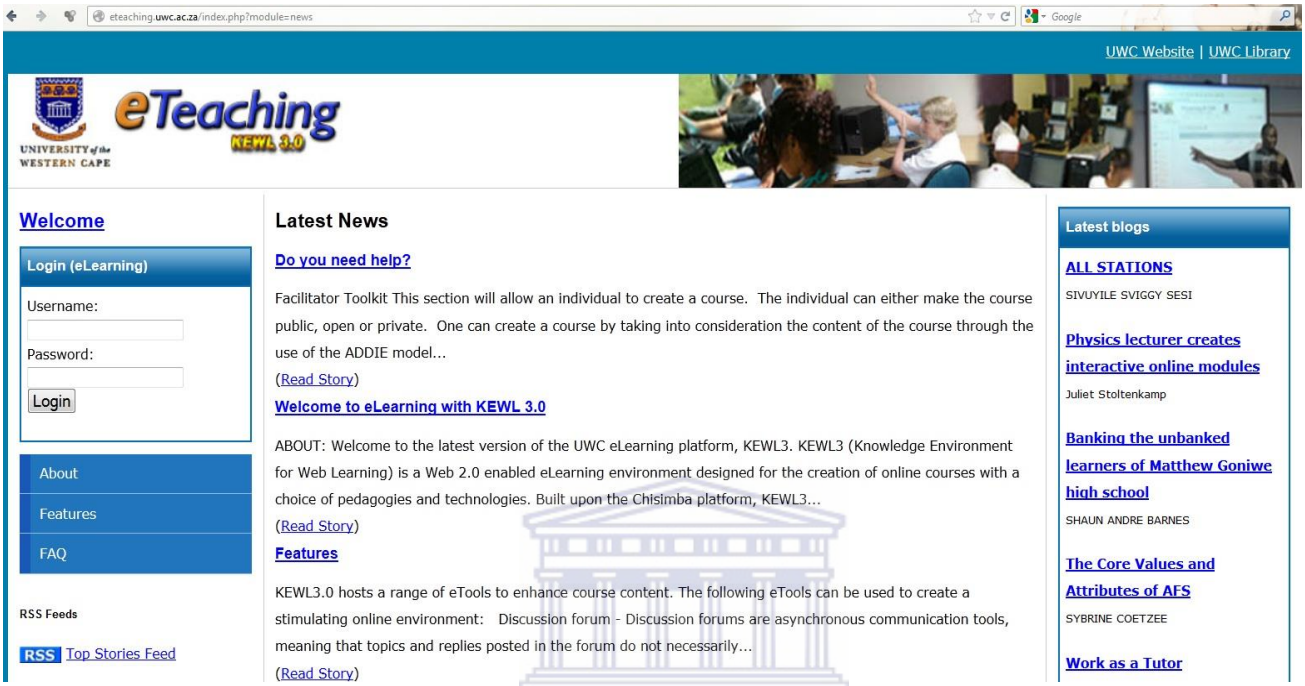
	1. Poor
	2. Satisfactory
	3. Good
	4. Excellent

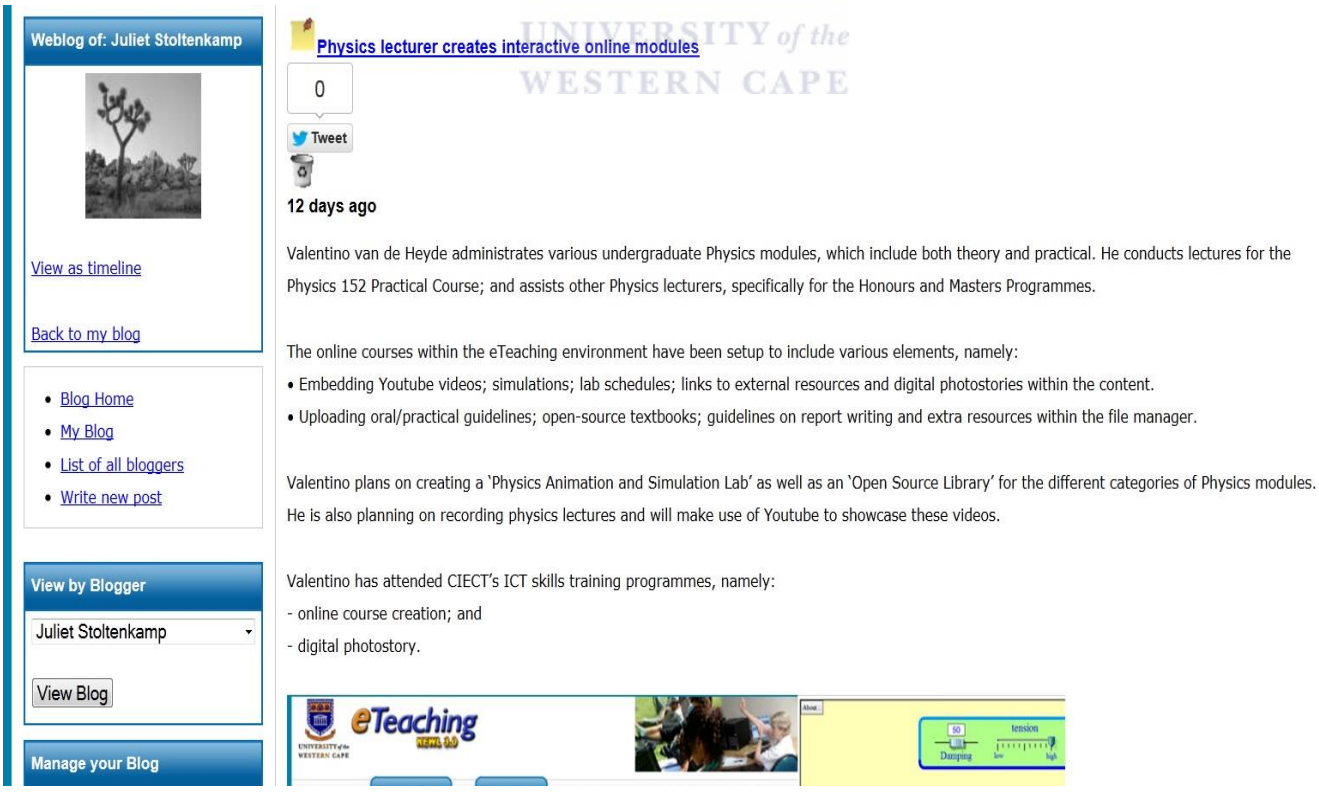
10. Since the implementation of the Learning Management System (eLearning/ eTeaching) - have you personally benefited from making use of it?

