

**EXPLORING LECTURER EXPERIENCES OF THE USE OF ICT IN BLENDED  
LEARNING: A CASE STUDY AT A SOUTH AFRICAN UNIVERSITY**

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by

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## Abstract

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ICTs have had a tremendous impact on our educational environment. There have been a huge number of developments and support in implementation of ICT in Higher Education teaching and learning, also referred to as e-learning. Similarly there appears to be quite a number of research conducted on the use of ICTs in blended learning settings worldwide and as well as in South Africa. Very little research however, has focussed on the experiences of lecturers with e-learning, specifically as it relates to Learning Management Systems (LMS).

In trying to meet the requirements of its academic programmes and be in line with new developments worldwide, the University which is the focus of this study pilot projected the use of an LMS in a blended learning approach which integrates face-to-face classes with Blackboard, an ICT-based system or tool. Following the implementation of the pilot project, this study explores the experiences of lecturers in their blended learning environments at this university in the Eastern Cape province of South Africa.

The research design was that of an interpretative paradigm within a qualitative research approach in a case study methodology. Purposive sampling of six lecturers from departments within faculties across two campuses was done. The data was gathered through interviews, a follow-up questionnaire and document analysis was employed. Using Critical and Social Realism as meta-theories the study employed aspects of Activity Theory as substantive theory to understand particular experiences of blended learning environments and identify conditions which enable and constrain engagement in these environments so as to explore potential lessons to inform the kind of educational support which could be offered to facilitate uptake of the LMS.

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## Abbreviations and acronyms

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<b>AT</b>	-	Activity Theory
<b>CR</b>	-	Critical Realism
<b>DoE</b>	-	Department of Education
<b>eLU</b>	-	e-Learning Unit
<b>FET</b>	-	Further Education and Training
<b>HE</b>	-	Higher Education
<b>HEI</b>	-	Higher Education Institution
<b>ICDL</b>	-	International Computer Driving License
<b>ICTs</b>	-	Information and Communication Technologies
<b>IOP</b>	-	Institutional Operational Plan
<b>LMS</b>	-	Learning Management System
<b>NEPAD</b>	-	New Partnership for Africa's Development
<b>PGDHET</b>	-	Post Graduate Diploma in Higher Education Training
<b>RPL</b>	-	Recognition of Prior Learning
<b>SA</b>	-	South Africa
<b>SP</b>	-	Strategic Plan
<b>TEL</b>	-	Technology Enhanced Learning
<b>TLC</b>	-	Teaching and Learning Centre
<b>UK</b>	-	United Kingdom
<b>VLE</b>	-	Virtual Learning Environments
<b>WebCT</b>	-	Web Course Tools

## Definition of terms

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Blended learning is a concept that has been used in higher education to refer to a mix mode of learning, a combination of face-to-face classroom interaction with a technology tool that may be used to support learning. At times, the blended learning concept encompasses e-learning. Terminology that is utilised to define e-learning can be confusing and in most cases the terminology is used interchangeably or as synonyms. In this study the following terminologies, used interchangeably, are defined below:

**Blended learning** is defined as the integration of traditional classroom methods with online activities (also termed “e-learning”) (Macdonald, 2008).

**e-Learning** refers to the use of various educational tools that are either web-based, web distributed or web capable for the purposes of education (Nichols, 2003).

**Information and Communication Technologies (ICT)** refers to a diverse set of technological tools and resources used to communicate and create, disseminate, store and manage information (Roberts, 2000).

**Learning Management System (LMS)** is a collection of e-learning tools available through a common interface. It can be thought of as a platform in which online courses are developed and accessed (Nichols, 2003).

**Online learning** describes education that occurs only on the Internet (Nichols, 2003).

**Technology Enhanced Learning (TEL)** refers to the support of any learning activity through technology (Czerniewicz, Ravjee, & Mlitwa, 2006).

**Virtual Learning Environments (VLE)** are defined as “computer-based environments that are relatively open systems, allowing interactions and encounters with other participants and access to a wide range of resources”(Piccoli, Ahmad, & Ives, 2001, p.402).

# 1 Introduction to the study

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## 1.1 Introduction

This chapter introduces the study by presenting the background of and rationale to the study. This is followed by the presentation of research goal and research question, together with the anticipated value of the study. The chapter will conclude with an outline of the thesis.

## 1.2 Background

This study takes place within the context of one of the oldest and smallest universities in South Africa. The University is based in the Eastern Cape, one of the poorest provinces in South Africa, a developing country with a young democracy.

In the South African Higher Education (HE) system the University is categorised as a *Traditional University*, alongside *Comprehensive Universities* and *Universities of Technology*, which are the other two Higher Education Institution types in South Africa. Whereas *Comprehensive Universities* are said to offer a combination of academic and vocational diplomas and degrees and *Universities of Technology* focus on vocational oriented education, *Traditional Universities* mainly offer theoretically oriented degree programmes (“South African Higher Education: Facts and Figures,” n.d.). These three types of institutions are the result of restructuring processes of Higher Education Institutions by the national Department of Education in the early 90’s that saw the number of Higher Education Institutions decreasing from 36 to 23 (“South African Higher Education: Facts and Figures,” n.d.). Another outcome of the restructuring process was the emergence of Teaching and Learning Centres through a combination of what used to be called Academic Development units and Student Development units. These Teaching and Learning Centres would often incorporate a focus on e-learning (Boughey, 2007).

In the University the Teaching and Learning Centre was formed in 2004 through a restructuring process, combining what was then called the Academic Development Centre (ADC), the Student Development Unit and the Cooperative Education Directorate. The Centre emerged with four Units; 1) the Teaching Development Unit, which was responsible for academic development, 2) the Student Development Unit, which was responsible for student support, 3) the ICT Unit later known as the e-Learning Unit, which was responsible for student and staff development and support with ICT and 4) the Cooperative Education

Unit was responsible for experiential learning. The centre was composed of 9 staff members who were spread over the four units mentioned above spread across two campuses.

Along with massification and the introduction of Teaching and Learning Centres, these mergers followed from a political imperative after the 1994 democratic elections to widen access to and increase participation in Higher Education, particularly to previously disadvantaged black students. While massification is a worldwide phenomenon, in the South African context it came with the added complexities related to 'under-preparedness' or the "articulation gap" between school learning and Higher Education studies. In addition, massification brought with it a host of other challenges such as large classes and a consequently unfavourable lecturer-student ratio, as well as a shortage of adequate teaching space. Since these challenges emerged within institutions that were already faced with lack of adequate resources, many Higher Education Institutions had to rethink the ways in which they presented their offerings and supported their teaching and learning environments ("South African Higher Education: Facts and Figures," n.d.).

Since mergers took place between institutions in different locations or cities, merged institutions were faced with additional challenges. These challenges meant that there is need for management and lecturers to travel between the different campuses of such a merged institution in order to meet the needs of their student bodies.

The changed Higher Education landscape as outlined above has important implications for curriculum design and the use of technology in teaching and learning. While these changes were initiated in response to both global and local imperatives, the changes themselves require new practices and requirements for curriculum and learner support in the 21<sup>st</sup> century (Pearlman, 2010). This century is categorised by a rise in a very diverse range of technological advancements, of which most notably in the context of Higher Education is the emergence of smart ICT devices. Being born in the 21<sup>st</sup> century means being surrounded by technology in every sphere of life, our students are characterised as 21<sup>st</sup> century learners mainly because they are surrounded by technology at home, in social environments and in their learning environments. Further to this they are also referred to as generation Y, digital natives, net generation and many more. Cook & Noss (2010) argue that "whilst new forms of media are clearly significant in shaping 'digital natives' practice, their engagement with digital media is complex and differentiated, and needs to be interpreted taking account their competence levels". This is true as being born in a century where there are new developments does not necessarily mean you are knowledgeable or competent in their use. One might be aware of what's available in his/her environment but might not necessary be well vest in its use.

Therefore due to the advancement of information and communication technologies (ICTs) and all the connotations that go with our learners (digital natives, 21<sup>st</sup> century learners and generations Y, net generation), learners surrounded by a diverse range of technologies, it has become impossible to ignore the implications of these technologies for teaching and learning. Technologies such as Learning Management Systems (LMSs) just by their naming are advocated as being designed to enhance teaching and learning and others such as blogs and wikis which are appropriated for educational purposes have much potential to transform lecturers' practices with regard to teaching. In order to realise the potential of these digital technologies, it is appropriate that we study the enablements and constraints that condition the use of these digital technologies in the teaching and learning environment.

Universities also feel pressure to adhere to new developments in the higher education sector. Since the University does not operate in isolation from other institutions of higher learning, it too has had to respond to global and national developments. The recent introduction of e-learning at the institution is believed to be one of the responses to the global trends and to imperatives of dealing with skills shortages and facilitating the needs of the 21<sup>st</sup> century learner in this particular context. In addition, e-learning is also meant to support lecturers with teaching and learning challenges. Innovations like the introduction of information and communication technologies (ICTs) have played a major role in changing how the Higher Education sector responds to new innovations. Industry and the workplace are the biggest drivers of ICT enabled environments (Peansupap & Walker, 2005). Since ICTs are surrounding the 21st century learner in every aspect of their lives, inside and outside the university, it is important to engage students with ICTs within the university. The flexibility of social networking software and other collaboration tools that are emerging today support constructivist environments that get to inspire, promote, and meet the needs of the 21st-century learner (Beldarrain, 2006).

In light of challenges faced by lecturers related to non-attendance of classes, teaching across campuses, large classes and lack of resources, the University wanted to investigate new strategies of supporting lecturers in improving the teaching and learning experience at the institution with the hope that these new strategies would address other challenges such as student drop-out rates and throughput rates. The introduction of an ICT tool in the teaching and learning environment was seen as one of the strategies that would assist in supporting and enhancing the teaching and learning environment in the institution. This becomes the rational why the university introduced Blackboard.

Due to the residential nature of the University, a Blended Learning approach through the integration of ICTs into teaching and learning was felt to be appropriate. There are many

definitions of Blended Learning, the simplest is by Laurillard (2002) who describes Blended Learning “as an approach to e-learning that combines face-to-face interaction with the use of ICTs”. This definition simplifies what Blended Learning means for this study. Another description is offered by Graham (2006, p4) defines Blended Learning as “the combination of the instruction from two historically separate models of teaching and learning: traditional face-to-face learning systems and distributed learning systems with an emphasis on the role of computer-based technologies”. Institutions should however be mindful that this e-Learning concept approached through Blended Learning brings with it an entirely new vocabulary, adjustment of institutional policies and structures, and substantial change in institutional budgets (Czerniewicz & Brown, 2005).

Czerniewicz, Ravjee, & Mlitwa (2006) place e-learning as one in a range of ICT-enhanced practices in universities: from the provision of e-mail, online journals, and networked libraries, to the development of creative software solutions for information management tasks in teaching, research and all sorts of institutional administrative systems for online registration, finance, human resources, student performance data, course evaluations and so on. Czerniewicz *and colleagues* (2006) further argue that these new ICT-enhanced practices have provoked a range of issues around online pedagogies, patterns of access and of exclusion, increasing ICT costs in the context of unequal resources and competing institutional priorities, and the relation of e-learning practices to other institutional interventions seeking to transform the colonial fabric and cultures of South African Higher Education Institutions. It is therefore useful to view ICTs as “one thread in a complex net of transformation, including historical redress, curriculum transformation, diversity, equity and so on” (Czerniewicz, Ravjee, & Mlitwa, 2006, p. 43).

For these reasons, the 2009-2016 University strategic plan foregrounded e-learning as one of its strategic priorities. In response to this the e-learning Unit, a unit within the Teaching and Learning Centre (TLC) at the University, pilot projected the integration of Blackboard, a Learning Management System (LMS) into teaching and learning. The rationale behind the selection of the LMS was mainly that it was one of the most widely used e-learning technologies across the South African Higher Education Landscape, which meant there was available support for new implementers and it encompassed within it many tools, which could be used for different teaching and learning needs. The pilot project inspired this research, withholding all the other reasons for introduction of Blackboard and the lecturers challenges and the University strategic priorities, I saw a need to study how lecturers would experience this intervention in the context of the University. Since it was a new technology even for the e-learning unit, an emerging technology within the context of the University, this

meant the research would assist in informing the e-learning Unit about better ways of supporting lecturers who use Blackboard for teaching and learning in future. A detailed description of the pilot project is outlined in Chapter 2 of this study. Veletsianos (2010.) defines emerging technologies “as tools, concepts, innovations, and advancements utilised in diverse educational settings (including distance, face-to-face and hybrid forms of education) to serve varied educational purposes”.

### **1.3 Research Goal**

The aim of this study is to develop an understanding of the experiences of lecturers working in a blended teaching and learning environment, in order to inform the nature of support needed from the e-Learning Unit for future rollout of the LMS.

### **1.4 Research Question**

To achieve this research goal, the following research questions will be addressed:

- What are the lecturers’ beliefs about teaching and learning in relation to engagement with ICTs in Blended Learning environments?
- What conditions can be identified which might enable or constrain lecturers engagement with ICTs in Blended Learning environments?

### **1.5 Anticipated value of the study**

The University may find the results and recommendations of this study useful for informing policies and implementation strategies. The outcomes of the study are intended to be used for strategic planning, monitoring and evaluation of e-learning implementation and support within the institution. Similarly, this research report could be a potentially valuable resource for other South African Higher Education Institutions, particularly those who share historical and cultural contextual features with the University.

### **1.6 Outline of this report**

This section offers a detailed outline of each chapter in the research report which is divided into eight chapters. Figure 1.1 provides a diagrammatical representation of the way in which the chapters are structured:

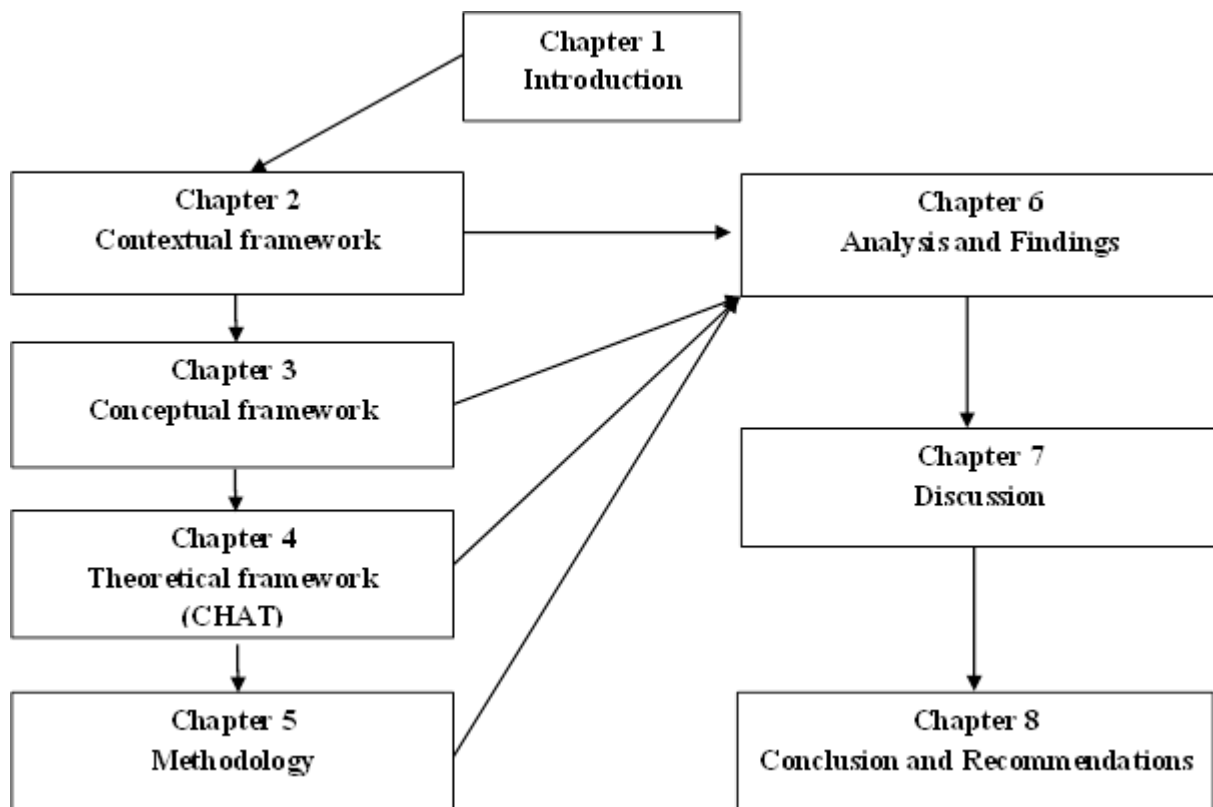


Figure 1.1 Outline of this research report

The introduction to the study in Chapter One outlines the background and rationale, the goals, as well as the primary research question guiding the study. This chapter also highlights the anticipated value of the study.

Chapter Two describes a detailed analysis of the context of the e-learning pilot project. The contextual framework is defined in terms of international, national, provincial and local trends of ICTs in Education. Internationally, ICTs are seen to be promoting access and flexibility (Bonk & Graham, 2005) by enabling educators worldwide to engage students anywhere and at any time using technology enhanced approaches (Fallows & Bhanot, 2002). By adopting a renewal framework called the *New Partnership for Africa's Development* (NEPAD) which identifies ICTs as an integral part of teaching and learning in Higher Education (Department of Education, 2004), the continent of Africa has also followed the trend. Similarly, through the White Paper on e-Education which sets out a vision of increasing access to learning opportunities, improving the quality of learning and teaching and delivering opportunities for lifelong learning (Department of Education, 2001), South Africa has followed suit. The role of ICTs in improving teaching and learning is also reflected in the National Plan for Higher Education in South Africa (Department of Education, 2001). This chapter further outlines the historical, social and demographic context of the University, detailing its strategic initiatives.

Chapter Three discusses the conceptual framework with focus on teaching and learning technologies used in the classroom. A conceptual framework is “a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation” (Reichel & Ramey, 1987). Reichel & Ramey (1987) further argue that when clearly articulated a conceptual framework has potential usefulness as a tool to scaffold research and therefore, to assist a researcher to make meaning of subsequent findings. This chapter therefore addresses the concepts related to the use of ICTs in Education such as *e-learning* and *Blended Learning*, including the use of *learning management systems*. The e-learning pilot project investigates the introduction of a new technology (an LMS called Blackboard) into the teaching and learning of different departments.

According to Robson (1973), a theoretical framework allows the researcher to decide what the important features in a study are, which relationships are likely to be important, what data is to be collected and how it will be analysed. Chapter Four discusses Critical Realism (CR) in relation to Social Realism as a meta-theory for this study alongside Activity Theory (AT) as a substantive analytical framework for this research. A brief discussion on the philosophical underpinning and the development of Critical Realism, Social Realist Theory and Activity Theory are presented with explanations of their relevance to this research.

Based on the foundations provided in Chapters Two to Four, Chapter Five describes the methodology used in the study. Methodology is understood here to encompass the research paradigm, the research approach and research design, including the data collection and data analysis methods, instruments, sampling procedures and validation strategies.

Chapter Six outlines the findings of this study, looking at each case in detail and the implications these may have. This chapter considers the findings in relation to how the participants' views were interpreted.

Chapter Seven consists of a discussion of the findings presented in Chapter Six. The chapter gives a reflection on the main findings, the research process and lessons learnt from the research.

The final chapter, Chapter Eight, summarises the research findings, draws conclusions and makes recommendations.

## **1.7 Summary**

This chapter has provided an introduction to the research, outlining the background of the study in the context of the Higher Education restructuring processes and challenges that

face learners and lecturers. The research goal including the research questions have been outlined, ending with the anticipated value of the study and an outline of this document. The next chapter will focus on a detailed analysis of the international, national, provincial and local context of the study.

## **2 Contextual Framework**

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### **2.1 Introduction**

Chapter One introduced the background of the research study. In view of the research goal and the research question outlined in that chapter, this chapter provides a detailed analysis of the context of this study. The contextual considerations in this study focus on four levels: international, national, provincial and local (institutional).

In discussing these areas above, the main focus will be on the central concepts around ICTs in Higher Education teaching and learning and trends in the HE sector.

### **2.2 The International Context**

ICTs are one of the biggest enablements of globalization. Because of ICTs we are today able to communicate, view and access the global markets and educational facilities without travelling outside the borders of our countries. As acknowledged in the National Plan for Higher Education of the Department of Education (2001), the expansion of ICTs is driving significant change in many aspects of human endeavour worldwide. It therefore becomes imperative to look at how our context relates or is influenced by the rest of the world with regard to the Higher Educational environment. This discussion therefore explores the international context in relation to ICTs in teaching and learning, specifically in the Higher Education sector.

Higher Education in the United States for example, has been in the forefront in the educational use of ICT (Conole, De Laat, Dillon, & Darby, 2008). Recent evidence from the United States Department of Education shows that benefits from Blended Learning instruction have served to strengthen the use of ICTs in teaching and learning (Means, Toyama, Murphy, Bakia and Jones 2009, cited by Westberry, 2009). According to a 2009 U.S. Department of Education study online learning has major advantages of face-to-face instruction, one of which is that students who participated in blended learning environments performed well in their studies (Means, Toyama, Murphy, Bakia & Jones, 2009). According to Cantoni, Cellario, and Porta (2004) some of the benefits of e-Learning include that it is usually less expensive to deliver; students can pace themselves; it saves time as learners can skip material they already know; it provides consistent content (in contrast to traditional learning where different teachers may teach different material about the same subject), it provides flexibility as it works from anywhere and anytime (e-learners can take training sessions when they want); it can be updated easily and quickly (online e-learning sessions

are especially easy to keep up-to-date because the updated materials are simply uploaded to a server); it can lead to an increased retention and a stronger grasp on the subject (because of the many elements that are combined in e-learning to reinforce the message, such as video, audio, quizzes, interaction, etc.); and it can be easily managed for large groups of students. E-learning can improve retention by varying the types of content (images, sounds and text work together), creating interaction that engages the attention (games, quizzes, etc.), providing immediate feedback, encouraging interaction with other e-learners and e-instructors (for example, chat rooms, discussion boards, instant messaging and e-mail all offer effective interaction for e-learners). Moreover, since they can customize the learning material to their own needs, students have more control over the learning process and have the possibility to better understand the material, leading to a faster learning curve, compared to instructor-led training. The delivery of content in smaller units may contribute further to a more lasting learning effect. Students taking an online course may have the opportunity to enter a risk-free simulation environment in which they can make mistakes without directly exposing themselves, eventually receiving feedback on the consequences of their actions. This characteristic is particularly valuable when trying to learn soft skills, such as leadership and decision-making.

On the other hand, disadvantages and risks of e-learning may include the following: it may cost more to develop, it requires new skills in content producers and still has to clearly demonstrate a return on investment. Additionally, related technology may be intimidating, confusing or simply frustrating, lacking part of the informal social interaction and face-to-face contact of traditional classroom training. Enabling technology might also be costly, especially in case of advanced visually-rich content. Moreover, e-learning requires more responsibility and self-discipline for the learner to keep up with a more open and unconstrained learning process and schedule (*ibid.*).

For lecturers to realise the benefits outlined above they would have to carefully plan, develop and design their materials and courses. In a white paper, "The Future of Higher Education" (United Kingdom Government, 2003), the British Government set out a vision for a Higher Education system characterised by inclusion, excellence, flexibility and collaboration. According to the 'Sloan Consortium' (2005) of the UK, three formats are identified based on delivery modes and proportion of content delivered online: "completely online courses, blended courses, and web-facilitated courses. In all these formats, LMSs are an integral tool for facilitating exciting, meaningful, and active learning experiences." The United Kingdom has identified e-Learning as an important factor in addressing national priorities and the BECTA report (Becta Report, 2008, p.

96) contends that “there is an increasing body of evidence on how technology can support the wider education priorities of raising achievement, narrowing achievement gaps, engaging disadvantaged and vulnerable learners and improving capacity, quality and efficiency.” The BECTA report becomes relevant in ICT studies as it shifts emphasis from researching about the impact of specific technologies towards researching the impact of learner engagement with ICT as a component of their learning experience (Cook & Noss, 2010).

The BECTA report reiterates the fact that use of ICT has become highly differentiated and personalised, bringing in a very diverse classroom environment. This raises the issue of Personal Learning Environments (PLE). Attwell (2007) explains PLE's as being comprised of all the different tools we may use in our everyday life for learning. Personal Learning Environments are almost like spaces online or otherwise that we create in order to do things more efficiently, and these spaces may encompass different types of technologies. Attwell further adds that institutions are attempting to provide Personal Learning kind of environments that are linked to institutional Learning Management Systems. These environments may not be visible in teaching and learning as everyone uses their space and environment independent of the other, hence called personal learning environment. The important aspect is that they have been provided for. Attwell G. (2007) argues that Personal Learning Environments are not software but an approach to the use of new technologies for learning. PLEs provide learners with a choice in selecting which device and software they want to use for both their social and learning environments.

Connolly and Stansfield (2006) reiterate how “e-learning has profoundly changed many aspects of society and inevitably, is having a significant impact on Higher Education”, as it is now influencing how we teach and learn in Higher Education. ICTs promote access and flexibility (Bonk & Graham, 2005) by enabling educators worldwide to engage with learners anywhere and at any time using technology enhanced approaches (Fallows & Bhanot, 2002).

Higher Education Institutions have come to be characterised by the use of many technological devices to enhance teaching and learning. A number of studies outline the enablers, challenges and risks that come with the use of technology in the teaching and learning environments. Reuben's (2008) study on social media usage, for example, shows Facebook and YouTube as the most commonly used technologies across the United States, Australia, Canada and New Zealand. Burke, Marlow and Lento (2010) move beyond a mere description of social network dynamics towards an exploration of the effects of social media use on specific outcomes of programmes. In exploring educators' experiences of wikis,

Moxley (2006) argues that educators are quickly embracing wikis and consequently stimulate many other educators to set up wikis of their own to teach other educators how to implement this technology tool. Beldarrain (2007) argues that unlike blogs that are chronologically organized, wiki pages are loosely structured but are linked in different ways.

Although part of the global context, Africa is categorized as a developing continent as it lacks basic technological infrastructure which widens the technological gap, which is also one of its biggest challenges. As part of Africa's strategy to come closer to being on par with the developed countries, Africa adopted the 'New Partnership for Africa's Development' (NEPAD), a renewal framework which prioritized ICTs in its development and in bridging the digital divide between Africa and the developed world (Department of Education, 2004).

These global trends render it impossible to ignore the integral role that ICTs can potentially play in our local environments by initiating many changes in our teaching and learning approaches. Higher Education Institutions have to respond appropriately to accommodate the needs of the learners in a context of diverse technological access (Lomas & Oblinger 2006, Pletka, 2007, cited by Westberry, 2009).

### **2.3 The National Context**

This section addresses the South Africa context, in particular strategies aimed at bridging the digital divide through supporting the integration of technology in the teaching and learning environment. A number of national policy documents argue that using ICTs has the potential to add value to education by improving teaching and learning and contributing to transformation. These include, the National Plan for Higher Education (Department of Education, 2001), the National Research and Development Strategy (Department of Arts, Culture, Science and Technology, 2002), the National Research and Technology Foresight ICT Report (Department of Science and Technology, 2000), and the White Paper on e-Education (Department of Education, 2003).

According to the South African White Paper on e-Education (Department of Education, 2003) the introduction of ICTs in education represents an important part of Government's strategy to improve the quality of learning and teaching across the education and training system. The intention behind the e-Education policy is to focus on learning and teaching for a new generation of young people who are growing up in a digital world and are comfortable with using technology. The aim of the e-Education policy is not only to build technical skills, but to also extend and enrich educational experiences across the curriculum (Department of Education, 2003).

The White Paper on e-Education sets out a vision of creating access to learning opportunities, improving the quality of learning and teaching and delivering lifelong learning (Department of Education, Government of South Africa, 2003). e-Learning has an increasingly important role to play in realizing this vision. The role of ICTs in improving teaching and learning are also reflected in the National Plan for Higher Education (Department of Education, 2001). In the light of the above-mentioned white paper statements there seems to be a deep appreciation for the potential benefits of ICT for development.

Despite these encouraging statements regarding the role of ICTs in teaching and learning, the literature is less confident about ICT implementation across South African Institutions of Higher Learning which demonstrates huge variations across South African Higher Education Institutions (Czerniewicz, 2007). Czerniewicz (2007, p.89) argues that “this reflects the variety in organisational cultures and approaches as well as varied learner communities served by different institutions. So each institution is at a different stage in the adoption of technology or ICTs”.

The notion of e-Learning, commonly understood as “learning facilitated online through network technologies” (Garrison & Anderson, 2003) has emerged across South African Higher Education Institutions since the 1990s (Czerniewicz, Ravjee, & Mlitwa, 2006). As a result of the introduction of e-Learning practices, an entirely new vocabulary has emerged in institutional strategy and policy documents; new structures and substantial changes in institutional budgets encompasses these new developments (Czerniewicz & Brown, 2005). Practical examples of these changes include technology use for administrative functions which has become common place in Higher Education. Other examples include ubiquitous use of email, online applications and registrations. In the context of teaching and learning, course materials are made available online for students to access from anywhere anytime.

“e-Learning also appears as one of many ICT-enhanced practices in universities from the provision of e-mail, online journals, and networked libraries, to the development of creative software solutions for information management tasks in teaching, research and all sorts of institutional administrative systems for online registration, finance, human resources, student performance data, course evaluations and so on” (Czerniewicz *et al.*, 2006, p. 43).

These new practices have introduced a range of issues around online pedagogies. It is therefore useful to view ICTs as “one thread in a complex net of transformation, including historical redress, curriculum transformation, diversity, equity and so on” (Czerniewicz *et al.*, 2006, p. 43). Further to the above, Brown and Gachago (2013) argue that lecturers at South

African universities are using emerging technologies in their teaching, but that the rate of adoption varies and that there are also similarities and differences compared to the use of emerging technologies internationally. Technologies like blogging, podcasting or mobile technologies are used by many educators in the South African Higher Education landscape. Other technologies that have attracted interest in Higher Education globally, such as Twitter and ePortfolios, have not been taken up in South African Higher Education in any meaningful .

## **2.4 The Provincial Context**

The Eastern Cape is one of South Africa's mostly rural provinces. From general education through to further and Higher Education the Province is faced with many challenges in its educational system. Since many schools are still without electricity and the backlog of classrooms are the highest in the country, the Province seem to be faced with bigger problems than having computers in classrooms (Department of Education, 2005).

A number of initiatives at school, FET and Higher Education levels are aimed at addressing the skills gap in the Province. According to the Eastern Cape Information and Communication Technology Strategy (2009-2014, p.39) one of the eight strategic priorities involves "strengthening education, and building a skills and human resource base", specifically through research in academia. One of the highlights of the Eastern Cape Province strategy on ICTs is connecting universities, colleges, secondary schools and primary schools. Understandably the main focus of the strategy is still on developing infrastructure. However, the strategy also mentions issues related to curricula integration in primary and secondary schools.

Another critical point revealed in the strategy states that the "Eastern Province aspires to act as a catalyst in the modernisation of the Province's educational system using ICTs to improve and expand access to education, training, research resources, facilities, the quality of education and training and make the educational system responsive to the needs and requirements of the economy and society with specific reference to the development of the information and knowledge based economy and society". With regard to Higher Education, the strategy document claims that "ICT should be utilised to enable Human Resource Development in the Province (e.g. harnessing ICT skills within educational institutions, creating an environment conducive to gaining ICT knowledge through e-Learning based programmes)" (Eastern Cape Information and Communication Technology Strategy, 2009-2014). According to the Eastern Cape ICT strategy (2009-2014), collaborating with academic

institutions presents an opportunity for Government to address the skills shortage at an academic level.

The University of Fort Hare has responded to this imperative of the provincial government by placing e-Learning as one of its strategic objectives, with the introduction of a Learning Management System being a very important implementation of this strategy.

## **2.5 The Local/Institutional Context**

The University of Fort Hare is a rural residential institution comprising three widely dispersed campuses in the Eastern Cape. These campuses are located in three Eastern Cape towns. Campus A is the main Campus and offers degree programmes in the Faculties of Education, Social Science and Humanities, Science and Agriculture and, Management and Commerce. Law degrees are offered on Campus B, except for a small number law courses that cut across faculties that are also offered on Campus A. Campus B offers some but not all degree programmes. Campus C offers Continuing Education programmes and some part-time degree programmes for the Faculty of Management and Commerce.

In an attempt to improve and ensure quality of education the University has undergone considerable transformation with regard to policies and strategies since 2000. The University's Strategic Plan 2000 (University, 2004), set out a new vision, mission, corporate goals and institutional activities aimed at laying a basis for the comprehensive reconstruction and development of the University into the 21<sup>st</sup> century. An Institutional Operating Plan (IOP) developed subsequently in 2004 provided the guiding framework for the University's development from 2004 until 2009. One of the primary outcomes of the IOP 2004 - 2009 was the establishment of the Teaching and Learning Centre comprising of four Units: the Teaching Development Unit, the Student Development Unit, the Co-operative Education Unit and the ICT Unit, the latter subsequently renamed the e-Learning Unit (University, 2004). In 2009 a third Strategic Plan was prepared for the period 2009 to 2016 (University, 2009), with a focus on developing "a critical scholarly culture encouraging context driven and research-based transformative and innovative teaching and learning practices that involve the integration of technology" (University, 2009, p. 38). As one of its objectives, this new Institutional Strategic Plan (SP 2009-2016), placed a high priority on e-Learning, currently referred to as Technology Enhanced Learning (TEL).

Since the ICT Unit initially focused on providing computer literacy training, University lecturers received training towards the International Computer Driving License (ICDL) while students were allowed to register for a computer literacy course, either as a short course or

as a module in an academic programme. In response to the University strategy to explore the use of ICTs for supporting teaching and learning, the ICT Unit of the Teaching and Learning Centre (TLC) changed its name to e-Learning Unit in 2007. This name change signified the prioritisation of e-Learning as one of the Institution's strategic focus areas thereby aligning the work of the e-Learning Unit with the Institution's strategic objectives. In response to this new focus on supporting lecturers in integrating ICTs in teaching and learning the e-Learning Unit introduced an e-Learning pilot project in 2009. This pilot project involved the establishment of a Blended Learning environment through the implementation of the Blackboard learning management system. The decision to pilot project a learning management system was also in response to a call from academic lecturers and management to find ways of addressing challenges associated with large classes, lecture attendance and low throughput rates.

The whole process of initiating a pilot project for e-learning suggests a review of teaching and learning policies at a later stage. The policies that would be affected by the introduction of ICTs in teaching and learning would be the Teaching and Learning policy, Assessment policy, Evaluation policy and ICT policy.

The *Teaching and Learning Policy* highlights the University commitment to teaching and learning and its support of research-based innovative practices:

*“The university’s commitment to teaching and learning excellence requires effective teaching to be research-based, innovative, challenging, responsive to the diverse needs of learners, and underpinned by sound disciplinary and pedagogical principles. Teaching and learning excellence should be pursued deliberately by all academic staff who, as professional educators, take control of their teaching practice and seek to reflect on, research and improve it.”*

Although the University of Fort Hare has not developed a policy on the use of technology in teaching and learning, these significant principles give agency to lecturers in responding to challenges faced in teaching and learning and symbolises support in view of innovations that will enhance the teaching and learning environment. The Teaching and Learning Policy and the University Strategic Plan 2009-2016 are the structural mechanism that drive and support lecturers in enhancing their teaching and learning through technology.

The *Evaluation Policy* also has a significant role to play in the development of teaching and learning, as is evident in the following quotation from the policy:

*“The best way to improve teaching is to inquire into the effects of one’s teaching on student learning ... Good teaching is open to change; it involves constantly trying to find out what the effects of instruction are on learning, and modifying that instruction in the light of evidence collected. “*

Evaluation is therefore viewed as an appropriate mechanism to enhance teaching and learning.

Similarly, the *Recognition of Prior Learning Policy* supports the development of teaching and Learning. In this policy the University states that *“it is committed to the objectives as outlined by SAQA through its acknowledgement that there are prospective students with valuable knowledge and skills gained through either formal, informal or non-formal means who could benefit from formal higher education.”*

Finally, as mentioned earlier, the *University Strategic Plan 2009 to 2016* is explicit about the development of e-Learning as one of its strategic priorities as the Strategic Plan highlights its aim of promoting quality education that *“provides flexibility of delivery to include technology-enabled learning where appropriate and feasible”*.

The above policies suggest a positive move and support for the teaching and learning environment, offering an enabling framework for such initiatives as the implementation of Blackboard in a Blended Learning setting.

## **2.6 The Pilot project**

Early in 2008 the Teaching and Learning Centre (TLC) was tasked to find ways in which lecturers could be assisted and supported in managing the teaching and learning challenges listed above. Consequently, the e-learning Unit, which is one of the four units in the TLC, was commissioned to investigate ways in which learning technologies can assist with addressing these challenges, and in response, decided to explore the use of a learning management system (LMS) called Blackboard. The reason for starting with a pilot project was to develop an understanding around challenges of implementation before full rollout to a bigger number of departments.

The pilot project entailed the establishment of a Blended Learning environment by introducing an online learning management system in a face-to-face teaching and learning setting. Twelve participants, including myself, in twelve departments spread across two of the three campuses were invited to participate in the pilot project. Approximately three

hundred students from these twelve departments, ranging from first year to postgraduate students and lecturers, participated in the pilot project.

While the initial duration of the pilot project was set for twelve months, it was later extended to eighteen months. All lecturers participating in the pilot project received six months' training on the use of Blackboard. This training comprised of a one week face-to-face introductory session at the start of the project followed by online training spread over the next six months. The training concluded with a three-day face-to-face session on implementation. One of the outcomes of the pilot project required lecturers to design and deliver a part of their coursework using the LMS tools. Students involved in the pilot project implementation were offered a once-off face-to-face lab introduction to Blackboard by the two e-Learning Unit facilitators who had already facilitated training in Blackboard for both campuses.

The rationale behind my participation in the pilot project and in researching the project was to gain first-hand experience of the nature of the challenges experienced by lecturers as this will enable me to develop an understanding of the nature and extent of the support required by lecturers, which in turn will inform my work as a member in the e-learning Unit.

## **2.7 Personal Context**

I am currently working as an e-learning consultant in the e-Learning Unit of the Teaching and Learning Centre. The e-Learning Unit seeks to promote technology-enhanced learning through encouraging and supporting research-based and context-driven transformative and innovative teaching and learning practices involving the integration of technology. Since the e-Learning Unit is tasked with supporting academic lecturers in their ICT initiatives, I saw it fit to volunteer to participate in the pilot project implementation as this would enable me to experience the lecturer and student needs and challenges first-hand.

## **2.8 Summary**

The chapter highlighted the trends and interventions of the Higher Education sector from an international, national, provincial, local and personal perspective, with specific reference to e-learning opportunities and challenges. Government initiatives such as the white paper on e-Education, and the University strategic objectives and change management processes were discussed to provide a rationale for the use of e-learning. The following chapter discusses the conceptual framework for this study.

## 3 Conceptual Framework

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### 3.1 Introduction

In Chapter Two the contextual framework that forms a foundation for this research was discussed to provide along with Chapter One, an introduction and context for this research. This chapter deals with the concepts that frame the study. A conceptual framework is defined as “a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation” (Reichel & Ramey, 1987). The following concepts will be dealt with in more depth.

- **ICTs** is an acronym for Information and Communication Technologies, diverse sets of technological tools and resources used to communicate and create, disseminate, store and manage information.
- **e-Learning** refers to electronic learning, i.e. learning using electronic devices.
- **Blended Learning** involves face-to-face instruction combined with ICT tools in its delivery.
- **Online learning** refers to learning through web technologies or through the Internet.
- **Learning Management System (LMS)** refers to a collection of e-Learning tools available through a common user interface or platform. It is synonymous with Virtual Learning Environment (VLE).

The terms *synchronous and asynchronous* refer to the timing of interactions. In asynchronous systems learning is delivered at different times at the convenience of the participants while synchronous systems require participants to be engaged at a specified time ([http://www.keystone.edu/academics-/online learning/onlinelearningdefined.dot](http://www.keystone.edu/academics-/onlinelearning/onlinelearningdefined.dot)).

This study investigates the use of ICTs within a Blended Learning environment and focus specifically on the use of an LMS called Blackboard in a face-to-face setting, as is represented in Figure 3.1 below.

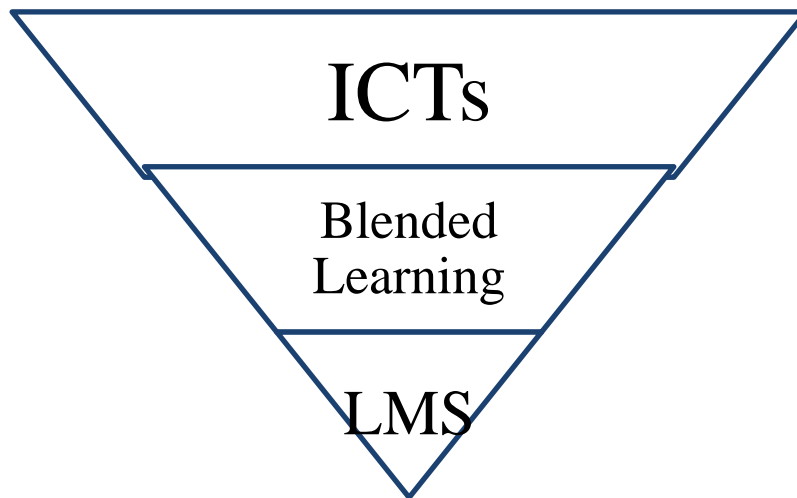


Figure 3.1 An outline of the terms represented in the conceptual framework

### **3.2 Information and Communication Technologies (ICTs)**

ICTs (Information and Communication Technologies) include personal computers, TV's, radios, scanners, pods, tablets, software and many more. Innovations that use ICTs in education are impossible to ignore for teaching and learning purposes as any 21st Century student is bound to come across such technologies in the workplace or elsewhere. It is therefore vital to incorporate these technologies in teaching and learning. According to Fallows & Bhanot (2002) the availability of powerful ICT tools brings with it the need to ensure that the tools are used in ways that best support student learning. There are a range of these technologies that have been introduced in the education and training environment, through applications such as web logs, wikis, tools and applications for creating and sharing multimedia and tools social bookmarking and book collections which are shared for different personal knowledge acquisition (Attwell, 2007). Literature has identified key factors that enable or constrain participation in learning activities supported by ICTs (Laurillard, 2002).

### **3.3 e-Learning**

Different researchers define e-Learning in different ways (Laurillard, 2002). I understand e-learning as learning that uses any form of electronic device to support teaching and learning.

Laurillard (2002) perceives e-Learning as a driver of active learning. She defines e-Learning as the use of any of the new technologies or applications in service of student learning or student support.