Thank you for participating.

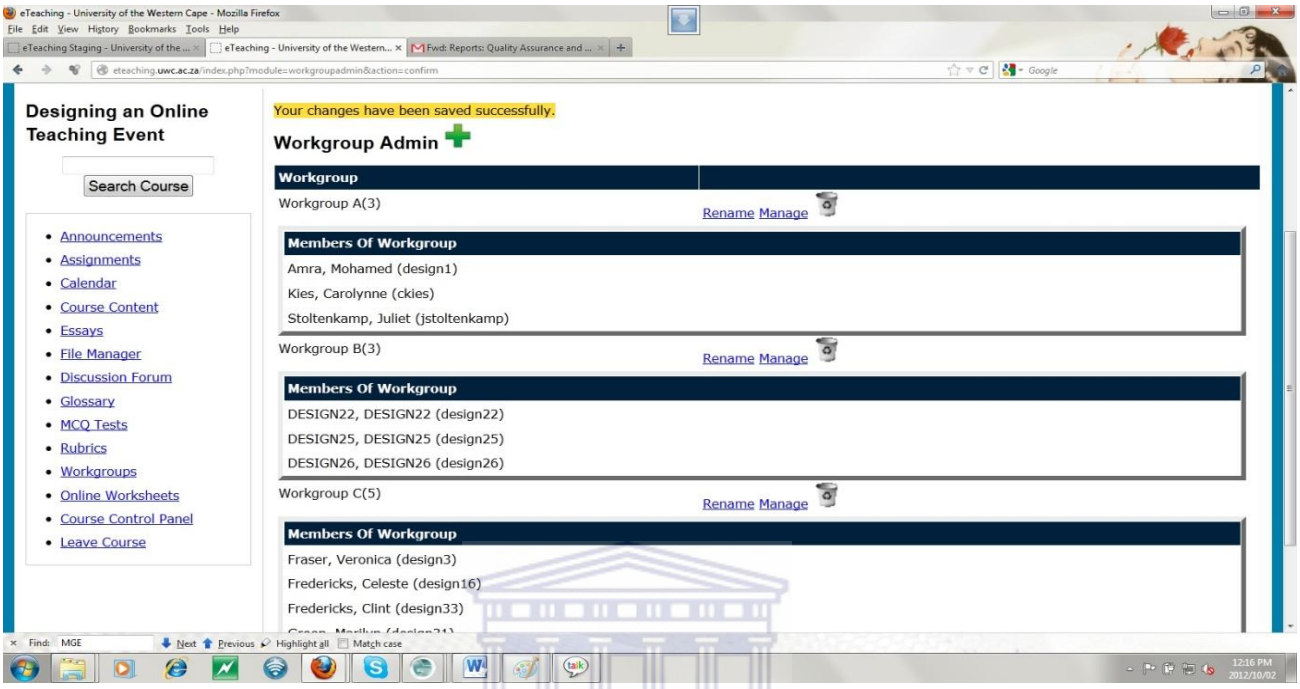
Appendix E: Screenshots of popular eTools used within the institutional Learning Management System

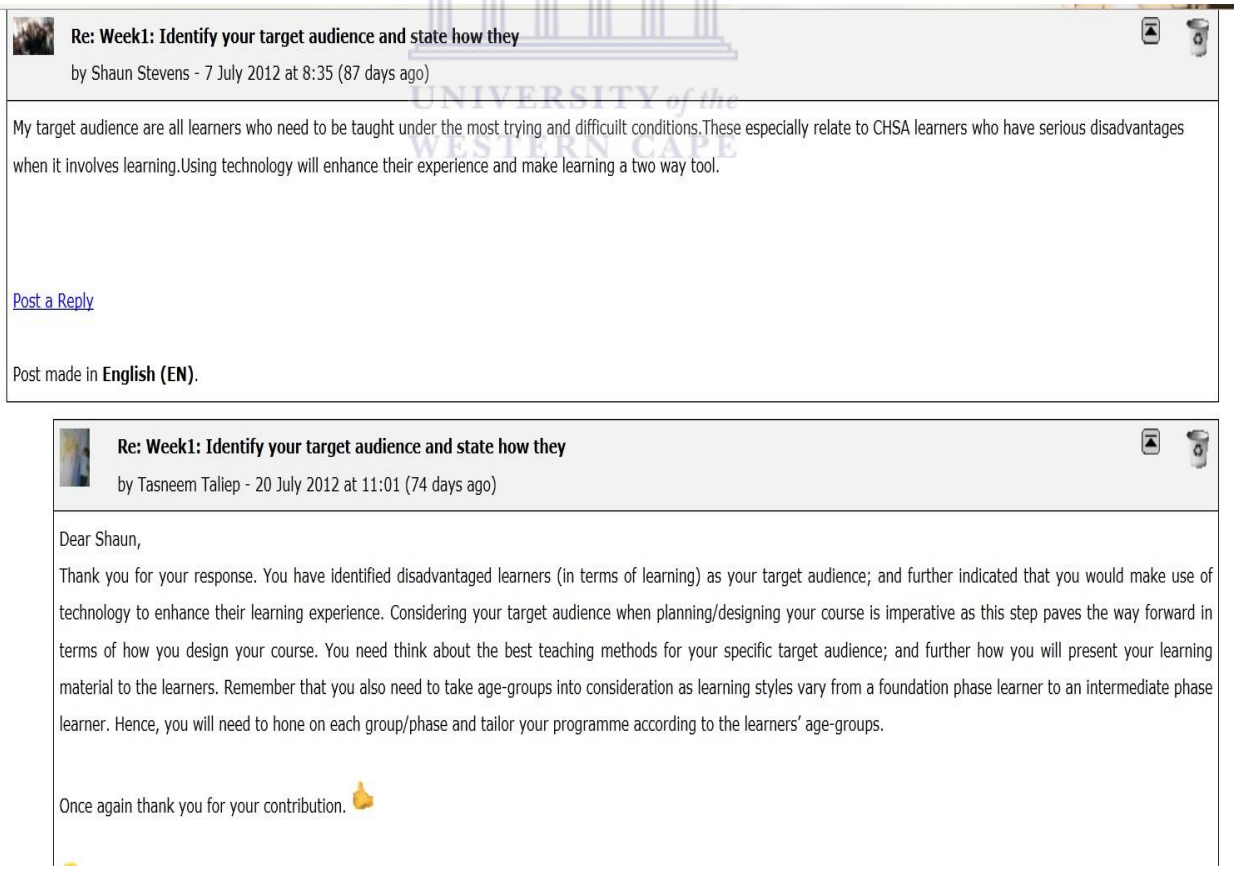
A. Interface of LMS and blog tool





B. Workgroups and discussion forum





Re: Week1: Identify your target audience and state how they

by Shaun Stevens - 7 July 2012 at 8:35 (87 days ago)

My target audience are all learners who need to be taught under the most trying and difficuilt conditions.These especially relate to CHSA learners who have serious disadvantages when it involves learning.Using technology will enhance their experience and make learning a two way tool.

Post a Reply

Post made in **English (EN)**.