The term e-Learning covers different delivery models ranging from courses that are delivered fully online (with no face-to-face meetings) to courses that provide some face-to-face interaction and some online provision (sometimes referred to as "Blended Learning") (Laurillard, 2002). Garrison & Kanuka (2004) describes blended learning as face-to-face classes complemented with web-based materials. This style of learning is normally defined as the integration of traditional classroom methods with online activities (Macdonald, 2008).

Many terms are used interchangeably with e-learning. These include "online learning", "technology-enhanced learning", "blended education" and "Web-based learning" (Farrell, 1999). These forms of learning can utilise any electronic tool or medium ranging including audio, video, Web 2.0 technologies, social media and LMS's. The use of most of these technologies most often happens in controlled teaching and learning environments that are instructor led. The tools themselves are also good in supporting students with different learning styles.

Developments in Internet and multimedia are the basic enablements of e-learning (Tavangarian, Leypold, Nölting, Röser, & Voigt, 2004). Many Higher Education Institutions in South Africa have started introducing e-learning to enhance their teaching and learning activities (Czerniewicz & Hodgkinson-Williams, 2005). While for many South African HEIs the concept of e-learning seems to be closely related to the use of an LMS, some institutions conceptualise it broader to also include blogs, wikis, e-books, and so on. These newer ICT tools are often referred to as emerging technologies as they have not been used in any meaningful way in Higher Education before. Veletsianos (2010) defines emerging technologies "as tools, concepts, innovations and advancements utilised in diverse educational settings (including distance, face-to-face, and hybrid forms of education) to serve varied education-related purposes (e.g., instructional, social, and organisational).

### **3.4 Blended Learning**

Blended Learning is defined in various ways. According to Laurillard (2002) Blended Learning is an approach to education that combines face-to-face interaction with use of technologies; where the lecturer, student, problem and knowledge interact both through face-to-face and through the use of ICT for the purpose of learning. Graham (2006, p.4) defines Blended Learning as "the combination of the instruction from two historically

separate models of teaching and learning: traditional face-to-face learning systems and distributed learning systems with an emphasis on computer based technologies”.

e-Learning emphasises the high level of connectivity across space and time that is enabled through creating a network between student and student, student and lecturer, student and resources, lecturer and resources as well as the past and the present through availability of online resources of one course occurrence for a next occurrence (Laurillard, 2002). E-Learning is network-based (Internet or intranet) and computer mediated, includes teaching, learning and research (“education”), and highlights the distribution both of the control of learning and of the online learning and teaching materials among the students and lecturers (*ibid.*). The projected benefits of e-learning environments include access to materials anytime, anywhere and communication in collaborative environments across borders (Conole and Fill, 2005).

The specific manifestation of the Blended Learning approach referred to in this study is a face-to-face approach delivered in a lecture hall and an online component delivered through the LMS Blackboard.

### **3.5 Online Learning**

Online learning, sometimes referred to as e-Learning, is a form of distance education. Online courses are delivered over the Internet and can be accessed from a computer with a Web browser. Due to the contact mode employed in the pilot project investigated in this study, the concept of online learning did not have much currency. Instead the concept of e-Learning in a mix mode or Blended Learning setting was preferred.

### **3.6 Learning Management System (LMS)**

A Learning Management System or LMS is a web-based software program comprising a collection of different online tools and features. Lonn and Teasley (2009) explore uses and perceived benefits of using an LMS to support classroom teaching. Their findings suggest that both lecturers and students find LMSs valuable for efficient communication.

Activities or functions facilitated through an LMS include:

- Publishing course content online for students to access;
- Accessing and sharing appropriate resources for reference;

- Designing and conducting online assessment, assignments and tasks for students to do and submit;
- Posting mail messages and announcements; and
- Posting messages and participating in discussions with students.

The above Blackboard activities are facilitated through what are referred to as tools which can also be referred to as the menu items or key operations available in Blackboard, each having a different use and thus impact. Blackboard environments can operate either synchronously or asynchronously. The LMS used in this case study for the purpose of Blended Learning is called 'Blackboard' (Blackboard). Blackboard provides an online space where there are a variety of tools which can be used to enhance the teaching and learning environment. The rationale behind using Blackboard was that there was provision of training and technical support from the main supplier. See Figure 3. below for the explanation of the tools available in Blackboard.

### **3.7 Virtual Learning Environment**

Synonymous to a learning management system, a virtual learning environment (VLE) is a web-based system that models conventional face-to-face education by providing equivalent access to classes, class content, tests, homework, grades, assessments, and other external resources such as academic or museum website links ([http://en.wikipedia.org/wiki/Virtual\\_learning\\_environment](http://en.wikipedia.org/wiki/Virtual_learning_environment)). It is also a social space where students and lecturers interact through threaded discussions or chat rooms. It typically uses Web 2.0 tools and includes a content management system. Virtual learning spaces are said to use online components that can also be integrated with a physical learning or a face-to-face environment which may be referred to as Blended Learning.

Virtual learning can take place synchronously or asynchronously. In synchronous systems, participants meet in "Real-time" and teachers conduct live classes in virtual classrooms. Students can communicate through a microphone, through Chat rooms, or by writing on the board. In asynchronous learning, which is sometimes called "self-paced" learning, students are expected to complete lessons and assignments independently through the system, which is similar to what Blackboard tools can model in this study ([http://en.wikipedia.org/wiki/Virtual\\_learning\\_environment](http://en.wikipedia.org/wiki/Virtual_learning_environment)).

Organizational Tools	
Calendar	Enter important events and deadlines, and allow Students to enter their own events.
Search	Search for content in the course.
Syllabus	Provide course requirements, objectives, and policies.
Communication Tools	
Announcements	Post important information in a central location.
Chat room	Chat with other users in the course in real-time, or use the chat room whiteboard to display images.
Discussions	Post and respond to messages on specific topics.
Mail	Send messages to other users.
Roster	View profiles for course members. Users can edit their own profile.
Who's Online	Chat with other users who are logged in to the Learning System.
Student Learning Activities	
Assessments	Create quizzes, self-tests, and surveys.
Assignments	Create assignments for students to submit online. Students can work independently or in groups.
Goals	Create goals that list the qualitative and quantitative performance expected in your course.
Content Tools	
Learning Modules	Organize and present content and activities to students.
Local Content	Allow students to easily access large files from a portable medium, such as CD-ROM, instead of downloading the files from the Learning System.
Media Library	Create a glossary or image collection.
SCORM	Import SCORM-compliant packages, or modules, to be used as course content. SCORM modules can be added to the Home Page, other folders, and learning modules.
Web Links	Create links to Internet resources.
Student Tools	
My Files	Allow students to store their own files.
My Grades	Allow students to check their grades.
My Progress	Allow students to track their own progress.
Notes	Allow students to take notes.

Figure 3.2 A representation of the main tools and sub-tools available within Blackboard

### 3.8 Technology tools as support for teaching and learning

Over the centuries a range of tools have been used to support teaching and learning, from pens, paper, chalk board, to computers and data projectors and other digital technologies. Each of these technologies are tried and tested for the potential value in teaching and

learning until another newer technology emerges. Moore's (1995) technology adoption life-cycle identifies distinct patterns of uptake of new technologies by users.

Moore's adoption life cycle includes five categories of innovators, early adopters, early majority, late majority and laggards (Daniel, 1996):

- *Innovators* are the enthusiasts who like technology for its own sake.
- *Early Adopters* have the vision to adapt an emerging technology to an opportunity that is important to them.
- The *Early Majority* is the pragmatic solid citizens who do not like the risks of pioneering but are ready to use the advantages of tested technologies. They are the beginning of the mass market.
- The *Late Majority*,
- The laggards who represent about one-third of the population dislike discontinuous innovations and believe in tradition rather than progress.

Similarly Gladhard (2001) identifies different stages of technology integration: the entry stage, adoption stage, adaptation stage, appropriation stage and the invention stage.

- *Entry*: At entry level users learn the basics of using the new technology.
- *Adoption*: Users are able to use the new technology to support traditional instruction.
- *Adaptation*: At this stage the user integrates new technology into traditional practice, but adapts it according to their needs.
- *Appropriation*: This stage represents a focus on cooperative, project-based, and interdisciplinary work.
- *Invention*: Users are now able to discover new uses for technology tools.

These two models relate in that some early adopters may still lack knowledge of how to use technology. This means that they would need to start at the entry stage by acquiring a skill.

When this happens within a supportive environment it becomes possible to ascertain what challenges there are. Identifying the innovators or early majority and those users at entry level would be useful in developing a multi-layered approach to support staff at different levels of technological ability. Samarawickrema and Stacey (2007), 'found that safe adoption

environments recognizing career priorities of academics are a result of the continuous negotiation between the evolving institution and its innovative and creative staff'.

The literature identifies different reasons why early adopters are motivated to use technology. Eynon (2005) argues that educational reasons were the most important motivation for adopting ICTs amongst the participants in his study on using ICTs to enhance teaching and learning. Motivated by the educational needs that would be satisfied by the chosen technology, these participants identified suitable technologies based on their course outcomes. Bozalek, Gachago, Alexander, Watters, Wood, Ivala, and Herrington (2013) highlight constraints pertaining to the time it takes to adapt to the new environment and in keeping one motivated and not overwhelmed, and communication as vital, other constraints involving resources and bandwidth. In Samarawickrema and Stacey (2007) the following factors were mentioned as constraining; time, heavy workloads, the need to reconfigure learning materials to suit new environments, the demand for research output, training, the need to master new work practices, professional exposure, intellectual property issues, policy issues, funding and staff attitudes, impacted on the uptake of web-based learning. Whilst Vrasidas, Pattis, Panaou, Antonaki, Aravi, Avraamidou, Theodoridou and Zembylas (2010) give the following challenges in adopting emerging technologies; the amount of content and the length of the curriculum to be covered during a school year makes introducing technology difficult, as one is wrestling with time to finish the syllabus, that there is need for more time for planning and implementation and there needs to be collaborative and situated professional development.

With all the constraints and motivations in mind, Bozalek et al (2013) suggests effective practices that one can consider when introducing emerging technologies; “1) That one needs to consider that it takes time! 2) Use tools that are simple and easily accessible 3) Design for authentic learning 4) Engage with digital literacy skills 5) Provide scaffolding and guidance 6) Ensure motivation through ongoing communication 7) Create a safe space for discussion, collaboration and community building 8) Involve partners from within the institution and the community 9) Be aware of potential resistance in students and colleagues 10) Allow time for reflective practice during and after the course”.

The implementation of the Blackboard learning management system at the University of Ford Hare mirrors the experience of Eynon (2005). Having identified teaching and learning challenges of large classes, non-attendance of lectures, lack of resources and so on,

Blackboard was selected as it was seen to hold some promise for addressing these challenges. Even though lecturers were not familiar with a learning management system, some had basic technology fluency from experience while others were offered basic training through the ICDL. It can be argued that, by volunteering to participate in the pilot project, these lecturers can be seen as innovators even though they might have varying levels of technology competence (Gladhart, 2001).

### **3.9 Summary**

This chapter offered a conceptual framework of the key concepts used in the research project. Further to these categories in technology adoption and stages in technology integration were discussed. The next chapter will look at a description of the theoretical framework that underpins this study.

## 4 Theoretical Framework

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### 4.1 Introduction

This chapter gives a detailed overview of the theories that frame this study. Aspects of Critical and Social Realism are drawn on as meta-theory for this study, alongside Activity Theory as a substantive analytical framework. A brief description of the philosophical underpinnings and the developments of both theories is given, followed by the relevance of each to this study. The two frameworks will be discussed as follows:

- Critical Realism incorporating a Social Realist perspective (C/SR)
- Activity Theory (AT)
- The link between C/SR and AT

A theoretical framework is a “structure that guides research by relying on a formal theory ...constructed by using an established, coherent explanation of certain phenomena and relationships” (Eisenhart, Behm, & Romagnano, 1991, p. 51). Robson (1973) describes a theoretical framework “as something that allows the researcher to decide what the important features in a study are, which relationships are likely to be important, what data is to be collected and how it will be analysed” (Robson, 1973, p.502). This allows the researcher to determine the design and methodology for the study.

Aspects of Critical/Social Realism are used in this study as the meta-theoretical framework or overarching theory. In contrast, substantive theory is mainly descriptive, focused on the essence, or substance, of cases in a relational structure (Adelman, 2009) . The use of substantive theory may assist in discovering the essence of the instances and their categorical relationships (*ibid.*). Used as a substantive theoretical framework in this research, Activity Theory informs the analysis of the data.

Activity Theory as the substantive theory is descriptive in nature as it outlines the components of each case study in relation to each other. Social Realism is used to assist in digging deeper into the worlds of each of the study participants by bringing out the social and structural mechanisms. In this way Social Realism assists Activity Theory in offering a detailed analysis of the intricate nature of each case study.

In the next two sections an outline of the theories will be given. The first section will introduce and describe Critical Realism and Social Realist theory in relation to this study. The second section will discuss the use of Activity Theory as an analytical research tool.

## 4.2 Critical Realism (CR) incorporating a Social Realist (SR) perspective

In his book titled “Critical Realism: Essential Readings” Roy Bhaskar describes CR as a theory that is underpinned by “a philosophical approach that defends the critical and emancipatory potential of rational (scientific and philosophical) enquiry against both positivist, broadly defined, and 'postmodern' challenges”. It is an approach that emphasises the importance of distinguishing between epistemological and ontological questions and the significance of objectivity properly understood for a critical project (Bhaskar, 1998). It is a theory that puts emphasis on what we think we know and what really happens in the world out there.

According to Wikgren (2005, p.11), Critical Realists are concerned with “ontological depths and identifying causally efficacious mechanisms”. In the exploration of such ‘depths’ it is helpful to refer to Bhaskar’s notion of ‘stratification of Reality’. Bhaskar (1998), describes ‘stratified reality’ within three domains or elements of stratification: The Empirical, which is viewed as things that we can experience through our senses or perceptions of what is occurring or the way we perceive how things operate; the Actual, which includes the events that happen in the world outside and irrespective of our perception of them and the Real, mechanisms and structures that have causal powers which may or may not be exercised.

Critical Realism acknowledges that humans exist within social environments which are within the natural world and these environments operate within unique contexts, which are not seen by the natural eye and have to be realised in how we interpret the world. Many of the events in this natural world are caused by mechanisms which are not immediately obvious, yet they influence the way in which humans interpret the world. According to Sayer (2000) the aim of Critical Realist research is to uncover the mechanisms in the Real domain and their causal powers, acknowledging that these may or may not be exercised.

*“In the study of information seeking and use, the objects of our inquiry are Empirical events. We know, however, that events are not transparent, and in fact in most cases, require more than description. Regardless of the method, the work of theory is to explain the hidden powers – processes or mechanisms - that produce the effects or events that we study. According to the Critical Realist philosophy, the very possibility of social theory is based on the existence of Real social structures and systems that are emergent entities which operate independently of our conception of them, conditioning – but never determining – intentional agential activity, being nonetheless dependent on that human activity to endure or change (Archer, 1995; Willmott 1997, p.97). This way of thinking about science implies that Reality is*

*stratified. Events can be seen, but social mechanisms are not readily observable; they require theory and abstraction.”(Wikgren, M, p. 12)*

Building on the work of Bhaskar, Social Realist, Margaret Archer argues that the social world is made up of structural, cultural and agential emergent properties (Archer, 1996). Archer further argues that the social world is made up of ‘parts’ and ‘people’. The parts are understood to be structural and cultural systems, whilst the people are those agents who operate within these structures and cultural institutes (Archer, 1996). Archer holds that structural properties include systems, policies, hierarchical structures, and material resources captured in that environment. Cultural properties come as ideas, values, beliefs, rules that transcend from people who were there and those that are currently present in that environment. Agential properties of the people interacting in that environment exercise different sets of powers.

Figure 4.1 below is a diagrammatical representation of Bhaskar’s Critical Realist theory and Archer’s Social Realist theory combined into one framework to support analysis of data.

Critical Realism	Empirical - experience		Lecturer experiences	
	Actual – events		Blended Learning	
	Real - structures and mechanisms	Social Realism	Structure	Academic hierarchy Time Policies
			Culture	Beliefs, values, rules
Agency			Lecturer	

Figure 4.1 A representation of a Critical/Social Realist Perspective

In terms of this study at the domain of the Empirical, the focus is on the experience of the lecturers. At the domain of the Actual the focus is on the event of Blended Learning. How the event is experienced, is influenced by social structures and mechanisms at the domain of the Real. Together, Bhaskar’s Critical Realist philosophy and Archer’s Social Realist theory seem to offer an appropriate framework for exploring ICT use in Blended Learning in educational settings.

### 4.3 Activity Theory

Activity Theory (AT) is used as a substantive theory for this research. This theory forms the basis for the main analysis of exploring lecturer experiences of Blended Learning in this study. Activity Theory was developed by a Russian psychologist, Lev Semenovitch Vygotsky. His works were later developed further by two of his students Alexei Leont’ev and Yrjo

Engeström. This discussion will focus on these three theorists and their theoretical evolutions of the Activity Theory perspective.

Activity Theory theorizes that when individuals engage and interact with their environment, production of tools results (Roth & Lee, 2007). Activity Theory offers a lens through which researchers can analyse human activity systems. It focuses on the interaction of human activity and consciousness within its relevant environmental context (Jonassen, Peck, & Wilson 1999). Activity Theory is used in this research as a theoretical framework that guides the analysis and interpretation of data.

#### 4.3.1 Vygotsky's perspective (First generation Activity Theory)

The first generation Activity Theory was developed around the late 1978's by Vygotsky whose main focus was on "artefact-mediated and object oriented action". His perspective of Activity Theory was underpinned by historically-culturally situated units of analysis, which are meant to capture the individuals in context. Vygotsky held that individuals engage in actions which involve artefacts' such as computers, books or signs, which play a mediating role between themselves and their contexts in the process of the activity (*ibid.*).

Vygotsky used a triangle to show the concept of culturally mediated artefacts within an activity system. See diagram in Figure 4.2 below:

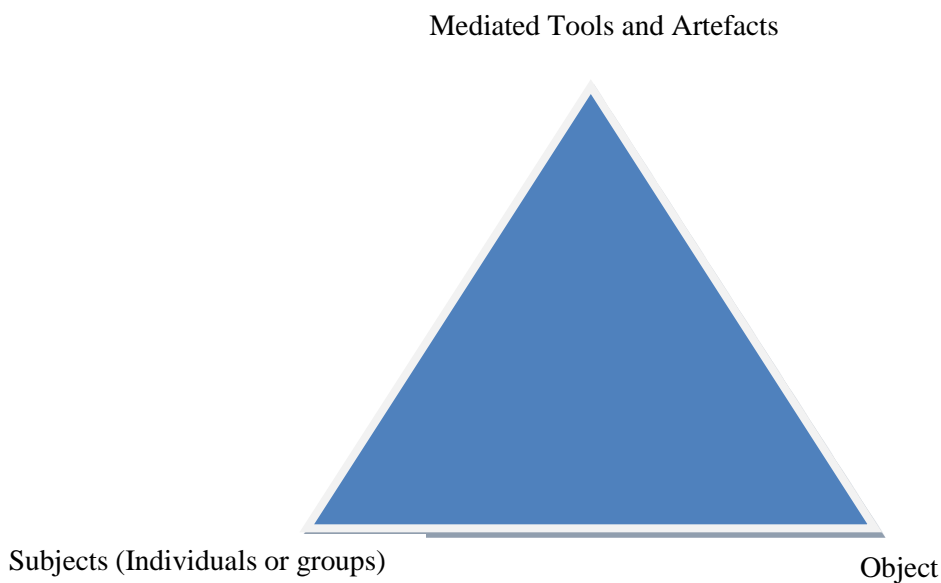


Figure 4.2 Vygotsky's perspective (First generation Activity Theory)

The above diagram depicts Vygotsky's (1978) concept of culturally mediated artefacts' interacting with human action in order to achieve outcomes in a specific context. The main concepts in Vygotsky's theory are activity systems, unit of analysis, mediated tools/artefacts, subjects and objects.

An activity system which is the main unit of analysis is made up of tools, which can be anything from a computer, to software, a mobile phone and clicker, used by the subject (which is the individual or group) to achieve an objective (object). In this study, the lecturers used Blackboard, a learning management system (LMS), as a conceptual tool to mediate their actions and those of their students in their teaching and learning environments.

#### 4.3.2 Leont'ev's perspective (Second generation Activity Theory)

The second generation Activity Theory was developed by Leont'ev, one of Vygotsky's students. He broadened the Activity Theory concept and triangle by adding the concepts of rules, division of labour and community (see Figure 4.3 below). According to Leont'ev the three components of the activity system are inseparable; these components should be studied in relation to each other and their context.