Re: Week1: Identify your target audience and state how they

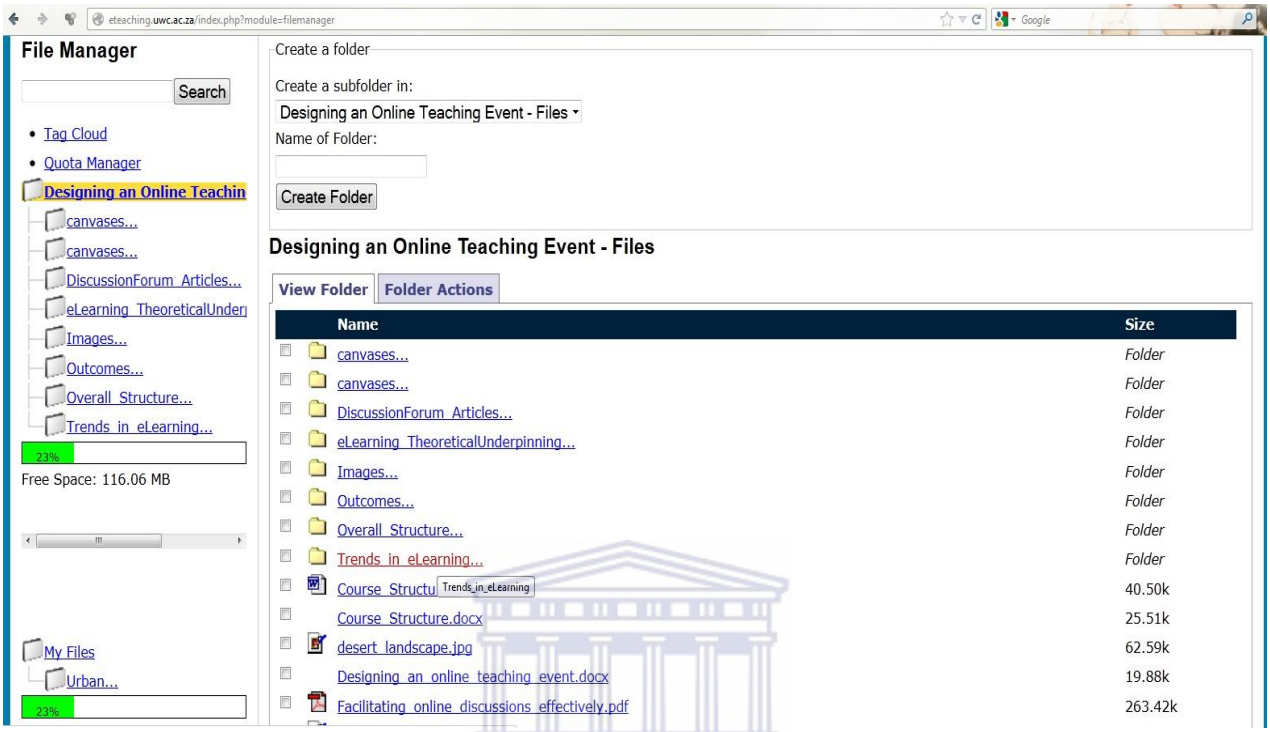
by Tasneem Taliep - 20 July 2012 at 11:01 (74 days ago)

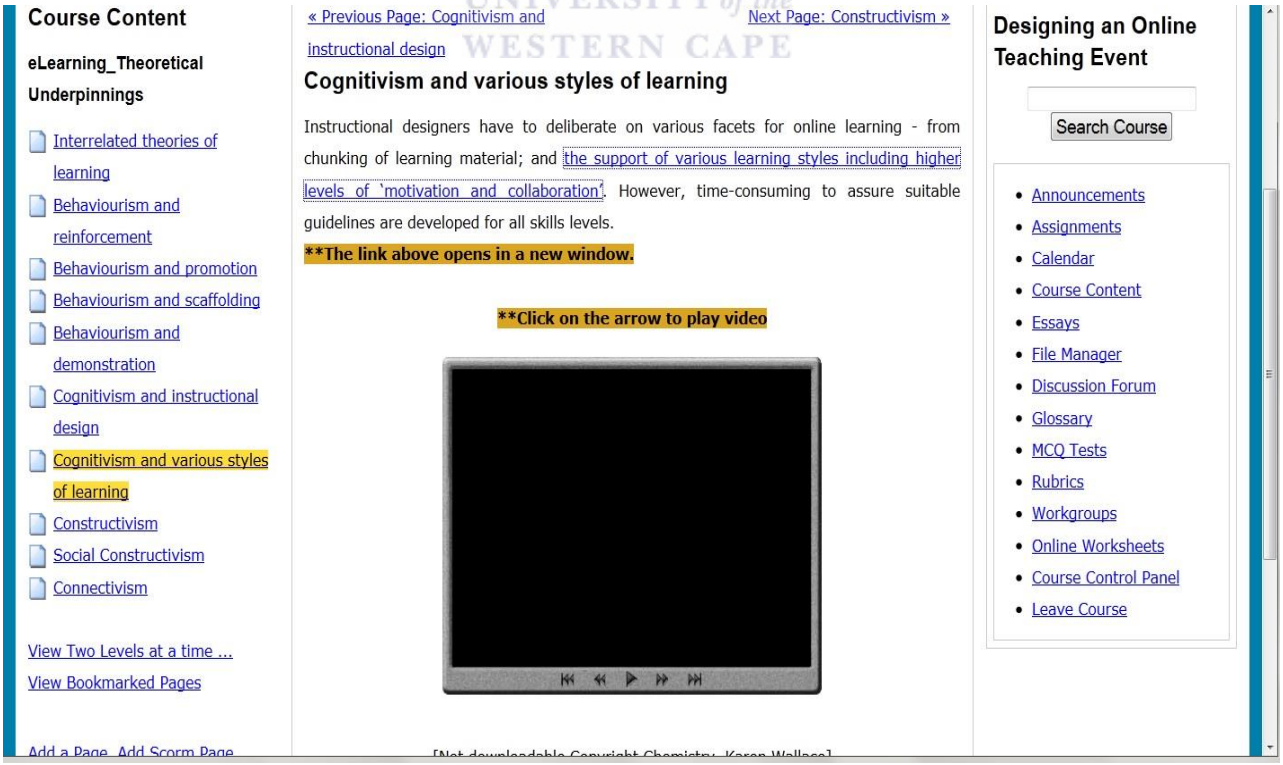
Dear Shaun,

Thank you for your response. You have identified disadvantaged learners (in terms of learning) as your target audience; and further indicated that you would make use of technology to enhance their learning experience. Considering your target audience when planning/designing your course is imperative as this step paves the way forward in terms of how you design your course. You need think about the best teaching methods for your specific target audience; and further how you will present your learning material to the learners. Remember that you also need to take age-groups into consideration as learning styles vary from a foundation phase learner to an intermediate phase learner. Hence, you will need to hone on each group/phase and tailor your programme according to the learners' age-groups.

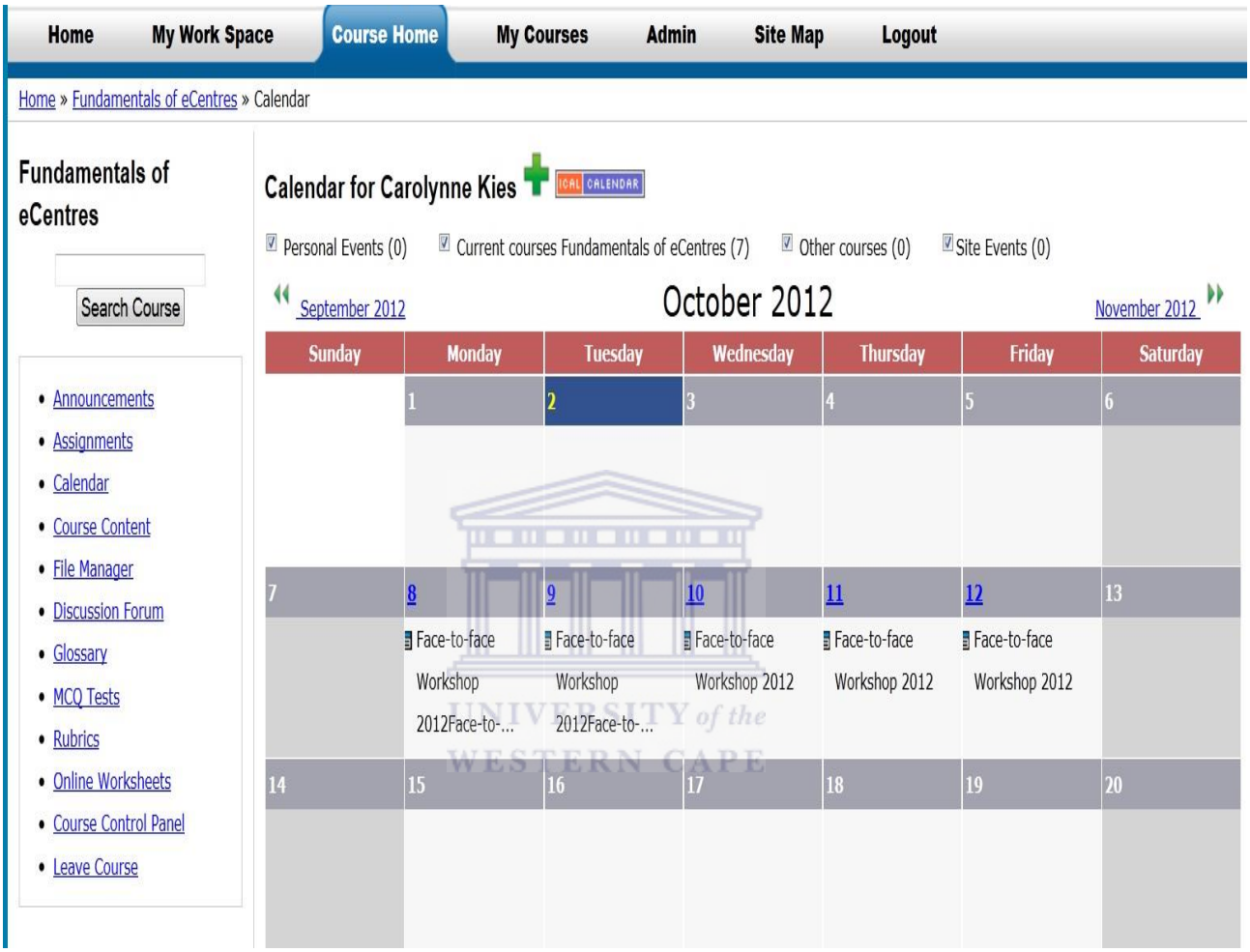
Once again thank you for your contribution.