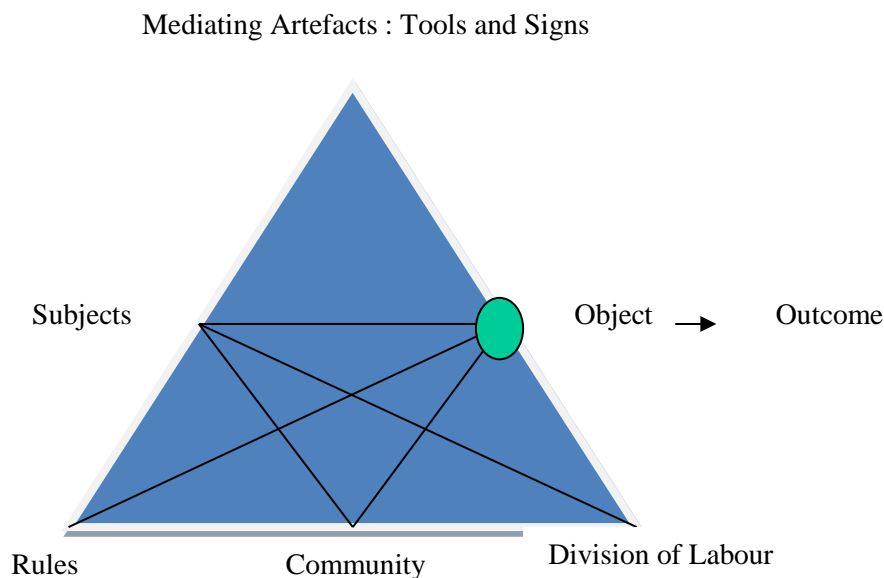


Figure 4.3 Leont'ev's perspective (Second generation Activity Theory)

Leont'ev advocates the study of artefacts as integral and inseparable components of human functioning but he argues that the focus of the study of mediation should be on its relationship with the other components of an activity system (Engeström, 1993).

### 4.3.3 Engeström's perspective (Third generation Activity Theory)

Engeström's (1999) perspective focusses on the combination of two or more activity systems as the unit of analysis. According to Engeström (1999) "the aim of the third generation of Activity Theory is to understand dialogues, multiple perspectives, and networks of interacting activity systems". His argument is that human activity can only be understood in relation to its contextual environment, which is socially and culturally mediated. Engeström's perspective can be represented diagrammatically as follows:

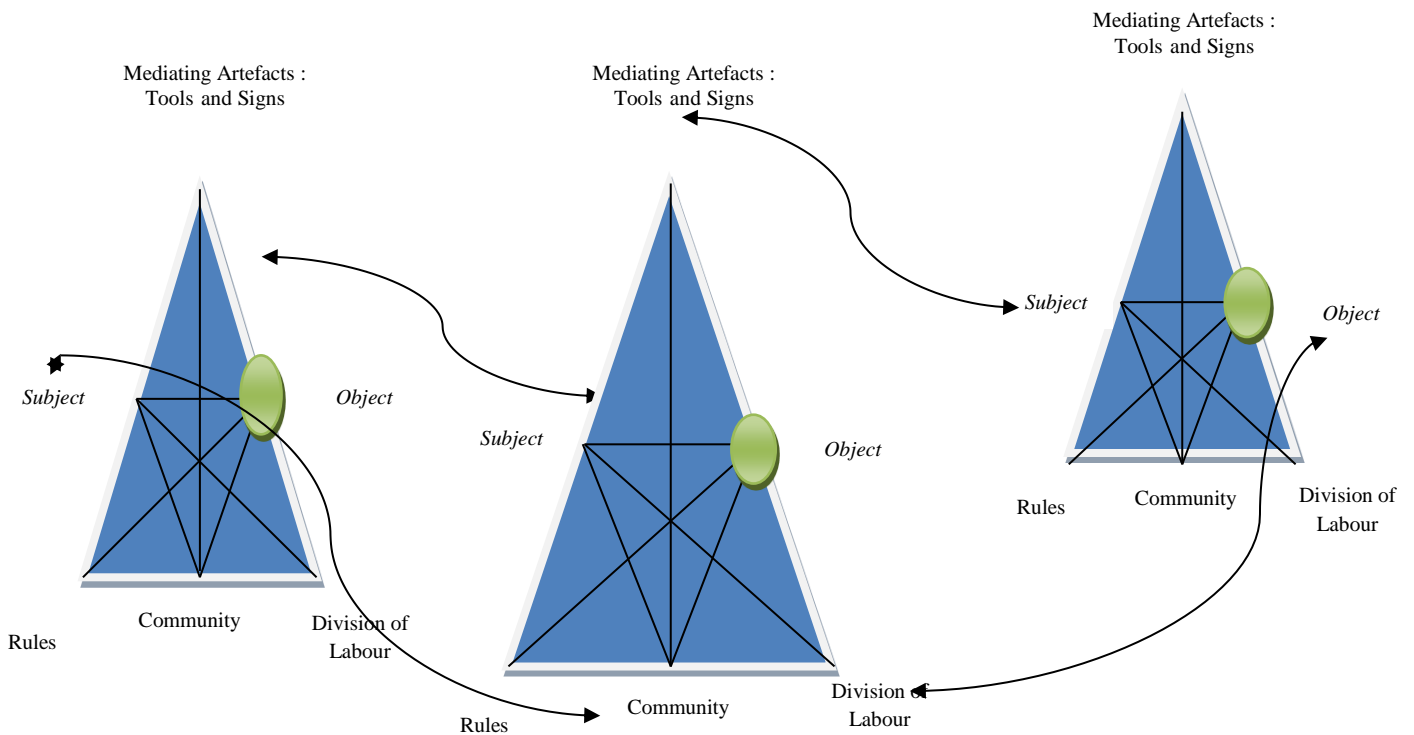


Figure 4.4 Engeström's perspective (Third generation Activity Theory)

The above diagram shows three interacting activity systems as a minimal model for the third generation of Activity Theory (Engeström, Mietinen, & Punamäki-Gitai, 1999). This activity system perspective can be expanded further to include other activity systems. This third generation of Activity Theory as proposed by Engeström, "intends to develop conceptual tools to understand dialogues, multiple perspectives, and networks of interacting activity systems" (Engeström *et al.*, 1999, p. 137).

Tensions and contradictions are regarded as transformative elements of this generation of Activity Theory (Engeström *et al.*, 1999). According to Engeström (1993), activity systems are underpinned by their internal contradictions. Contradictions are explained as "a social,

societal essential dilemma which cannot be resolved through separate individual actions alone – but in which joint cooperative actions can push a historically new form of activity into emergence" (Engeström, 1987 p.16). These contradictions are translated into tensions among the components of the activity system. Tensions are critical to understanding what motivates particular actions and in understanding the changes in a system.

In the present study the second generation Activity Theory of Leont'ev's will be employed for analysis as the interactions between the different activity systems goes beyond the scope of the study.

#### **4.4 The link between Critical Realism, Social Realism and Activity Theory**

Critical Realism, Social Realism and Activity Theory is that they are materialist and Realist in nature (Wheelahan, 2007). The focus is on tools and artefact-mediated 'human labour' as the basis of social reproduction and change and as the basis for development of knowledge.

In this study Bhaskar's philosophy of Critical Realism and Archer's Social Realist theory (C/SR) are used as meta-theories to frame Activity Theory in order to analyse the relationship between the individual experience and deeper social structures and mechanisms. It is important that we theorise this relationship, because the way in which we see the world, shapes our understandings of the nature of learning. This, in turn, has implications for the way we construct learning environments and develop policy, qualifications, and curriculum. Understanding how this relationship plays out makes us aware and lead us to recognise certain aspects of the world around us so that we are not entirely blinded by our own world and views.

There are important differences between C/SR and AT. Activity theory refers to 'object-oriented, collective, and culturally mediated human activity' (Engeström et al, 1999, p. 9), whilst Archer argues that we live in the natural, practical and social worlds simultaneously, which gives rise to different kinds of concern in each: physical well-being in the natural, performative achievement in the practical, and self-worth in the social worlds respectively (Wheelahan, 2007). They are complementary theories that can be used to develop a pedagogy that goes beyond procedural and declarative knowledge, but one that is able to include both the individual development as a reflexive being with self-understanding and an understanding of the environment that they strive within (Wheelahan, 2007). C/SR and AT incorporate a socio-cultural aspect that looks at an individual in the context of his/her surroundings, beliefs and values.

## **4.5 Summary**

This chapter offered an overview of the theories that underpin and frame this study: Critical and Social Realism as meta-theory and Activity Theory as the substantive analytical theory. The chapter concludes linking these theories.

## 5 Methodology

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### 5.1 Introduction

This chapter describes the research methodology that is used in this study. Methodology is defined as “ways to conduct an inquiry in order to gain knowledge about Reality” (Terre Blanche, Durrheim, & Painter, 2006). Methodology is used here to encompass the research paradigm and design, including the participants, data collection and analysis, validation strategies and ethical considerations. The chapter concludes with a reflection on the scope and limitations of the study.

### 5.2 Research Paradigm

In the social sciences, there are a variety of research traditions or paradigms. Paradigms are defined as ways to understand phenomena (Bryman, 2001) and are differentiated by their ontological, epistemological and methodological assumptions. Bryman (2001) proposes three main aspects of a paradigm: *ontology*, which describes beliefs about the nature of reality and specifies whether the social world is regarded as something external to social actors or something that people are in the process of fashioning; *epistemology*, which specifies the nature of knowledge or beliefs about reality or the relationship between the researcher and what can be known in the social world and *methodology*, which specifies ways to conduct an inquiry in order to gain knowledge about reality.

This study is located within the interpretive paradigm. According to Babbie (2007) the interpretive approach is committed to studying meaning and human phenomena in context. Such research explores “... socially meaningful interactions through looking at experiences in context, in order to arrive at understandings and interpretations of how people create and maintain their social worlds” (Neuman, 1997). The purpose of this orientation is to understand how others make meaning of reality. This is of particular relevance at the *ontological* domain of the Empirical (Bhaskar, 1998).

The *epistemological* perspective is interactive in nature. The interpretive paradigm affords the researcher an opportunity to learn through the process of interaction with participants’ perceptions, interpretations and the meanings which they give to their actions (Adler, 1987; Terre Blanche, Durrheim, & Painter, 2006).

From a *methodological* perspective, qualitative methods appropriate to interpretative research were employed to investigate actions and experiences of lecturers with regard to

constraints and enablements in the use of ICTs in a Blended Learning approach. De Vos (2002, p. 240) defines qualitative research methods as “a multi-perspective approach that utilizes different qualitative techniques and data collection methods to explore social interaction. They are aimed at describing, making sense of, interpreting or reconstructing interactions in terms of the meanings that the subjects attached to it.” Thyer (2001) indicates that this approach is concerned with non-statistical methods of inquiry and analysis of social phenomena.

Qualitative techniques were appropriate for this study as it aims to understand human experiences and actions.

### **5.3 Research Design**

A research design is a plan that guides the researcher in the process of collecting, analysing and interpreting data. This research is a case study aimed at understanding a contemporary phenomenon in a real life context (Yin, 2003). This case study employs qualitative research methods. Qualitative case study methodology provides tools for researchers to study complex phenomena within their contexts (Baxter & Jack, 2008) and afford researchers opportunities to explore or describe a phenomenon in context using a variety of data sources.

Yin (2003) argues that one of the reasons for using case study research is when “you want to cover contextual conditions because you believe they are relevant to the phenomenon under study”. Since contextual conditions are pertinent to the phenomenon under study, a case study design seemed most appropriate.

In particular, this research design comprises smaller units or sub-cases embedded in a bigger case study. Baxter and Jack (2008) describe this kind of case study as ‘Single Case with Embedded Units’. Such a holistic case study with embedded units enables the researcher to explore the case “while considering the influence of the various contexts and associated attributes on the lecturer’s experience (*ibid.*). “The ability to look at sub-units or sub-cases that are situated within a larger case is powerful when you consider that data can be analyzed within the sub-units separately (within case analysis), between the different sub-units (between case analysis), or across all of the sub-units (cross-case analysis)” (Yin, 2003).

Since I was interested in exploring a single set of research questions, but was also intrigued by the potential impact of different departmental contexts in which participants practice as lecturers, this design seemed most appropriate.

### 5.3.1 Participant Sampling

The sample for this study was derived from the University's A and B Campuses. Twelve lecturers were interviewed and six were used for the study. All twelve participants were selected because they had been part of the Blackboard pilot project and originated from different departments within the five faculties. Of the 12 participants 6 were selected and analysed as individual case studies for the research. Selection was based on willingness, availability and a spread across each of the five faculties and the Teaching and Learning Centre (TLC). The selection could be said to be purposive in nature as it required that there be at least representation in each Faculty. While this was the intention, this did not quite work out in the end as there were two from one Faculty and one Faculty was not represented.

### 5.3.2 Data Collection

Three methods for data collection were employed in this study: document analysis, interviews, and a questionnaire.

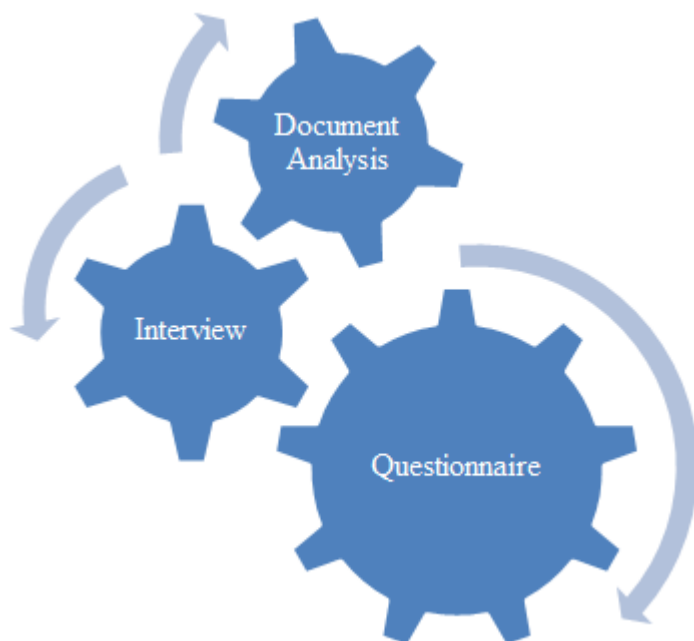


Figure 5.1 Data collection methods and validation

**Document analysis** offered a deeper insight into the institutional context and the expectations of the institution with regards to e-Learning. Documents drawn on included a teaching and learning policy, an evaluation policy and the university strategic plans. Data collected was contextualised in terms of the University strategic documents and policies. This section on document analysis is dealt with in chapter 2 of this study.

**Interviews** offer insight into the perceptions and experiences of the participants with regard to the use of Blended Learning. The interviews could be described as semi-structured. Semi-structured interviews are defined as those interviews which are organised around areas of particular interest, while allowing considerable flexibility in scope and depth (De Vos, 2002).

The interviews were focused around two main areas: the articulated teaching and learning philosophy of each individual participant and a reflection on experience in the form of an open narrative. There were no set predetermined questions for the interviews. The participant framed their own experiences of the pilot project in accordance with their thoughts. The interviews were recorded using a tape recorder and the recordings were transcribed and sent back to the participants to add and amend as a form of validation.

Consent to record the interviews was sought from participants prior to the interview. The reason for using recordings, is that it allows a much more detailed and accurate record than notes and it assisted the researcher in concentrating on how the interview was proceeding and where to go next (De Vos, 2002).

A follow-up **questionnaire** with open-ended questions was completed by the six case study participants as a way of authenticating and enriching the account of their experiences shared in the narratives transcribed from the recordings. The format of a questionnaire was chosen as it allowed participants to take time to reflect before responding to the questions thereby producing more considered responses. The questionnaire was framed by five themes which emerged from analysis of the interviews.

### **5.3.3 Data Analysis**

Data collected from interviews and questionnaires was used to gain a better understanding of the experiences of lecturers when using LMSs in a Blended Learning setting.

The initial step in analysing data is the organisation of the data (Maxwell, 2005). Data was categorized according to my research question (see Figure 5.2 below) and interpreted in terms of the Activity Theory triangle and the C/SR framework offered in Figure 4.1. This enabled me to analyse the data and to establish relationships within my data. Analysis took

place throughout and after the collection of data. Identification of themes and coding were used to further analyse this data. Ryan and Bernard (2000) describe coding as the heart and soul of whole text analysis.

Research Question	Data Collection	Analysis
<p>What are the lecturers' beliefs about teaching and learning in relation to engagement with ICTs in Blended Learning environments?</p> <p>What conditions can be identified which might enable or constrain lecturers engagement with ICTs in Blended Learning environments?</p>	<p><b>Interviews</b> Semi-structured interviews framed with two main requests.</p> <p><b>Questionnaires</b> Follow-up questionnaires were employed to probe their experiences more deeply.</p>	<p>Transcriptions of the interviews and data from the questionnaires were coded according to themes, and the C/SR &amp; AT frameworks.</p>

Figure 5.2 Data Collection and Analysis Matrix

### 5.3.4 Validation strategies

Case study research encounters distinctive situations in which there will be many variables. As a result it relies on multiple sources of evidence or data that need to be balanced by using a triangulation method (Yin, 2003). Triangulation entails the use of two or more methods of data collection in order to gather information on an aspect of behaviour (De Vos, 2002). Triangulation is typically a strategy for improving the validity and reliability of research or evaluation of findings (Patton, 2002) and is based on the assumption that any bias inherent in a particular data source, investigator, and method would be confirmed or clarified when used in conjunction with other data sources, investigators and methods (De Vos, 2002).

In this study it was important to triangulate data emerging from participants' interviews with that from their responses to the follow-up questionnaire. In terms of the bigger case study, it was equally important to balance views from different participants on the institutional support for the pilot project.

### 5.4 Ethical Considerations

Of ethical concern to this study were issues of informed consent, privacy and access. All participants of this research were informed beforehand of the nature and objectives of the study. Each participant signed a letter of consent which also informed them of their right to have access the results at any time and of their right to withdraw at any time. In order to ensure that the participants' privacy is protected, the researcher used pseudonyms when

reporting on their data. Transcripts of interviews were made available to each participant for member checking.

## **5.5 Scope and Limitations**

This study is concerned with the exploration of lecturers' experiences of ICTs in Blended Learning in a South African University. Limitations of the study include the following:

Findings of this case study cannot be generalized. However, the findings may have resonance for other contexts and readers are invited to investigate implications for their own contexts.

The study only focused on lecturers. Whereas it would have been appropriate to also include students and other members of the community, this was beyond the scope of the study.

Participants experiencing difficulty in recalling information about their experiences was a problematic issue which affected the richness of data collected.

## **5.6 Summary**

An outline of the methodology and research design was offered in this chapter, concluding with an explanation of the ethical considerations, scope and limitations of the study.

## 6 Findings

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### 6.1 Introduction

This chapter gives an analysis of the findings for each of the six cases that make up this research. Each case is analysed using the following format:

- Introduction
- The Narrative
- The Activity Theory analytic framework
- At the Level of the Real
- Enablements and Constraints
- Case Summary

The selected case study sample is made up of six lecturers who taught in different faculties across two campuses at the University. Each lecturer's experience was analysed as a separate sub-case. Since the lecturers come from different faculties and disciplines within the University it is important for each lecturer to be treated as a separate case in order to understand each experience in its unique context. (The Law Faculty could not be included in the study as the data was not complete). These lecturers also work with different groups of students at different levels of their academic life (see Figure 6.1 below). This difference and diversity of the faculties and student population is important as it reflects a variety of contexts across the University. The diversity of the cases is also necessary to explore experiences in different contexts in order to ascertain what the different support needs of lecturers in these contexts might be.

Case	Participants	Faculty	Modules
1	Lecturer A	Faculty of Social Science and Humanities	First years
2	Lecturer B	Faculty of Education	Third years
3	Lecturer C	Faculty of Education	Second and third years
4	Lecturer D	Teaching and Learning Centre	Lecturers
5	Lecturer E	Faculty of Management and Commerce	First and third years
6	Lecturer F	Faculty of Science and Agriculture	Second and third years

Figure 6.1 Tabular representation of each lecturer's Faculty and study level of students

The implementation of Blended Learning using 'Blackboard' occurred over one full semester, which is a six month period. Despite having completed a computer literacy course earlier, the lecturers displayed varying levels of ICT skills. They consequently participated in an

introductory course on how to use Blackboard. Lecturers also had the option to consult the e-Learning Unit for assistance with queries in relation to using any tool in Blackboard.

Also displaying differential levels of computer literacy skills, students participating in the pilot project were able to consult their lecturers on issues of content, practicals and errors in submissions. For sorting out login problems and technical issues students also had access to a helpdesk facility within the e-Learning Unit.

To analyse each case, Critical/Social Realism was used as the meta-theory and Activity Theory was used as the substantive analytical framework. In analysing each case the focus was on three ontological domains: the Empirical, the Actual and the Real. At the level of the Real the research tried to uncover the cultural and structural mechanisms that come into play in each case.

The generic context of each of these cases involved face to face lectures that were taught by the lecturer, who also organised the learning materials and tasks on Blackboard. Both the lecturer and the students participating in this activity system are surrounded by the university community with multiple rules, roles, and artefacts. This environment is rooted in many other different activity systems which include the university management, Faculty and other professional and social networks. For the purpose of this study however, the scope of the activity system is limited to the space within the university which is directly related to the engagement with Blended Learning.

Below is a generic representation of the activity system triangle for each single case.

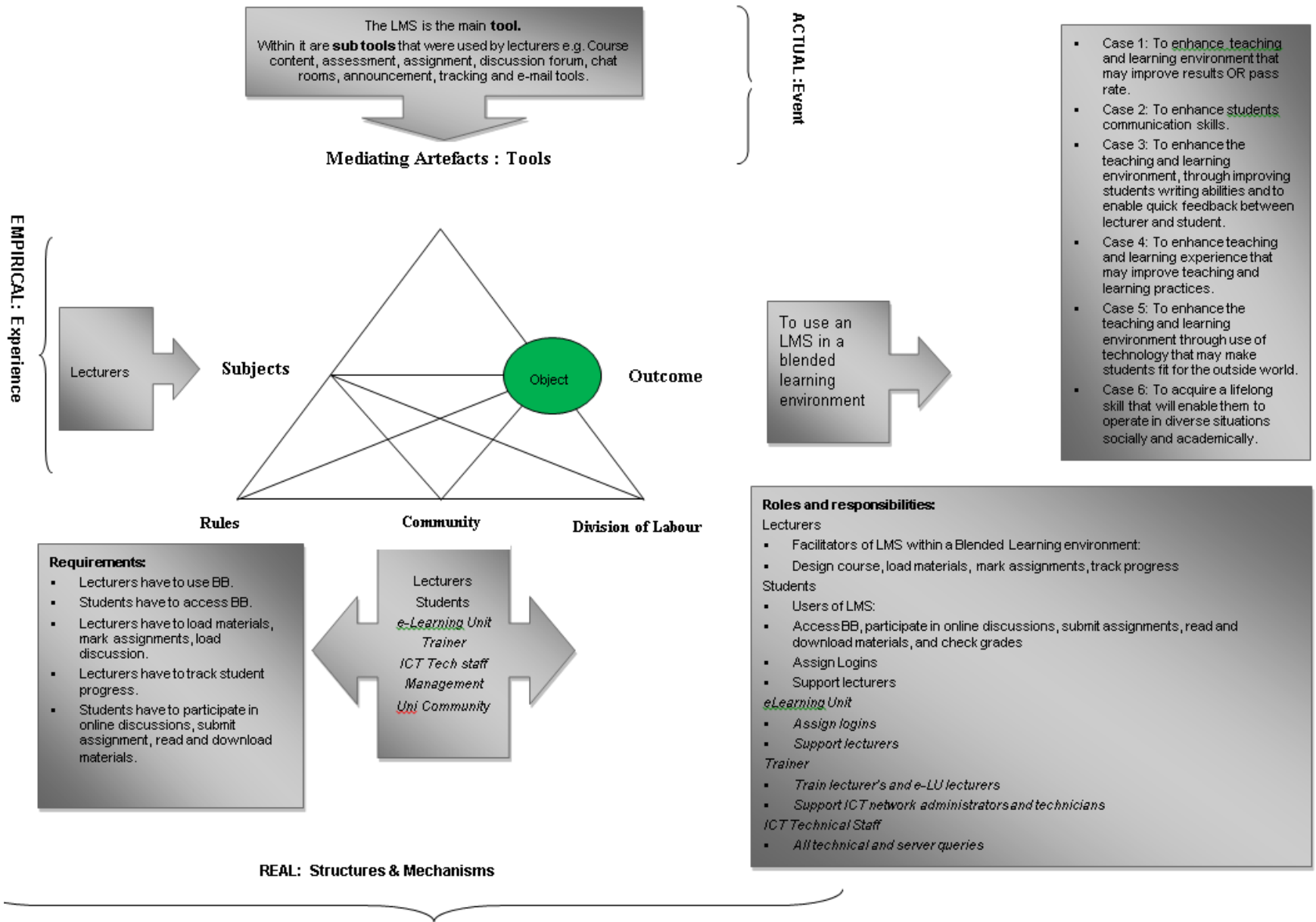


Figure 6.2 Generic view of AT activity system as representative of the overall case study

Leont'ev's activity system model is used to understand participants' experiences. The way in which the different components of the activity system interact and impact on each other is described in the sections that follow.

## 6.2 Sub-Case 1

### 6.2.1 Introduction

Sub-Case 1 involves Lecturer A who teaches a module *Introduction to Computers* in the Faculty of Social Science and Humanities. The lecturer taught a first year class of ±376 students over one semester (February to June) using a Blended Learning approach. The following is an extract of the interview focusing on his experience of ICTs in a Blended Learning *Event*. These experiences are considered to be at the level of the *Empirical*, talking to the *Event* of Blended Learning.

### 6.2.2 The Narrative

...

**Lecturer A:** *My philosophy, or what drives my teaching, is that I believe all the students, the fact that they meet the minimum requirements for the course, they have the ability to succeed. But of course, that has to be qualified with the fact that you have to cater for all the different learning styles that our students have. If we use a certain approach only, that is say the lecture method only, that is we may not reach others with different learning styles.*

*Researcher: Ja*

**Lecturer A:** *So it's important that you have different approaches and that we present the same content taking into consideration that our student learners learn differently. If we keep that in mind the pass rate will be good.*

...

*I believe that we have to use a number of different approaches. That is in trying to lecture in terms of informing teaching that is our students. So I was also guided by that and the fact that I also needed another approach, that is to present my content to my learners. Because with Blended Learning I mean it provided another alternative for my students in terms of communication, in terms of the access to the course content, in terms of tracking their activities: Do they read? I am able to monitor them. If I give*

*them some task: Has so and so done that task? Ja, it offered me a number of opportunities because also they could access materials. I put a lot of materials online and also the slides that I have used in the class, I put them online, so they can reflect on what I used. They can also see exactly what I have covered in class so it's like they can reflect. Then I put exercises that I can use to also check their understanding. The advantage of that - the multiple choice, the matching questions - I can see if my class understands. I can see that online. I wanted to use different approaches; not the traditional face-to-face. I wanted to supplement that, that's why I got involved in Blended Learning.*

**Researcher:** *And challenges?*

**Lecturer A:** *Challenges of course. It's a lot of work that's my feeling. Using Blended Learning there is a lot of overheads in terms of preparing the course site. You have to set it up, putting questions, that's too much. And there are [other] challenges of course. You have to teach learners how to use the LMS. Then in terms of the skills and the background of the learners, the majority is not computer literate and the fact that also the majority is first years. In the first semester most students can't handle computers even though they are doing a computer literacy module. They are battling also when they have to use the LMS.*

*They struggle in terms of opening the documents. There are a lot of overheads even though I have used it. It's towards the end of the course, that is towards midterm, that they are really getting to know how to do things how to upload files, submit correctly. In the beginning they submit, and then come to you to ask if they have submitted. They do not really understand it, but I think it's also a learning curve on my side. But I think what is very important is when you are trained, support is very important. When you have undergone training, the details are not there, but you have the bigger picture.*

*Another issue of challenges it's not an issue of students, it's the issue of the network because sometimes it's down. Then we cannot use the LMS or it's slow and it's not always available.*

*So those are some of the challenges. We are able to continue with our work because it's not critical stuff like tests. So challenges with students were concerning mostly infrastructural challenges. And they were in terms*

*of the network, the bandwidth in terms of access time issues and also, not enough computers in the lab, you find there are not enough computers in the laboratories as most laboratories are not well maintained. So not all the computers that you want are all working at the same time. Only a few numbers are working. So not all of them [the students] can work and practice what you are demonstrating as they have to share computers. So those are some of the challenges that come to mind. . . .*

**Researcher:** *Anything on the training and support?*

**Lecturer A:** *Ja, training really helped and I think support is very important. The training that we got really helped, but you know then issues of support, you get trained and it's all about your first exposure it does not really stick or really make sense. So even when you are trained, you are trained on something that you are not going to do now because when you trained it's just a lot of stuff that you are introduced to at the same time, so you can't really grasp everything at the start. Support I believe that, it was at least fair support. And because of people's responsibilities you cannot get it at the time you want but you find a solution at the end.*

*. . .*

### **6.2.3 The Activity Theory Analytic Framework**

This AT triangle outlines the components of Lecturer A's Activity System as interpreted from the above narrative.

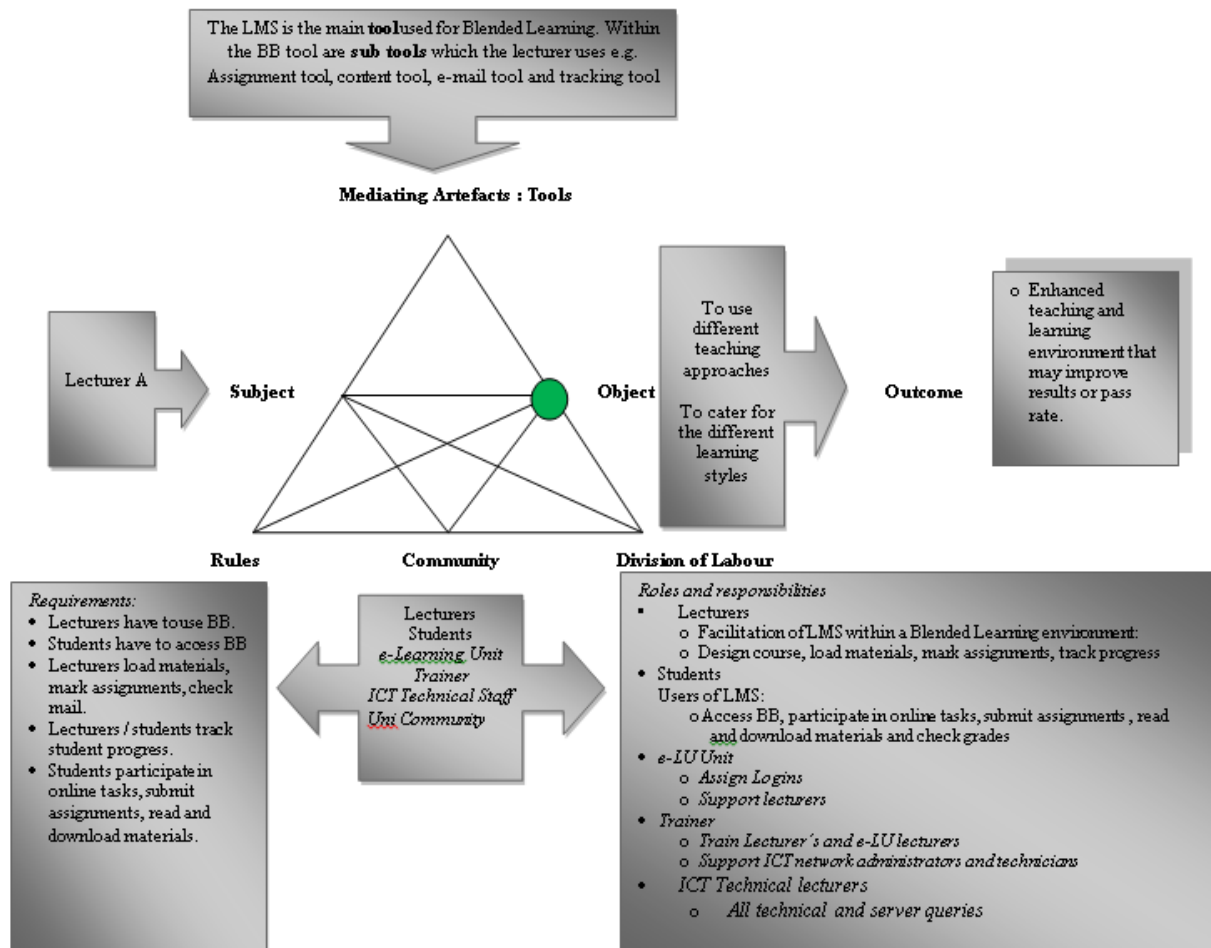


Figure 6.3 Data representation of Lecturer A's Activity System

The unit of analysis in the above activity system is Lecturer A's articulated experience (Empirical) with the Blended Learning activity as the event (Actual). The findings are broken down and analysed using the components of Leontev's Activity Theory framework:

**Subject:** The subject of this activity system is Lecturer A, as his experience and beliefs are being acknowledged or are under analysis in this case. Lecturer A's philosophical position about teaching and learning and his experiences in an LMS for Blended Learning are explored. With regard to a philosophical position, Lecturer A highlights that he believes that all students have an ability to succeed. He seems to be motivated by the notion that catering for student learning styles through the use of different approaches has the potential to enhance student learning and success rates. Blended learning is contrasted with only the lecture, commonly adopted in the classroom, which may result in an inability to reach all the students.

The significance of the lecturer A's philosophical position for this study is that it uncovers the agential influences which motivated his actions. It is clear that this lecturer is positive about

his students as he highlights that he believes that all students have the ability to succeed. His agency which led to him using the tool to enhance his teaching and his students' learning environment emerged from his philosophical stance.

**Object:** The object of the subject in this activity system is to cater for the different learning styles of the students by using different teaching approaches in order to improve the pass rate:

*"... qualified with the fact that you have to cater for all the different learning styles that our students have. If we use a certain approach only, that is say the lecture method only that is we may not reach others with different learning styles."*

*"... So it's important that you have different approaches and that we present the same content taking into consideration that our student learn differently. If we keep that in mind the pass rate will be good."*

The object of this activity system is to cater for different learning styles. The lecturer was focusing on achieving a specific outcome: using different teaching approaches in order to cater for a variety of learning styles. He was therefore using the Blackboard tool to achieve this objective. According to his understanding, catering for students' different learning styles would result in good pass rates being achieved as giving students different opportunities to learn can improve their results.

**Tools:** The main tool that Lecturer A uses for his Blended Learning class is Blackboard and the sub-tools within Blackboard that he used to mediate the object of this activity system are the content, communication (e-mail), assignment, and the tracking tools:

*Because with Blended Learning I mean it provided another alternative for my students in terms of communication, in terms of the access to the course content, in terms of tracking their activities: Do they read? I am able to monitor them. If I give them some task: Has so and so done that task? Ja, it offered me a number of opportunities because also they could access materials. I put a lot of materials online and also the slides that I have used in the class, I put them online, so they can reflect on what I used. They can also see exactly what I have covered in class so it's like they can reflect. Then I put exercises that I can use to also check their understanding. The advantage of that - the multiple-choice, the matching questions - I can see if my class understands. I can see that online.*

The tools the lecturer has identified in the quote above in Blackboard are the e-mail tool which is used for communication, the course content tool which is used for publishing materials and readings, the assignment tool which is used for tasks and exercises and the tracking tool which is used to monitor and track student progress.

**Community:** The community is made up of the lecturer, Students, the e-Learning Unit, the Trainer, ICT Technical staff as well as the department and Faculty lecturers and the bigger University community which all impact on the lecturers' activity system. The community plays a major role in influencing how the lecturer interacts with this environment. Apart from references to his students, Lecturer A mentions the value of training received from the Trainer and importance of support from the e-Learning Unit:

*“Ja, training really helped and I think support is very important. The training that we got really helped, but you know then issues of support ...”*

**Division of Labour:** The division of labour is amongst the community members (Lecturers, Students, e-Learning Unit and ICT Technical staff etc). The lecturer is fully responsible for what happens in the classroom. The narrative demonstrates that the lecturer felt that preparing and getting ready for his classes required a substantial investment of time and effort on his part:

*“... it's a lot of work that's my feeling. Using Blended Learning there is a lot of overheads in terms of preparing the course site. You have to set it up, putting questions, that's too much.”*

Division of labour also speaks to roles as all the role players had different roles. The lecturer had to implement (teach) and students had to learn. Lecturer and students were supported by the e-Learning Unit lecturers and ICT Technical staff for Blackboard issues. ICT Technical staff took care of maintaining the laboratories, technical issues with computers, the network and access to computers in laboratories. The issues mentioned in the community section affect division of labour and the roles played by each member of the community.

**Rules:** The rules pertain to the processes and procedures governing the community in the context of this activity system. These would include the policies and procedures governing the teaching and learning environment of Lecturer A at the University. Implementation of the LMS could also be influenced by the teaching and learning policies, evaluation policy, and ICT policy of the University.

The fact that the introduction of ICTs at the University is a strategic initiative demonstrates a change, not only in Teaching and Learning policy but also in practice as it involves a move away from the traditional mode of face-to-face teaching to a hybrid mode of teaching, supported by ICTs. This is evident in the following statement by the lecturer:

*“I believe that we have to use a number of different approaches. That is in trying to lecture in terms of informing teaching that is our students. So I was also guided by that and the fact that I also needed another approach, that is to present my content to my learners.”*

This is an activity system that involves both teaching and learning with a focus on the lecturer (subject) and how he interacts with the course for achieving the outcome of enabling students to succeed, by catering for their different learning styles (object). So in this case, the subject uses different tools like publishing content to give the students access to materials, doing assignments and assessments, using e-mail and tracking their progress. There are rules and divisions of labour in this activity system, which govern the community.

A follow-up questionnaire, designed to further probe the experiences of Lecturer A in relation to specific themes provided the following insights:

#### **6.2.3.1 Theme 1: Benefits in the use of Blackboard relative to existing practices**

Lecturer A responded that Blackboard simplified the interaction between himself and the students. He also highlighted that the Blackboard system simplified how he conducted assessments which assisted in reducing plagiarism. This indicates a change in practice. In relation to what the lecturer said in the narrative that he wants to use different approaches to cater for his students learning styles, his responses demonstrate that using Blackboard benefited his environment through simplifying the interaction and engagement between him and the students.

#### **6.2.3.2 Theme 2: Blackboard alignment with the lecturers individual beliefs and values**

Lecturer A responded that his beliefs and values are aligned with the use of Blackboard: “Blackboard is giving me the options to use various functions to enable me to enhance my teaching approach”.

**6.2.3.3 Theme 3: The level of difficulty experienced by the lecturer in using Blackboard**

Lecturer A felt that he did not have much difficulty in understanding Blackboard because he has experience in using computers. In his interview Lecturer A did however emphasise the importance of training in the use of Blackboard and the support that was needed in this regard.

**6.2.3.4 Theme 4: The extent of support made available**

Lecturer A indicated that support was a call away and the support team would usually respond within 24 hours.

**6.2.3.5 Theme 5: Whether the lecturer would continue with the use of Blackboard after this experience**

Lecturer A responded that he would definitely continue using Blackboard and that he thinks it is a good system. This commitment indicates satisfaction with the tool and suggests that some of the needs of Lecturer A were being met by the Blended Learning approach.

The above analysis speaks to the experiences at the level of the Empirical and the Blended Learning event at the level of the Actual. The following focuses on what may have taken place at the level of the Real.

**6.2.4 At the Level of the Real**

The level of the Real relates structures and mechanisms which impact on the event of blended learning and the experiences of the lecturer. These structures and mechanisms are best described using Archer’s Social Realist framework, which focusses on the three domains of structure, culture and agency. Figure 6.4 below shows components of each domain relevant to this study.

Real Structures and mechanisms	Social Realism	Structure	Academic hierarchy Time Policies
		Culture	Beliefs and Values
		Agency	Lecturer

Figure 6.4 Lecture A, diagrammatical representation at the level of the Real

To further understand Lecturer A’s experience of the Blended Learning environment, the data is described according to these three domains.

#### **6.2.4.1 Structure**

Structure plays out in many of the tools and artefacts of the different activity systems. For example, in this case study the community is made up of the University community which functions within the wider provincial, national and international contexts. In a teaching and learning environment within the University community there are policies and regulations that govern this community. At this institution these policies and regulations include the Teaching and Learning policy, the Evaluation Policy, the Recognition of Prior Learning Policy and the University Strategic plan.

Data from Lecturer A's interview and questionnaire reveal both enabling and constraining structural conditions. Constraining conditions included limited bandwidth, network failures and the lack of maintenance of computers, all which were the responsibility of other sections of the community. The inter-dependence of different members and sections of the community towards achieving the object is evident from Lecturer A's responses.

Another constraining condition related to structure concerns academic hierarchy, which seem to possibly impact on the agency of Lecturer A

*“Support, I believe that, it was at least fair support and because of peoples responsibilities you cannot get it at the time you want but you find a solution at the end.”*

Although Lecturer A describes support as “at least fair”, there is an implication that support was not immediately available at the time that he required it.

#### **6.2.4.2 Culture**

Culture relates to beliefs and values. In this case, culture refers to the belief and value systems of the particular community and the degree to which Lecturer A subscribes to the beliefs and values of the community. Expressed through his teaching philosophy, Lecturer A's beliefs and values were instrumental in his desire to participate in the pilot project and to use Blackboard for his teaching. In his interview Lecturer A responded:

*“My philosophy, or what drives my teaching, is that I believe all the students, the fact that they meet the minimum requirements for the course, they have the ability to succeed. But of course, that has to be qualified with the fact that you have to cater for all the different learning styles that our students have. If we use a certain approach only, that is say the lecture method only, that is we may not reach others with different learning styles.”*

When prompted about Blackboard's alignment with his individual beliefs and values in the follow-up questionnaire, Lecturer A further explains

*“My teaching philosophy is based on the fact that educating others is a responsibility that should be taken seriously and with care. I believe that all students have the ability to be successful; they simply need to tap their potential. I believe that students become more engaged and learn more through active learning as opposed to passive listening.”*

Both statements offer insight into the lecturer's beliefs and values about learning and what he would like to achieve in his classroom environment.

#### **6.2.4.3 Agency**

Agency is expressed in the form of what motivates the lecturer to take action in the way he chooses. In this case Lecturer A's teaching philosophy motivated him to use a tool in a new approach to enhance his teaching and learning environment as he believed that catering for different learning styles of students would assist him in reaching his objective of achieving good results.

#### **6.2.5 Enablements and Constraints**

Focussing more specifically on the second research question, “What conditions can be identified which might enable or constrain lecturers engagement with ICTs in Blended Learning environments?” Lecturer A identified the following conditions.

In his interview and follow-up questionnaire, Lecturer A suggested that Blackboard offers alternative forms of engagement with students in terms of communication, access to the course content, tracking student activities or progress and assessment.

Communication: The lecturer suggests that this tool provided another option for his students to communicate.

*“...Because with Blended Learning I mean it provided another alternative for my students in terms of communication.”*

Course content: The LMS afforded Lecturer A ease in distributing course materials to students which may not have been so possible in a classroom setting. He views Blackboard as a space which enables him to publish materials for students, which might not have been possible for all students to access if he had to print and hand these materials out.

*“... and the fact that I also needed another approach that is to present my content to my learners”.*

Tracking: Using Blackboard in a Blended Learning Environment allowed the lecturer to gauge students' understanding of the course, through engagement with online exercises.