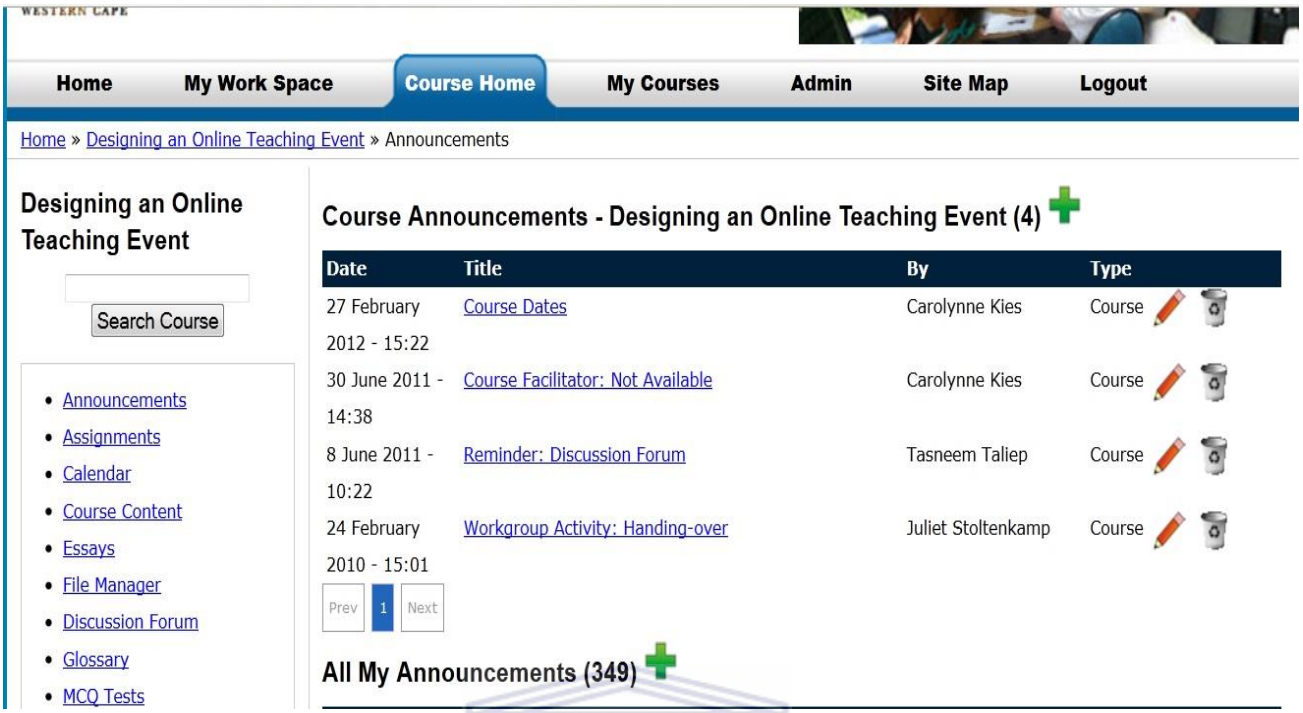
C. File manager and links to course content