*“Then I put exercises that I can use to also check their understanding. The advantage of that - the multiple choice, the matching questions - I can see if my class understands. I can see that online.”*

Assessments: The lecturer felt that the tool enabled him to simplify assessments and that student were able to get quick feedback.

Constraining factors identified were two-fold. There were those that were more related to teaching and learning and those that were more administrative:

Lecturer A suggests that there is a lot of work involved in using Blackboard:

*“Challenges of course. It's a lot of work that's my feeling. Using Blended Learning there is a lot of overheads in terms of preparing the course site. You have to set it up, putting questions, that's too much.”*

The lecturer mentions the issue of having to get students acquainted with the use of Blackboard as a challenge on its own:

*“And there are [other] challenges of course. You have to teach learners how to use the LMS.”*

The lecturer mentions that students may not be computer literate, as most of them are just first year students:

*“Then in terms of the skills and the background of the learners, the majority is not computer literate and the fact that also the majority is first years.”*

The lecturer highlights challenges to do with the ICT infrastructure, suggesting that such problems will reduce accessibility to materials put online and hinders students from doing their activities and tests.

*“... few computers are being available for large classes of students, hence leading to students sharing systems.”*

*“In computer laboratory were many computers are available, few are working due to some being damaged and needing maintenance.”*

The above analysis suggests agential impediments in the form of too many overheads, network and computer maintenance challenges and students lacking computer skills. These factors inhibit the use of the Blackboard tool effectively by both the lecturer and students.

### **6.2.6 Summary**

Lecturer A's teaching philosophy demonstrates his committed to using ICTs in a Blended Learning approach to enhance his teaching. By introducing the LMS with its tools the lecturer used a different approach to learning. The lecturer valued the support that was offered in the form of training, which he felt this should be continuous. While the lecturer mentioned both enablements and constraints, it is not evident from the data whether or not his goal of enabling students to succeed in their studies by catering for different learning styles was achieved.

## **6.3 Sub-Case 2**

### **6.3.1 Introduction**

Lecturer B is a Senior Lecturer in the Faculty of Education's School of Initial Training and Education. Her students are third year students. Both the lecturer and the students were trained in using the LMS. The lecturer was part of a six months training and the students did a one hour training session at the beginning of their module.

### **6.3.2 The Narrative**

.....

**Lecturer B:** *I think basically my teaching philosophy is based on active learning. I actually like to involve the students whenever I teach and I also want to ensure that they have access first to the necessary information so that whatever form of assessment that I use becomes fair. Hence I like to make it a point that they are always taking part and they are always involved, actively involved.*

**Researcher:** *Thank you and yes, you can go on to your experience of the pilot project.*

**Lecturer B:** *The experience that I have about eLearning firstly was not necessarily from the institution; it was when I was doing my post graduate*

*diploma with the University of Stellenbosch, where we were using WebCT. It was then that it has helped me in that there is that regular communication between the lecturer and the student, so that's when I started to get to know issues about eLearning.*

*Then when this was introduced by the University, I was the person for A, who was then sort of like identified to be taking part in this eLearning pilot project programme ... and it has been as a person who always wants to ensure that students are participating and are actively involved, it's something that has worked well for me. But I think one of the challenges that I experienced was the fact that as it started late 2008, the major thing then for me was the time, because then I did not have the time because apparently when I was introduced to the programme there were a number of activities that we were supposed to do and there were a number of discussions that we had to do and at a certain point I did not have time. I missed some discussions that was one of the things and there were a number of tasks that we had to do as groups. I could not do all of them as I was busy.*

*... What disturbed me was that at the time I was also preparing to go to Sweden in March. So then before 2009, we were given a work schedule of what we had to do. When we got back from Sweden I felt left out. Trying to do my work here and trying to prepare. So when I came back I felt I was already left out, then I could not introduce to the students. I even felt I knew more of WebCT than Blackboard. I felt that I need to understand Blackboard more so that I could be more confident about it myself before I can introduce it to my students. So that we can be able to communicate. So I never implemented with my students.*

*... You know honestly speaking in as much as becoming part of pilot project was not my intention, it was not something I just volunteered to do. As I have indicated the Dean earmarked me in A to be the person to do it then because I had done it once as part of WebCT from my student experience, so I thought it's something I could do. But now maybe I could not continue with it but, I still feel that if there can be another opportunity, with what I have done and the experience that I got, it will be one of the things that will help in ensuring that there are always continuing discussions between lecturers and students.*

**Researcher:** Any challenges in the process?

**Lecturer B:** One of the challenges that I have, we are having big classes with a minimum of 60 up to 200 students. So then it makes it difficult for me to employ my active learning strategies as I would do.

...

### 6.3.3 The Activity Theory Analytic Framework

The AT triangle outlines the components of Lecturer B's Activity System as interpreted from the above narrative.

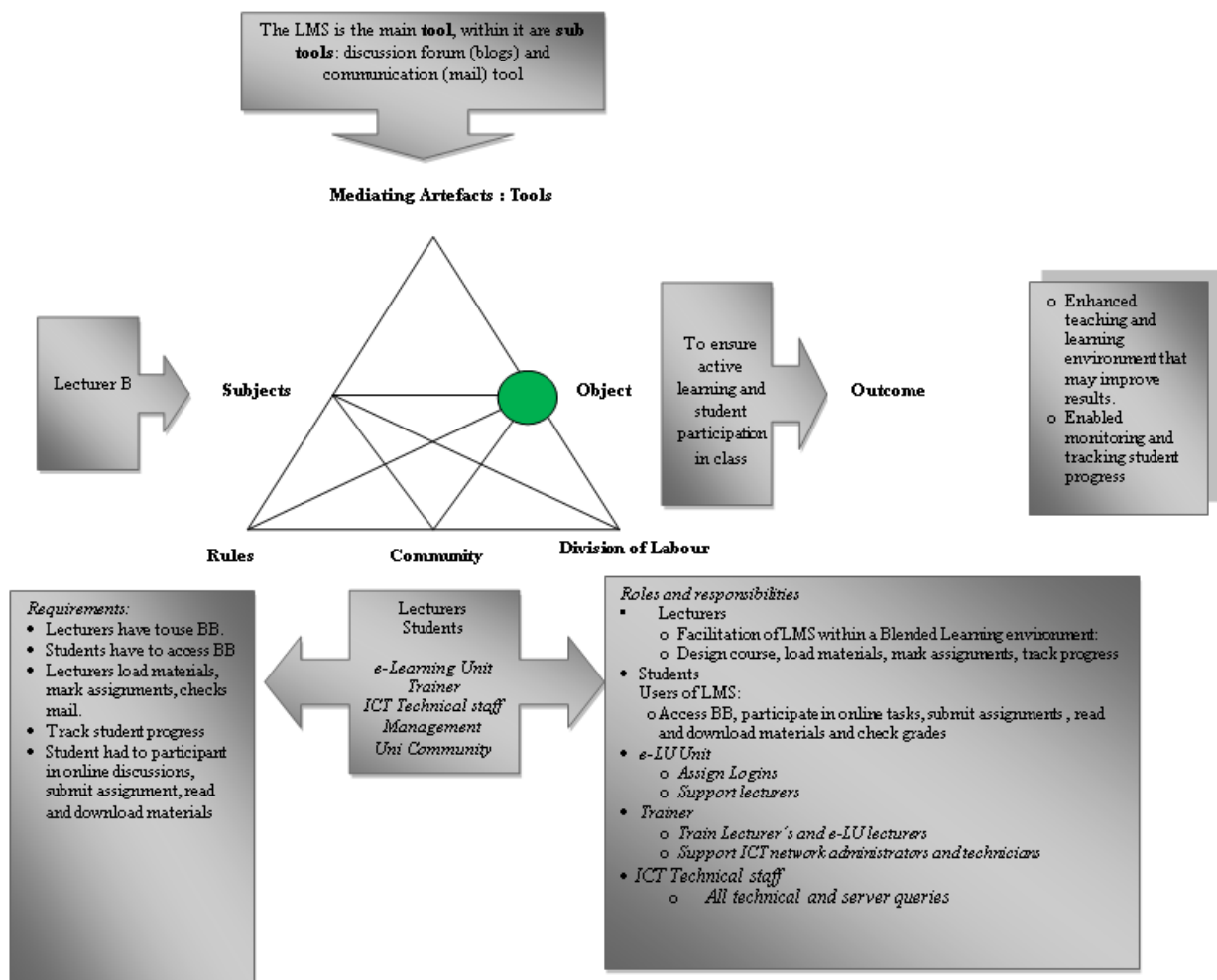


Figure 6.5 Data representation of Lecturer B's Activity System

The unit of analysis in the above activity system is Lecturer B's experience (Empirical) with the Blended Learning activity (Actual). The findings are broken down and analysed using the components of the AT framework.

**Subject:** The subject of this activity system is Lecturer B as her viewpoint is being acknowledged or is under discussion. The lecturer's philosophical position and some of her beliefs about teaching and learning are outlined in the narrative:

*"It was then that it has helped me in that there is that regular communication between the lecturer and the student, so that's when I started to get to know issues about eLearning."*

*"I think basically my teaching philosophy is based on active learning. I actually like to involve the students whenever I teach and I also want to ensure that they have access first to the necessary information so that whatever form of assessment that I use becomes fair. Hence I like to make it a point that they are always taking part and they are always involved, actively involved."*

This suggests that the lecturer selected to use the Blackboard tool in order to give her students a platform to communicate with her and access to necessary information so that they can better participate or engage in class. Active learning is a pedagogical approach that requires participation, engagement and collaborative practice. This approach suggests a cultural and agential orientation of using a teaching style that recognizes the student as an active participant in the teaching and learning process.

**Object:** The object in this activity system is to ensure active learning takes place in order to achieve the outcomes which are to enhance students' communication skills and *improve student participation and engagement through active learning.*

*"Then when this was introduced by the University, I was the person for Campus A, who was then sort of like identified to be taking part in this eLearning pilot project programme, ... and it has been as a person who always wants to ensure that students are participating and are actively involved, it's something that has worked well for me."*

The above response suggests engagement and interaction. According to the lecturer one of the benefits of using technology is that conversation, exchange and other transactional modes of learning are not only possible but also easily sustained and tracked.

**Tools:** Tools mediate the object of the activity. In this case, the lecturer feels strongly about communication and engagement. The sub-tools that the lecturer would have used that support the above pedagogical practices include e-mail, discussions and the publishing of content for prior reading.

*“It was then that it has helped me in that there is that regular communication between the lecturer and the student,”*

*“... I still feel that if there can be another opportunity, with what I have done and the experience that I got, it will be one of the things that will help in ensuring that there is always continuing discussions between lecturers and students.”*

*“One of the challenges that I have, we are having big classes with a minimum of 60 up to 200 students. So then it makes it difficult for me to employ my active learning strategies as I would do.”*

Large classes are one of the challenges that were identified as a challenge that could be addressed by the tool. However, since Lecturer B was not able to continue with the pilot project, she was not in a position to experience the way in which the tool would have been able to assist her in this regard. This suggests a cultural and structural constraint that hindered the lecturer from participating in the pilot project. This constraint (of Lecturer B's absence during the implementation phase) had not been identified earlier represents a structural constraint as it pertains to planning and roles of participants.

**Community:** The Community is made up of the participants in this activity system such as lecturers, students, e-Learning Unit staff, the trainer, ICT technical staff. Although Lecturer B could not complete the pilot project, agential factors of the Faculty, the e-Learning Unit and Lecturer B clearly influenced decisions.

*“... What disturbed me was that at the time I was also preparing to go to Sweden in March. So then before 2009, we were given a work schedule of what we had to do. When we got back from Sweden I felt left out.”*

**Division of Labour:** The division of labour is between the different members of the community. Lecturer B had to withdraw from the pilot project because she was scheduled to go overseas. Since Lecturer B was selected by the Dean to participate in the pilot project, her agency seems to have been undermined.

*“What disturbed me was that at the time I was also preparing to go to Sweden in March.”*

*“As I have indicated the Dean earmarked me in A to be the person to do it then because I had done it once as part of WebCT from my student experience, so I thought it's something I could do.”*

**Rules:** ‘Rules’ pertain to the processes and procedures of the community and refer to the policy and procedures governing the teaching and learning environment at the University. Implementation of the LMS could also be influenced by the teaching and learning policies of the University.

A follow-up questionnaire, designed to further probe the experiences of Lecturer B in relation to specific themes provided the following insights:

#### **6.3.3.1 Theme 1: Benefits in the use of Blackboard relative to existing practices**

Lecturer B responded that Blackboard exposes students to a different form of using technology ...

*“Posting lecture notes and links to websites and PowerPoint Presentation slides for students, reduces need for handouts, particularly for students who don’t attend lectures regularly, e.g. G7 registered students or students who are repeating a course and experience timetable clashes”.*

The lecturer feels the tool is beneficial in that it gives flexibility for students who might have challenges in attending classes.

#### **6.3.3.2 Theme 2: Blackboard alignment with the lecturers individual beliefs and values**

*“Individual students have different learning styles and using Blackboard is one way of accommodating learning styles.”*

*“I also believe that students need to take more responsibility for their own learning and using Blackboard requires of students to do that because it is up to them to check what has been posted with regard to notes, assignment instructions, notices, etc.”*

This is reflected in Lecturer B’s articulation of her philosophy:

*“I think basically my teaching philosophy is based on active learning. I actually like to involve the students whenever I teach and I also want to ensure that they have access first to the necessary information so that whatever form of assessment that I use becomes fair....”*

**6.3.3.3 Theme 3: The level of difficulty experienced by the lecturer in using Blackboard**

Lecturer B felt the level of difficulty in using Blackboard was moderate. She might have been grappling with the use of some tools in Blackboard. Since the lecturers in this study were trained in both the use of computers and in the use of Blackboard, "moderate" might be translated into "still not yet competent enough in the use of some functions of Blackboard".

**6.3.3.4 Theme 4: The extent of support made available**

In both her interview and in her survey responses lecturer B indicated that support was always available and therefore adequate.

**6.3.3.5 Theme 5: Whether the lecturer would continue with the use of Blackboard after this experience**

Lecturer B responded that she would continue to use Blackboard. This is a positive indication of the impact of Blackboard in the Blended Learning environments as it implies that the lecturer has benefited in some way from the use of the tool.

The above analysis speaks to the experiences at the level of the Empirical and the Blended Learning event at the level of the Actual. We now continue to outline what may have taken place at the level of the Real.

**6.3.4 At the Level of the Real**

At the level of the Real structures and mechanisms refer to the underlying factors or influences that may or may not be immediately obvious. These structures and mechanisms are explored using Archer's Social Realist framework, which gives focus to three domains of structure, culture and agency. The figure below illustrates the components of each of these domains.

Real Structures and mechanisms	Social Realism	Structure	Academic hierarchy Time Policies
		Culture	Beliefs and Values
		Agency	Lecturer

Figure 6.6 Lecture B, diagrammatical representation at the level of the Real

To offer an understanding of the lecturer's experience of the Blended Learning environment the data is further explored according to these three domains.

#### **6.3.4.1 Structure**

Structural issues that influenced this environment in this case included the lecturer being left behind because of time constraints. She also had a previous commitment to be away (out of the country) which resulted her in missing deadlines for some of the tasks that were required of the lecturers that participated in the pilot project. The lecturer was influenced by the Faculty Dean to join the pilot project. The institutional structure of academic hierarchy came into play influencing this change in the teaching and learning environment. This suggests that at a particular time existing structures constrained Lecturer B's agency, leading to unintended consequences for the lecturer's teaching environment and for the pilot project.

#### **6.3.4.2 Culture**

Lecturer B's beliefs and values as expressed through her teaching philosophy played a role in her being a participant in the pilot project and in wanting to use Blackboard for her teaching and learning environment.

*"I think basically my teaching philosophy is based on active learning. I actually like to involve the students whenever I teach and I also want to ensure that they have access first to the necessary information so that whatever form of assessment that I use becomes fair. Hence I like to make it a point that they are always taking part and they are always involved, actively involved."*

This is further explained in the follow-up questionnaire when she is asked the question about 'Blackboard alignment with the lecturers' individual beliefs and values':

*"Individual students have different learning styles and using Blackboard is one way of accommodating learning styles. I also believe that students need to take more responsibility for their own learning and using Blackboard requires of students to do that because it is up to them to check what has been posted with regard to notes, assignment instructions, notices, etc."*

#### **6.3.4.3 Agency**

Although the Dean of the Faculty selected Lecturer B to participate in the pilot project her own agential influences, derived from her prior experiences, led her to agree to participate.

*The experience that I have about eLearning firstly was not necessarily from the institution; it was when I was doing my post graduate diploma with the University of Stellenbosch, where we were using WebCT. It was then that it has helped me in that there is that regular communication between the*

*lecturer and the student, so that's when I started to get to know issues about eLearning.*

### **6.3.5 Enablements and Constraints**

Focussing more specifically on the second research question, "What conditions can be identified which might enable or constrain lecturers engagement with ICTs in Blended Learning environments?" Lecturer B identified the following conditions.

Since Lecturer B was selected by the Dean of the Faculty to participate in the eLearning pilot project, her participation carried the support of her colleagues.

Lecturer B had experience of using another LMS (WebCT) in her postgraduate study at another University. This experience boosted her confidence in using Blackboard.

These enablements suggest agential influences played a role in Lecturer B taking part in the pilot project.

Due to other prior commitments Lecturer B missed a substantial number of activities in the pilot project which led her to initially fall behind and eventually withdraw from the project. Her nomination by the Dean of the Faculty to participate in this project might be construed as a structural constraint that worked against her own agency.

### **6.3.6 Summary**

Lecturer B joined the pilot project because she needed a platform where she could engage her students in an active learning approach. She could however not complete the project because she was scheduled to go abroad during the course of the pilot project. She expressed her commitment to using the LMS to support her teaching and learning environment despite not completing the pilot project.

## **6.4 Sub-Case 3**

### **6.4.1 Introduction**

Lecturer C is teaching a course in the Faculty of Education and uses journaling as a reflective tool for students to talk about their experiences during teaching practice. The lecturer was also involved in a community engagement project with her students who needed to reflect on their experiences when they return from the communities.

## 6.4.2 The Narrative

...

**Lecturer C:** *It actually started with me.....; part of our community engagement project at the Education Faculty is a trust project which is teaching hand writing and media explaining skills. It's a UK trust and ABSA initiative. We are.....; Fort Hare is one of the five Universities in South Africa and then each University got a pilot project school, so when I started then, I was sort of there for the first year, but just as an observer then took over in the second year. At the third year of the project when I decided I needed a platform for my students to share ideas and to reflect and to try and make more sense of what they were doing in the classroom.*

*In the past they were journaling in books and I did not trust them, I thought they were perhaps writing at the very end, then I thought well either that's happening or it's their experience of journaling or lack of experience of journaling. So what I did, I approached R..... about..., to ask if there is a platform at the University where students can do online blogging or online journaling or somewhere where they could put something there in cyberspace and the rest of the class could see it, so I wanted something close, I did not want the whole world to have a say, I wanted it to be a safe environment for them. So that each of them can write something down and they would have to read somebody else's writing and support each other. So it was twofold; 1) effective writing, 2) their learning from a community engagement would deepen because they were reflecting about it.*

*So when I first attend to her about it, she was excited. She told me about the pilot project and said well, if I wanted to use Blackboard, I should come along the pilot project and learn about e-Learning.*

...

*But my project was happening in the first semester and e-Learning was happening in the second semester, so she said she would set it up for my students in the first semester and have a sandpit session for me, so I could play and design my course, so I found that very interesting and very easy. And I was able to setup and I was able to do it with my students, we had face-to-face but then a lot of online journaling, and a lot of upward tasks.*

*When the course finished we started doing eLearning. Questions that I wasn't, I kept like a logbook at the time, questions to ask R....., things that I was not sure about. It was pretty self-explanatory though, I didn't find it tricky and then I started with the eight week online course. My biggest challenge with that actual course was the time limits. Not so much when it was individual tasks/projects when it was group work, because ... when you by yourself, you can work around it, you can come in early, work when you've got some time.*

*So that to me was my biggest challenge, so that made me realise that when I give group activities in the classroom. I learnt from that, what was also difficult was the volume at which the students were writing, it was successful in that they started writing a lot more, but in terms of me keeping up with the reading of what they were writing, that was a challenge.*

**Researcher:** *... and the course or training?*

**Lecturer C:** *The actual course I enjoyed. I made some interesting contacts. I had my first teleconference, which... . I also enjoyed making contacts across the campuses and just finding out about the different faculties we had agriculture, we had the TLC, Law, Education, so I enjoyed that, so what else.*

*...*

### **6.4.3 The Activity Theory Analytic Framework**

The AT triangle outlines the components of Lecturer C's Activity System as interpreted from the above narrative.

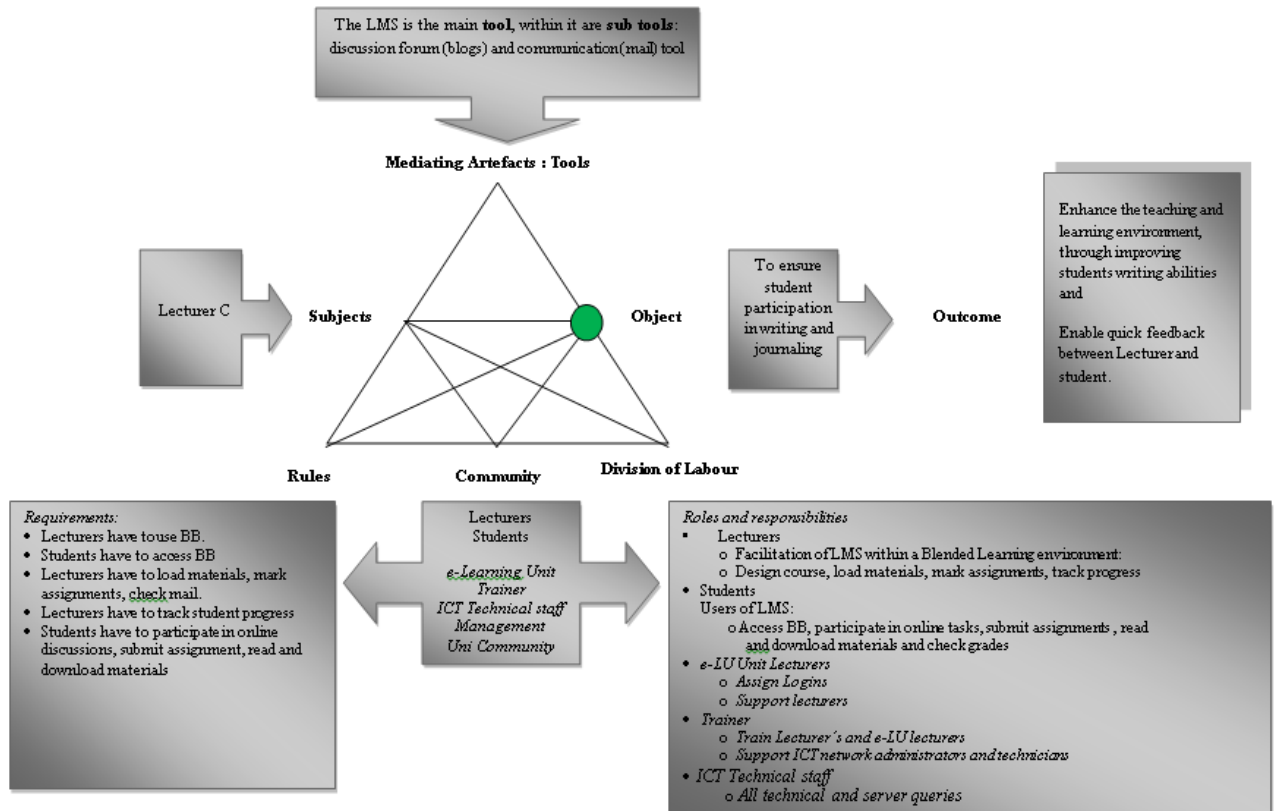


Figure 6.7 Data representation of Lecturer C's Activity System

The unit of analysis in the above activity system is Lecturer C's experience (Empirical) with the Blended Learning activity as the event (Actual). The findings are broken down and analysed using the components of the activity framework.

**Subject:** The subject of this activity system is Lecturer C, as her viewpoint is under discussion. The lecturers' philosophical position is highlighted below and some of her beliefs about teaching and learning.

*"At the third year of the project when I decided I needed a platform for my students to share ideas and to reflect and to try and make more sense of what they were doing in the classroom."*

*"... they can write something down and they would have to read somebody else's writing and support each other. So it was twofold; 1) effective writing, 2) their learning from a community engagement would deepen because they were reflecting about it."*

The above quotes suggest that the lecturer took the first step in trying to address her challenges. She had a purpose and was later motivated and supported by one of the e-learning support lecturers and coordinator to join the pilot project (structures). Her own

agency and cultural factors played a role in influencing the lecturer in participating of the pilot project. Archer (1995) explains that structure is viewed in relation to the social structures at play and agency is identified as human purposiveness such as wants, beliefs, desires and emotions.

**Object:** The object in this activity is to ensure that students engage in reflective writing and receive timeous feedback in order to achieve the **outcomes** of enhancing the teaching and learning environment:

*“... and I was able to setup and I was able to do it with my students, we had face-to-face but then a lot of online journaling, and a lot of upward tasks.”*

*“... it was successful in that they started writing a lot more, ...”*

The lecturer’s pedagogical practices are embedded in and influenced by her cultural practices which values reflective practice.

**Tools:** Tools mediate the object of the activity. In this case the lecturer feels strongly about writing and reflection. The lecturer used the journaling sub-tool accessible through the discussion forum as well as the email tool, both which are sub-tools in this activity system. The lecturer had a particular challenge of students not doing their reflective writing on time:

*“In the past they were journaling in books and I did not trust them, I thought they were perhaps writing at the very end, then I thought well either that’s happening or it’s their experience of journaling or lack of experience of journaling.”*

**Community:** The Community involved in this activity system is made of lecturers, students, e-Learning Unit, the trainer, and ICT Technical staff. The community plays a major role in influencing how the lecturer interacts with this environment, as she interacts and comes across different spaces in the pilot project. Some of the elements in the community that impacted on the project was the timing of the pilot project and the time constraints that the lecturer experienced:

*“But my project was happening in the first semester and e-Learning was happening in the second semester.”*

*“My biggest challenge with the actual course was the time limits.”*

**Division of Labour:** The division of labour was amongst the members of the community. This aspect played a major role in impacting the lecturers involved in the pilot project.

*“I learnt from that, what was also difficult was the volume at which the students were writing, it was successful in that they started writing a lot more, but in terms of me keeping up with the reading of what they were writing, that was a challenge.”*

This suggests that the lecturer needed some support in being guided as to an appropriate approach for giving feedback to students’ journal tasks on time. While her agency played a major role in achieving a goal of enabling students to do reflective writing, she found it difficult to respond to the volumes of writing her students produced.

**Rules:** Rules pertain to the processes and procedures of the community governing the teaching and learning environment. Lecturer C, for example, wanted her students to submit their journaling writings in the LMS so that she could see that they have done so in time. When they do so and submit on time then she becomes overwhelmed with responding to their writings. This entails some tensions between Lecturer C’s object and the consequent outcome. The quote below gives evidence to the lecturer’s concern.

*“... It was successful in that they started writing a lot more, but in terms of me keeping up with the reading of what they were writing, that was a challenge.”*

A follow-up questionnaire, designed to further probe the experiences of Lecturer C in relation to specific themes provided the following insights:

#### **6.4.3.1 Theme 1: Benefits in the use of Blackboard relative to existing practices**

Lecturer C’s response was that extra teaching aids are readily available to students and no problems experienced with materials getting stolen or lost as was the case with library short loans. In addition, students’ activity can be tracked, it provides a forum for class discussion, it saved on time preparing documents and it saved on printing costs.

#### **6.4.3.2 Theme 2: Blackboard alignment with the lecturers individual beliefs and values**

Lecturer C believes that teaching and learning should progress with technology without losing the physical lecturing time. The lecturer also mentions that Blackboard has been of great value to her, not replacing classes, but enhancing the teaching and learning environment.

**6.4.3.3 Theme 3: The level of difficulty experienced by the lecturer in using Blackboard**

Even though Lecturer C felt that Blackboard is fairly easy to use, she did experience problems with extract assessment data, for example to a MS Word document.

**6.4.3.4 Theme 4: The extent of support made available**

Lecturer C felt that training and support were readily available, which echoes the sentiments of other participants. One of the reasons for being readily available was that the e-Learning Unit, whose main role is to support lecturers with technology enhanced learning, was implementing the pilot project.

**6.4.3.5 Theme 5: Whether the lecturer would continue with the use of Blackboard after this experience**

Lecturer C reported that she would continue to use Blackboard.

The above descriptions are that of Lecturer C’s experiences (Empirical) of the Blended Learning event (Actual). The following outlines what may have taken place at the level of the Real.

**6.4.4 At the Level of the Real**

At the level of the Real structures and mechanisms refer to the underlying factors or influences that may or may not be immediately obvious. These structures and mechanisms are explored using Archer’s Social Realist framework, which gives focus to three domains of structure, culture and agency. The figure below illustrates the components of each of these domains.

Real Structures and mechanisms	Social Realism	Structure	Academic hierarchy Time Policies
		Culture	Beliefs and Values
		Agency	Lecturer

Figure 6.8 Lecture C, diagrammatical representation at the level of the Real

**6.4.4.1 Structure**

Lecturer C experienced structural constraints with regard to the timing of the training and the workload of giving feedback to student writing, despite the agency she displayed in driving the use of Blackboard in her teaching and learning environment. Although students

responded positively by taking up journaling, the lack of capacity to respond to student writing became a structural constraint:

*“... It was successful in that they started writing a lot more, but in terms of me keeping up with the reading of what they were writing, that was a challenge.”*

#### **6.4.4.2 Culture**

Lecturer C's beliefs and values as expressed through the articulation of her teaching philosophy played a role in her decision to participate in the pilot project and in wanting to use Blackboard for her teaching and learning environment:

*“When I decided I needed a platform for my students to share ideas and to reflect and to try and make more sense of what they were doing in the classroom”*

She expands on this in the follow-up questionnaire when asked about 'Blackboard alignment with the lecturers' individual beliefs and values':

*“The Student's activity can also be tracked and it also provides a forum for class discussion. It has also saved on time preparing documents and saved on printing costs.”*

#### **6.4.4.3 Agency**

Lecturer C displayed agency in her decision to participate in the pilot project in order to address a challenge she experienced in her teaching context. Agency was evident both in terms of the lecturer's teaching philosophy that valued reflective practice as well as finding a tool that enabled her to monitor students' writing.

#### **6.4.5 Enablements and Constraints**

Focussing more specifically on the second research question, “What conditions can be identified which might enable or constrain lecturers engagement with ICTs in Blended Learning environments?” Lecturer C identified the following conditions:

Lecturer C experienced her need to solve the challenge of not doing their readings and journal writing, and of her not knowing whether or not her students are writing their journals timeously as an enablement. Similarly she found the encouragement to participate in the eLearning pilot project and the students' positive response to journal writing online to be enabling conditions.

The most important constraint centred on Lecturer C's lack of capacity to provide her students with timeous feedback due to the high volumes of writing.

#### **6.4.6 Summary**

Lecturer C wanted to improve her students' writing by using journaling through Blackboard. While the students responded well to the activity the lecturer was now faced with the challenge of reading a large number of student responses and giving feedback on time, which she found difficult to do.

### **6.5 Sub-Case 4**

#### **6.5.1 Introduction**

Lecturer D is from the Teaching and Learning Centre. She is a consultant who teaches the web-based learning (WBL) module of the Post Graduate Diploma in Higher Education and Training (PGDHET) to lecturers at the University. The eight students of Lecturer D came from different departments across the University. Lecturer D's described her experience of using the LMS for Blended Learning as follows:

#### **6.5.2 The Narrative**

...

**Lecturer D:** *My teaching philosophy basically I can say is all about constructivism. I think I align more with that philosophy. Constructivism in the sense that I always want people to talk about what they have experienced, about how they relate to natural situations and to argue basing on what they have experienced. This philosophy I have just shifted to it of late, just because of my work environment, where I am working daily with academics. They are mature people, they have experienced a lot of things and they have experimented a lot with things. So for me to be able to be on the same page with them in what I am teaching them, I want to base it on what they have experienced before I introduce anything new.*

**Researcher:** *Ja, then what was your experience.*

**Lecturer D:** *Basically I got involved in the pilot project because I am teaching one of the modules in the PGDHET and because of that most of my students, actually all of them are lectures, they are people who also have taught in class for one year or in one period or the other. So whatever*

*I teach them in that module they have to give accounts of what they have experienced, and then reflect on that? In other words they'll be commenting on whatever they have been doing whether they think it is positive or negative in what way. They have to explain why and how they think they could improve they practice.*

*Again using the same philosophy in the case of WBL, that module is basically talking about how they can use technology to improve teaching and learning. So for them to really buy in the idea of technology, they have to tell us how they have been doing things, what are the challenges they have been experiencing and how do they think technology can actually help them in improving their teaching and learning challenges. So in that way there's a lot of experience involved, there are a lot of perceptions that are involved for them really to be able to meet the criteria for that module.*

*In the pilot project I also wanted to encourage my students to see the relevance of the things that I talk about in the course. So I felt I needed to involve them in the pilot project. As a lecturer and also myself I also wanted to get the level of experience any students would need to experience before I could sell the idea to all, rest of the lecturers that's how I got involved in the pilot project.*

*...*

*Before getting involved in the pilot project I was trained as a Blackboard trainee. In other words I also had the experience of being a student in a Blended Learning environment and I have experienced the ups and downs of it all, really that theory and practice did not align.*

*My experience as a student has really been that the module has been really difficult, it took a lot of my time, most of the time I had to work late at night, or after five. It was a time consuming experience. So basically my experience has been that, it's quite a time consuming thing. But it has had its benefits, it has exposed me to a lot of opportunities and in the same way in the pilot project I could see that even my students were talking about the same problems.*

*In my experience, let me talk about the positive was that at least we managed to link the theory to practice, those things that we were talking about, what the benefits are and everything we could even try it and people were positive about what we were talking about. For instance the use of*

*Chat rooms, use of email, the moment we even agreed that everyone would communicate using Blackboard instead of the conventional email, of which that was good, we even had some assignments loaded on the system, in the Blackboard system and people would respond to them.*

*However somewhere along the line we also had our own challenges and actually the first challenge was the issue of access to computers, the technology would chuck you out, sometimes even myself the lecturer I was trying to load the learning materials, it would throw me out. I would take the whole day trying to load again; it was frustrating really, because you would have planned in time.*

**Researcher:** *Ja, I know*

**Lecturer D:** *Another sort of a challenge that I encountered was that besides me getting the training, you would notice that in an online environment the kind of way in which you input the learning materials is not the same as you would in conversational teaching. There is really a lot of planning involved there; you need a lot of educational skill that is required. The proper teaching and learning methodology we need to be able to capture the audience. The whole design needed more planning than what I had thought and done. The other challenge mainly links to the issue of technology problems, my students took that as an excuse, the whole month they would say they could not log on. You know academics once they pick up a problem, they exaggerate the problem that actually happened in my course, and some students could not do the assignment because they said they could not log on, yet the programme was long working. That really affected the whole pilot project, as we could have had more time to find out whether the pilot project worked for us.*

**Researcher:** *Ja, students are students.*

**Lecturer D:** *...actually in that project, what we were intending training, we wanted the lectures to actually design a course online and have learning materials online have at least an assessment task online and have students log on. Not all the lectures were able to implement in the way we had intended. Besides all those negative experiences and challenges I would not mind having to continue and have another course online using Blackboard.*

*...*

### 6.5.3 The Activity Theory Analytic Framework

The AT triangle outlines the components of Lecturer D's Activity System as interpreted from the above narrative.

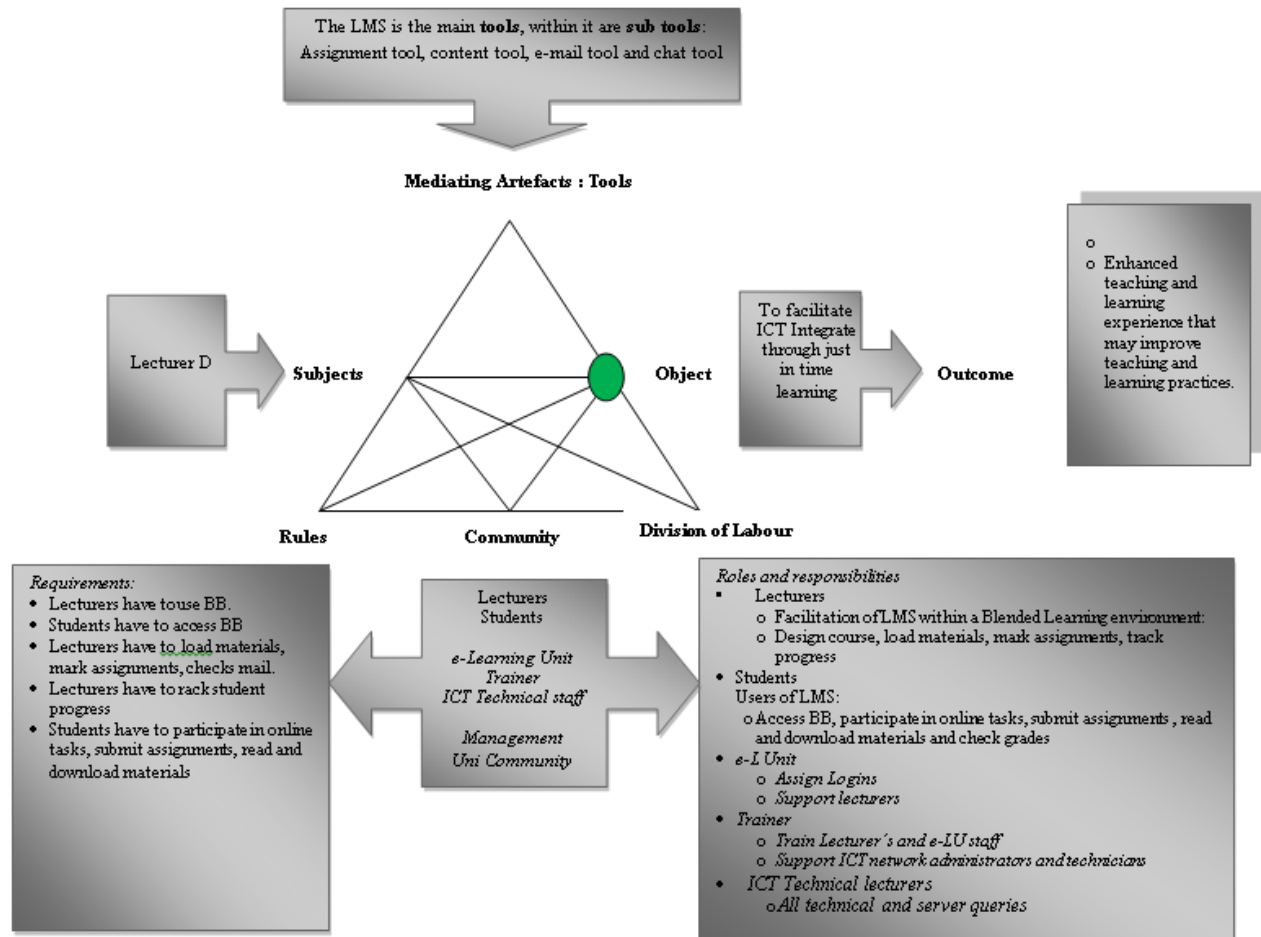


Figure 6.9 Data representation of Lecturer D's Activity System

The unit of analysis in the above activity system is Lecturer D's experience (Empirical) with the Blended Learning activity (Actual). The findings are analysed using the components of Leont'ev's AT framework:

**Subject:** The subject of this activity system is Lecturer D as her experience is under study.

**Object:** The objective is to facilitate ICT integration through just-in-time learning in order to achieve the *outcome*, which is to enhance the teaching and learning experience:

*“Again using the same philosophy in the case of WBL, that module is basically talking about how they can use technology to improve teaching and learning. So for them to really buy in the idea of technology, they have to tell us how they have been doing*

*things, what are the challenges they have been experiencing and how do they think technology can Actually help them in improving their teaching and learning challenges.”*

*“As a lecturer and I also wanted to get the level of experience any student would need to experience before I could sell the idea to all, rest of the lecturers that’s how I got involved in the pilot project.”*

**Tools:** Tools mediate the object of the activity. There are a number of tools the lecturer used for the activity system: Chat, e-mail, assignment and course content tools:

*“For instance the use of Chat, use of email, the moment we even agreed that everyone would communicate using Blackboard instead of the conversational email, of which that was good, we even had some assignments loaded on the system, in the Blackboard system and people would respond to them.”*

**Community:** The members of the community in this activity system are lecturers, students, e-Learning Unit staff, the trainer, and ICT Technical staff.

**Division of Labour:** Division of labour is amongst the different members of the community. Below are quotes that speak to issues of division of labour in this community:

*“The other challenge mainly links to the issue of technology problems, my students took that as an excuse, the whole month they would say they could not log on. You know academics once they pick up a problem, they exaggerate the problem that actually happened in my course, and some students could not do the assignment because they said they could not log on, yet the programme was long working.”*

**Rules:** Rules pertain to the roles and responsibilities of each of the community members. Policy and procedures govern the teaching and learning environment. The module Lecturer D taught to Lecturers was in support of the ICT integration strategy of the University.

*“In my experience, let me talk about the positive was that at least we managed to link the theory to practice, those things that we were talking about, what the benefits are and everything we could even try it and people were positive about what we were talking about.”*

*“...actually in that project, what we were intending training, we wanted the lectures to actually design a course online and have learning materials online have at least an assessment task online and have students log on.”*

A follow-up questionnaire, designed to further probe the experiences of Lecturer D in relation to specific themes provided the following insights:

#### **6.5.3.1 Theme 1: Benefits in the use of Blackboard relative to existing practices**

Lecturer D responded that Blackboard gave her the ability to put learning resources in one repository, accessible to all students. Documents do not get misplaced and students are able to access and use materials even outside lecture times.

#### **6.5.3.2 Theme 2: Blackboard alignment with the lecturers individual beliefs and values**

Blackboard was seen as similar in that it enhances independent learning and self-regulation. Blackboard enabled the 'ability to use multimedia to link to real life experiences and improve learners understanding.'

#### **6.5.3.3 Theme 3: The level of difficulty experienced by the lecturer in using Blackboard**

The lecturer felt that the level of difficulty is low because she had prior knowledge of computers.

#### **6.5.3.4 Theme 4: The extent of support made available**

The lecturer indicated that support was 'very much', which indicates that the support was readily available and accessible. She acknowledged that the support staff did their best to ensure that lecturers are well supported.