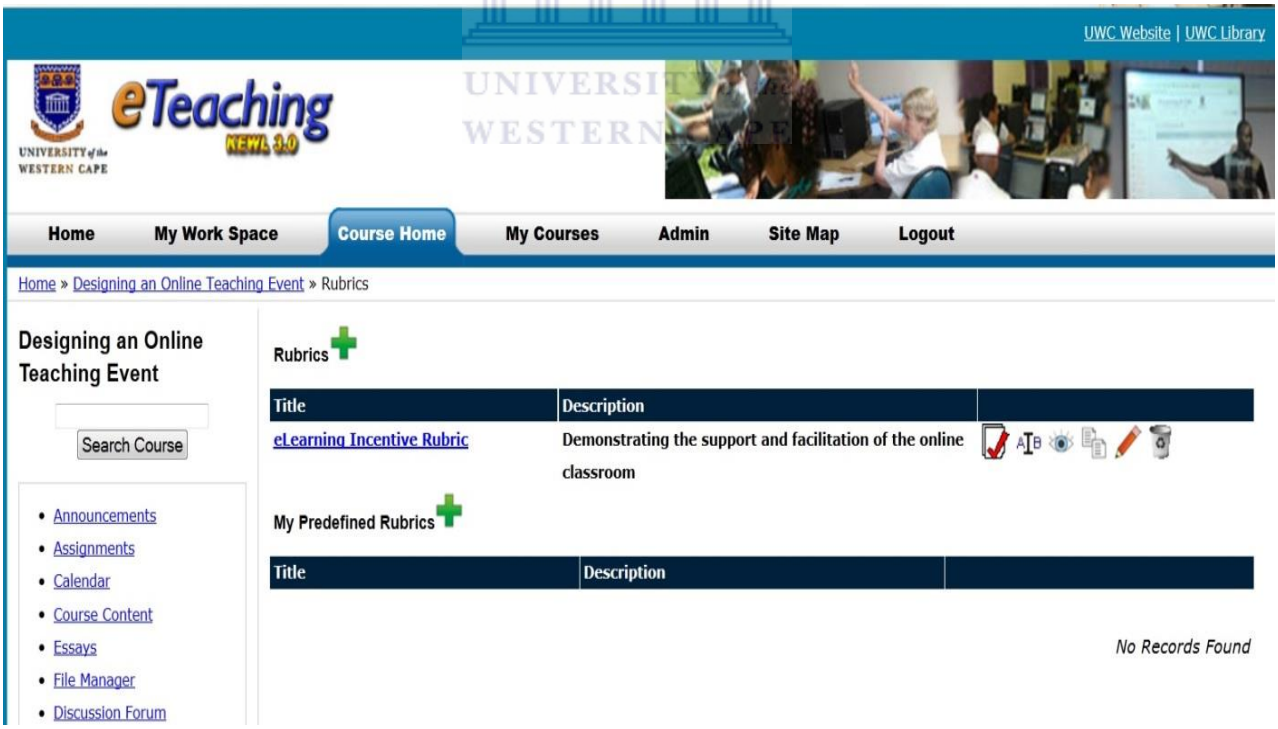




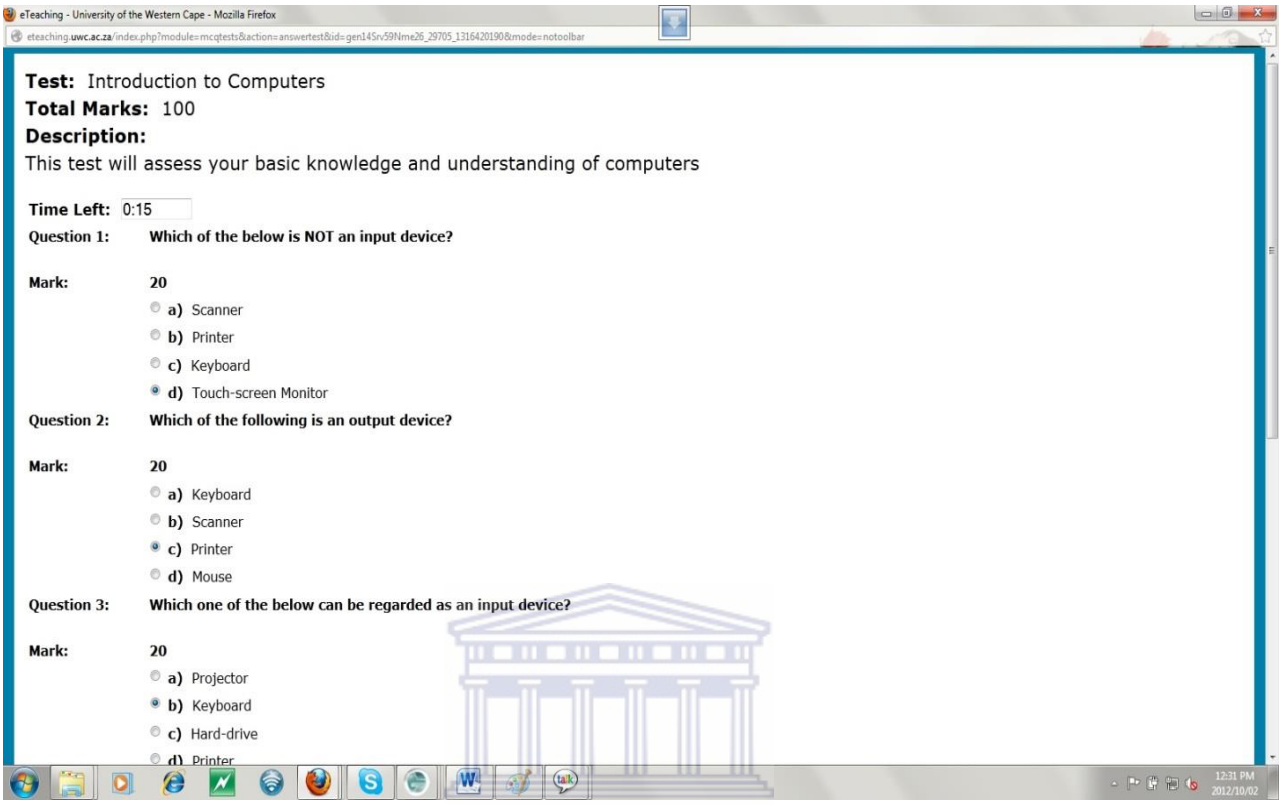
D. Calendar, announcement and rubric eTools

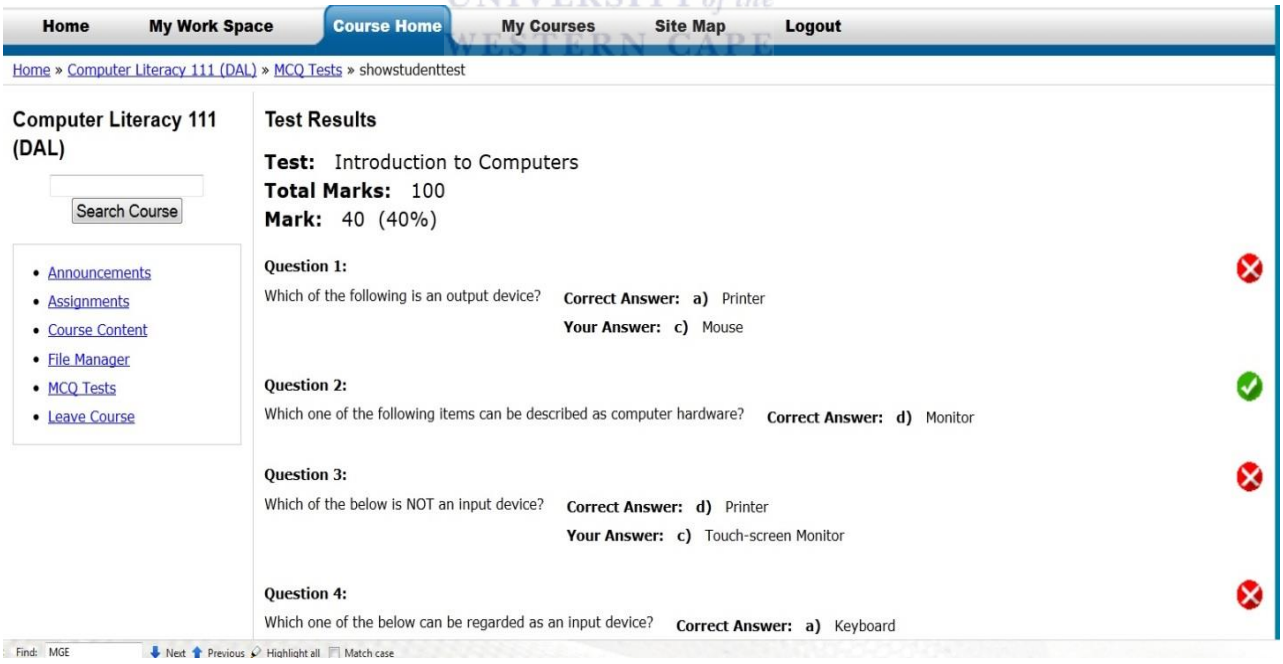






E. Assessment eTools: Multiple Choice Questions (MCQs), assignments and online worksheets





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Assignments

Name	Assignment type	Lecturer	Closing date	Status
Assignment 1: Interview - community members	Upload	Carolynne Kies	13 April 2012 - 23:45	Closed
Assignment 2: Information Resource Bank	Upload	Carolynne Kies	13 April 2012 - 23:45	Closed
Unit1:Assessment	Upload	Norina Braaf	30 December 2011 - 12:00	Closed
Module2:Unit2 Assignment	Upload	Norina Braaf	13 December 2011 - 16:00	Closed
Module2:Unit3 Assignment	Upload	Norina Braaf	13 December 2011 - 16:00	Closed
Module2: Unit1 Assignment	Upload	Norina Braaf	12 June 2011 - 14:00	Closed
Module 3: Unit1	Upload	Norina Braaf	13 January 2011 - 0:00	Closed
Unit 3: Assessing Community Needs	Upload	Norina Braaf	30 December 2010 - 0:00	Closed

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Online Worksheets

Worksheet Name	Questions	Activity Status	Percentage	Total Mark	Closing Date
Module 5: Unit 4 Quick Check 4.2	2	Open for Entry	5	5	2011-02-22 00:00:00
Module 3: Unit 2	3	Not Active	50	20	2011-01-14 00:00:00
Module1:Unit 2 Quick check 2.3	1	Not Active	10	8	2011-01-20 00:00:00
Unit 1: Quick Check 1.1	3	Open for Entry	10	7	2011-11-29 00:00:00
Module 3: Unit 2.3	1	Not Active	10	10	2011-01-14 00:00:00
Module3 Unit1: Quick Check 1.1	2	Open for Entry	10	10	2011-10-31 00:00:00
Module 5: Unit 4 Quick Check 4.1	2	Open for Entry	5	5	2011-01-18 00:00:00
Unit 2: Quick check 2.2	3	Open for Entry	10	23	2010-12-30 00:00:00
Module 5: Unit 1 Quick Check 1.1	3	Open for Entry	5	5	2011-01-18 00:00:00

Create New Worksheet