#### **6.5.3.5 Theme 5: Whether the lecturer would continue with the use of Blackboard after this experience**

The lecturer responded that she would continue with the use of Blackboard.

The above analysis speaks to the experiences at the level of the Empirical and the Blended Learning event at the level of the Actual. The next section focusses on a description of enabling and constraining conditions at the level of the Real.

### **6.5.4 At the Level of the Real**

At the level of the Real structures and mechanisms refer to the underlying factors or influences that may or may not be immediately obvious. These structures and mechanisms are explored using Archer's Social Realist framework, which focusses on the three domains

of structure, culture and agency. The figure below illustrates the components of each of these domains.

Real Structures and mechanisms	Social Realism	Structure	Academic hierarchy Time Policies
		Culture	Beliefs and Values
		Agency	Lecturer

Figure 6.10 Lecture D, diagrammatical representation at the level of the Real

#### 6.5.4.1 Structure

Structure plays out according to the rules that govern the community. The community in this case is made of the University community and within the wider community of the provincial, national and international contexts. In a teaching and learning environment within the University community policies and regulations that govern the community. These policies include the Teaching and Learning policy, the Evaluation policy, the Recognition of Prior Learning policy (RPL) and the University Strategic plan.

#### 6.5.4.2 Culture

Lecturer D's beliefs and values as expressed in her teaching philosophy played a major role in her decision to participate in the pilot project and in wanting to use Blackboard for her teaching and learning environment:

*“My teaching philosophy basically I can say is all about constructivism. I think I align more with that philosophy. Constructivism in the sense that I always want people to talk about what they have experienced, about how they relate to natural situations and to argue basing on what they have experienced.”*

This is further explained in the follow-up questionnaire when she is asked the question about ‘Blackboard alignment with the lecturers individual beliefs and values’.

*“Blackboard was seen as similar in that it enhances independent learning and self-regulation. Blackboard enabled the ‘ability to use multimedia to link to real life experiences and improve learners understanding.”*

Both statements offer an understanding of the lecturer's beliefs and values about learning and what she would like to achieve in her classroom environment.

### **6.5.4.3 Agency**

Agency speaks to what motives a lecturer to do things the way she chooses. Lecturer D is teaching her colleagues in other departments, who are adult learners. She believes that adult learners are able to learn self-sufficiently. Lecturer D joined the pilot project because she was motivated by the fact that she was a Blackboard Certified trainer.

### **6.5.5 Enablements and Constraints**

Focussing more specifically on the second research question, “What conditions can be identified which might enable or constrain lecturers engagement with ICTs in Blended Learning environments?” Lecturer D identified the following conditions.

The huge number of benefits in using Blackboard in the teaching and learning environment appealed to Lecturer D. These benefits relates to ease of communication, simplicity in giving students assignments and enabling students to respond more quickly to the materials accessed through Blackboard.

Some of the constraints mentioned by the lecturer speak to poor accessibility to computers caused by poor network connections, publishing and accessing content being time consuming due to poor network connections, submission of assignments often being delayed as a result of bad network connections and training of the Blackboard process not speaking to the design of materials for online system.

### **6.5.6 Summary**

Lecturer D subscribes to constructivism as her philosophical grounding. The Blended Learning pilot project advantaged her class as they were able to practice what they were learning in the course.

## **6.6 Sub-Case 5**

### **6.6.1 Introduction**

Lecturer E is a Senior Lecturer in Industrial Psychology in the Faculty of Management and Commerce. He teaches first and third year students in Industrial Psychology. Below is Lecturer E’s account of his experience of the use of the LMS for Blended Learning.

### **6.6.2 The Narrative**

...

**Lecturer E:** *First of all I am trying to tell you why I decided to use the eLearning facility within the institution. I got the experience from my previous studies from another institution and I found them very useful, but when I looked around the University I did not know that the facility exists, until I then approached your office and I was told that it does exist. I also looked at the nature of our students in terms of their backgrounds, I said to myself I think we also need to make sure that they get exposed to these technological ways of learning and to make them fit for a particular purpose when they leave the University they need to be familiar with technology which is happening out there and obviously the background they need to get it from the University.*

*When I first talked about providing notes and assignments through Blackboard to my students, it was really a great shock to them; there were a lot of question from students as they have never been exposed to Blackboard. Questions ranged from “do we need to pay money”, “we don’t have computers”. Some of them thought they need to have a computer in order to have access to the eLearning facility and many of them were saying that computers within the University are not enough, but I continued assuring them that the computers are enough, you all need to have a few minutes on the computer and they are enough to give each the space. When I registered my students I did not have a problem with that it went smoothly as it was done by your unit. When it came to using Blackboard itself. What I did is I went to class and told them I have registered them all in Blackboard and they were excited. After that I told them to go to their computers and check if they could access Blackboard with their logons. When they came back they were very excited, and it was really exciting.*

**Researcher:** Yes

**Lecturer E:** *We need this; third years said it has come very late to us. ... We encourage the University to introduce this type of learning actually at first year level. They asked me about other functions that can be performed by Blackboard, but because I was our only interested..... They asked me about other functions that can be performed by Blackboard but because myself I was only interested ... We only needed to practice it, it was our first time to use, and we had time limits. So what we did with eLearning with my students, it was first years and third year students ...*

*Accessed notes on Blackboard and submitting assignments on the Blackboard and giving them grades, that is what I was only doing but mostly they were notes. It was really quite exciting. I was also using it to make announcements that one was very good. I told them I am no more..... I also encouraged them to check their Blackboard almost on a daily basis, at least three times a day because I would make announcements of cancelling lectures..... Here is the most interesting part of my experience, "Sir, I we going to write exams using Blackboard" and I said no that's not going to happen. Even after writing their exams some went to Blackboard to check their results, and then they went to my office, "Sir we can't find our results in Blackboard".....*

*Researcher: Mom.....*

**Lecturer E:** *So for you exams you go to the exams office.... Basically these are my experiences. I really encourage the University to make this one a compulsory thing at first year level, because really they have this affinity ...They really ...*

*They find themselves equal to students in other Universities when they tell them in class by so doing you can go to other institutions ...*

*I used this thing for about 3-4 months so I think but from my experience it actually freed me from a lot of my work load, lot of the paper work. At last I was relieved I was just doing everything at a click of a button in my office.*

**Researcher:** *I would like to thank you for your input, as I said I will transcribe and send the transcription to you for editing*

**Lecturer E:** *Good, I am also looking forward to reading it.*

*...*

### 6.6.3 The Activity Theory Analytic Framework

Below is the AT triangle outlining the components of Lecturer E's Activity System as interpreted from the above narrative.

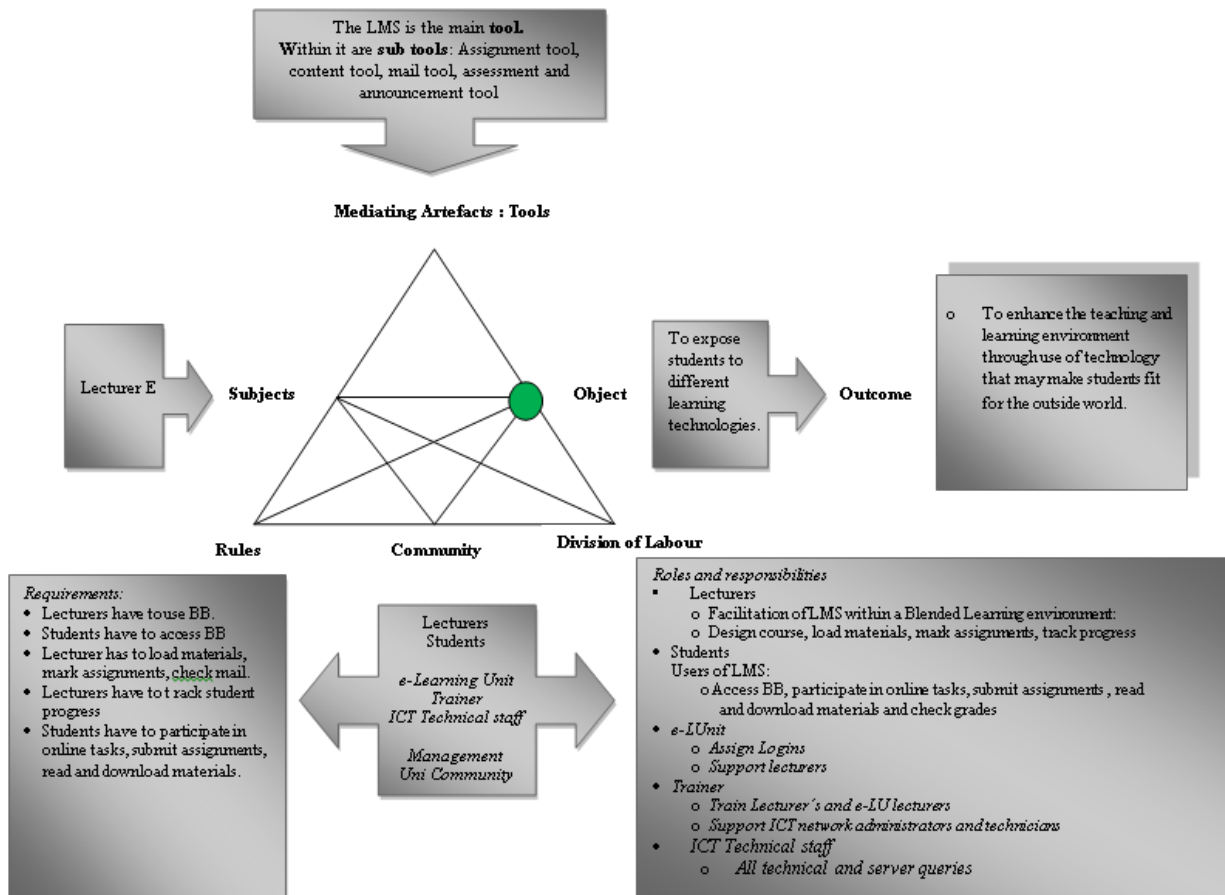


Figure 6.11 Data representation of Lecturer E's Activity System

The unit of analysis in the above activity system is Lecturer E's experience (Empirical) with the Blended Learning activity (Actual). The findings are analysed using the components of the AT framework. The above framework is explained as follows;

**Subject:** The subject of this activity system is Lecturer E as his viewpoint is being acknowledged.

**Object:** The object to expose students to different learning technologies so that they are fit for the world of work in order to achieve the **outcomes** which are to enhance the teaching and learning environment through use of technology.

*"I also looked at the nature of our students in terms of their backgrounds, I said to myself I think we also need to make sure that they get exposed to these*

*technological ways of learning and to make them fit for a particular purpose when they leave the University they need to be familiar with technology which is happening out there and obviously the background they need to get it from the University.”*

**Tools:** Tools mediate the object of the activity:

*“When I first talked about providing notes and assignments through Blackboard to my students ...”*

*“Accessed notes on Blackboard and submitting assignments on the Blackboard and giving them grades, that is what I was only doing but mostly they were notes. It was really quite exciting. I was also using it to make announcements that one was very good.”*

**Community:** The community is made up of various participants of this activity system e.g. lecturers, students, e-Learning Unit staff, the trainer, and ICT Technical staff.

**Division of Labour:** Division of labour is amongst the different members of the community:

**Rules:** Rules pertain to the roles and responsibilities of each of the community members. Policy and procedures also govern the teaching and learning environment.

A follow-up questionnaire, designed to further probe the experiences of Lecturer E in relation to specific themes provided the following insights:

#### **6.6.3.1 Theme 1: Benefits in the use of Blackboard relative to existing practices**

Lecturer E responded that Blackboard makes his work easier. Blackboard specifically benefited large class teaching as he is now able to handle the class more efficiently. Using Blackboard also had environmental benefits, e.g. the reduction of the use of paper (for assignment, test and materials).

#### **6.6.3.2 Theme 2: Blackboard alignment with the lecturer’s individual beliefs and values**

The lecturer responded that the use of the LMS corresponds to his existing beliefs and practices. He argued that it allows lecturers to reach out individually to all the students in a fair manner. And he added that it helps with monitoring and evaluating of the use of the technology.

**6.6.3.3 Theme 3: The level of difficulty experienced by the lecturer in using Blackboard**

The lecturer felt he did not find it difficult at all. He attributes this to having a very sound technology background, to the training and support received and to his studies in which he used an LMS before. He felt that Blackboard is very user-friendly.

**6.6.3.4 Theme 4: The extent of support made available**

The lecturer indicated that support was to a large extent available. The fact that he received training in the use of Blackboard also helped.

**6.6.3.5 Theme 5: Whether the lecturer would continue with the use of Blackboard after this experience**

The lecturer responded that he will continue, as Blackboard help him to maintain and control his large class.

The above analysis speaks to the experiences at the level of the Empirical and the Blended Learning event at the level of the Actual. The following outlines what may have taken place at the level of the Real.

**6.6.4 At the Level of the Real**

At the level of the Real structures and mechanisms refer to the underlying factors or influences that may or may not be immediately obvious. These structures and mechanisms are explored using Archer’s Social Realist framework, which gives focus to three domains of structure, culture and agency. The figure below illustrates the components of each of these domains.

Real Structures and mechanisms	Social Realism	Structure	Academic hierarchy Time Policies
		Culture	Beliefs and Values
		Agency	Lecturer

Figure 6.12 Lecture E, diagrammatical representation at the level of the Real

To offer an understanding of the lecturer’s experience of the Blended Learning environment the data is unpacked further according to these three domains:

#### **6.6.4.1 Structure**

Critical Realism argues that the domain of the Real contains underlying structures and mechanisms which are not directly observable, but which represent powers and tendencies, and these underlie the events at the level of the Actual and experiences at the level of the Empirical. As the lecturer talks to his Empirical experience of the Blended Learning event, there is no mention or observation of what underlies his experience. Yet the whole event of Blended Learning happens within a community with rules and roles, and an institution with a history and culture.

The Blended Learning environment is affected by structural conditions such as the lack of computers, computer literacy issues with students etc. In this and other cases the introduction of Blackboard as a technology came with its own structural mechanisms that were both enabling, as they changed practice, and constraining as there were a lot of challenges of lack of computers and students lacking skill in use of computers.

#### **6.6.4.2 Culture**

Culture is underpinned by our beliefs and values. The lecturer beliefs and values in the form of his philosophical underpinnings play a major role in him being a participant in the pilot project and in wanting to use Blackboard for his teaching and learning environment.

*I also looked at the nature of our students in terms of their backgrounds, I said to myself I think we also need to make sure that they get exposed to these technological ways of learning and to make them fit for a particular purpose when they leave the University they need to be familiar with technology which is happening out there and obviously the background they need to get it from the University.*

This is further explained in the follow-up questionnaire when he is asked the question about 'Blackboard alignment with the lecturers individual beliefs and values':

*"The lecturer responded by saying that the use of the LMS is to aid lecturer's existing beliefs and practices as well as to facilitate the implementation of values and beliefs. He argued that it allows Lecturers to reach out individually to all the students in a fair manner. And he added that it helps with monitoring and evaluating of the use of the technology."*

Both statements give an understanding of the lecturer's beliefs and values about learning and what he would like to achieve in his classroom environment.

### **6.6.4.3 Agency**

Agency within both the C/SR perspective and AT recognises that individuals are shaped by their environments and can also shape their environments according to their objects.

Therefore agency is a critical factor in this and all the cases.

Agency is evident in the case as the lecturer was the one that searched for an alternative way of enhancing his teaching and learning environment and found that there was a pilot project starting. His objective was to encourage his students to be technologically proficient. Therefore the lecturer played a major role through human agency in transforming his teaching and learning environment.

### **6.6.5 Enablements and Constraints**

Focussing more specifically on the second research question, “What conditions can be identified which might enable or constrain lecturers engagement with ICTs in Blended Learning environments?” Lecturer E identified the following conditions.

The lecturer felt that this will enable him and his students to keep abreast with modern technology. He highlighted that the system was easy to implement, and it increased student accessibilities to information. The lecturer also pointed out the following benefits:

The students had 24 hour access to notes on Blackboard from anywhere on campus. These were notes and materials published by the lecturer, which would have been otherwise printed and distributed manually. In cases of manual distribution the ones absent would not get the materials.

The students were allowed to submit their assignment on Blackboard, which saved them printing costs.

The lecturer was also able to monitor and track the performance of his students through Blackboard.

Blackboard communication tool makes it easy to pass information to students rather than traditional ways of posting notices and shouting in class.

Conducting assessments through Blackboard allows for less of a marking load and paper work.

The constraints identified in this case were that students had to practice a lot in order to use the system effectively. It was also time consuming for the lecturer to enter materials and design the course online.

### 6.6.6 Summary

Lecturer E was fascinated by the availability of the LMS. He is aware that Blackboard has been in existence for some time now although it is quite new to students due to its late implementation. He believes it is better implemented in a University environment and puts the students on par with other University students.

He mentioned that his students were excited and complained that its implementation was coming a bit late and that they advised that it should be commenced as from the first year level.

## 6.7 Sub-Case 6

### 6.7.1 Introduction

Lecturer F is a Consultant/Lecturer at the Faculty of Science and Agriculture. He was teaching second and third year students an Introduction to Computers and Computing. Below is Lecturer F's account of his experience of the use of the LMS for Blended Learning purposes.

### 6.7.2 The Narrative

...

**Researcher:** *Good Afternoon, as per our telephonic conversation, I am here for the interview. I would like you to tell me about your experience of the Blended Learning pilot project, starting with your teaching philosophy.*

**Lecturer F:** *...My teaching philosophy is profound on the belief that learning takes place despite all the obstacles institutionalized education would put in our way. We learn every minute of the day and that is what I like about learning. Lev Vygotsky saw learning as a process in which an active mind constructs knowledge through internal integration of preconceptions with new knowledge. Learning is life-long and it involves progression of students through developmental cycles, to change the way they think and the way they view life. Experience has taught me that one way or another, students come to my class knowing something. Ever since*

*I started teaching, I came across different types of students and that led my beliefs to keep on evolving. Learning occurs best when there is a student involved, and the kind of students we teach come from different backgrounds, they learn in different ways and at different rates. I believe that all students have the ability to learn. They learn best when they experience success, become responsible for their learning, are able to work both as individuals and collaboratively, and when they are properly assessed and challenged. With the diversity of students, I believe that students need to be valued for who they are, they need to be encouraged and respected in order to achieve the best learning environment.*

**Researcher:** *Yes and in your class*

**Lecturer F:** *Ja you know... as a facilitator, my role is to engage my students on a journey of acquiring a lifelong skill that they have to apply on a daily basis. I expect my students to apply the learned skills in real life situations, operate in diverse situations both socially and academically. I strongly believe that somebody should only teach if they are enjoying it. There is nothing better than having a teacher who is passionate about what s/he is doing, someone who cares about students and interested in teaching. In order to cater for all students, despite their backgrounds, I use a variety of teaching methods. The teacher, as a speaker of the specialist discourse, is able to 'lend' students the capacity to frame meanings they cannot yet produce independently (Northedge, 1999). In striving to reach all my students and their learning paces, I always make time for those who would like to see me for extra classes. I make good use of the available technology in order to have contacts with my students even outside the classroom, I use Chat rooms and social networks like Google Talk, Facebook and Windows live so that if they cannot have a face-to-face contact with me they can always go to the computer laboratories or use their cell phones to talk with me. I believe that a teacher should not just be a teacher to the students, but also a friend and there should be a good relationship between them. My interaction with different students over the years has developed my teaching style. I have encountered challenges in the past years, lack of teaching resources and dealing with large classes.*

**Researcher:** *What about your Blended Learning experience?*

**Lecturer F:** *Online learning is what I think of when Blended Learning is mentioned. At first I thought it was about putting everything online and that there will be no more face-to-face contact with the students, but as I was introduced and did some reading I had some clarity on what it is about..... I think Blended Learning is about a mixture of different learning environments where learners and teachers are given a potential environment to learn and teach more effectively. Blended Learning provides realistic practical opportunities for learners and teachers to make learning independent, useful, sustainable and ever growing. Blended Learning refers to the use of resources that combine e-learning with educational resources.*

**Researcher:** *Your implementation*

**Lecturer F:** *In 2008, I was trained on how to use the LMS (Blackboard) that was being introduced then. As an eLearning consultant I am expected to facilitate and assist academics and students on how to use the system. Since then I have used the system as an Administrator, a teacher and as a student. Even though most academics are still reluctant to integrate technology in their teaching, I think the LMS can address most of the challenges that academics are facing when it comes to teaching and learning. These challenges include large classes, design of teaching venues, language competence, different type of students (age, gender, learning styles etc.).*

**Researcher:** *.....and in your class...*

**Lecturer F:** *Well.... when I started using Blackboard with my class, I made use of few tools (communication, assessment & assignment submissions). There was still a face-to-face contact, and then students were trained on how to access and use Blackboard. They have to be taught how to get the stuff that has been loaded and how to submit it. The idea behind implementing the Blackboard is great, but I was faced with challenges of lack of resources. I was mainly dealing with the Faculty of Science and Agriculture students who spend most of their time in field or in science laboratories as part of their training. Most of them were complaining that it is difficult for them to have access to computers and Internet. Another challenge that I encountered when I was training the academics was that,*

some academics still needed to be computer literate. I am now mostly working on the Administrators side of the LMS.

**Researcher:** Thank You Mr....., as I said before I will transcribe and give you're the transcribed data to reread and maybe edit if you want to make any changes or additions.

...

### 6.7.3 The Activity Theory Analytic Framework

The AT triangle outlines the components of Lecturer F's Activity System as interpreted from the above narrative.

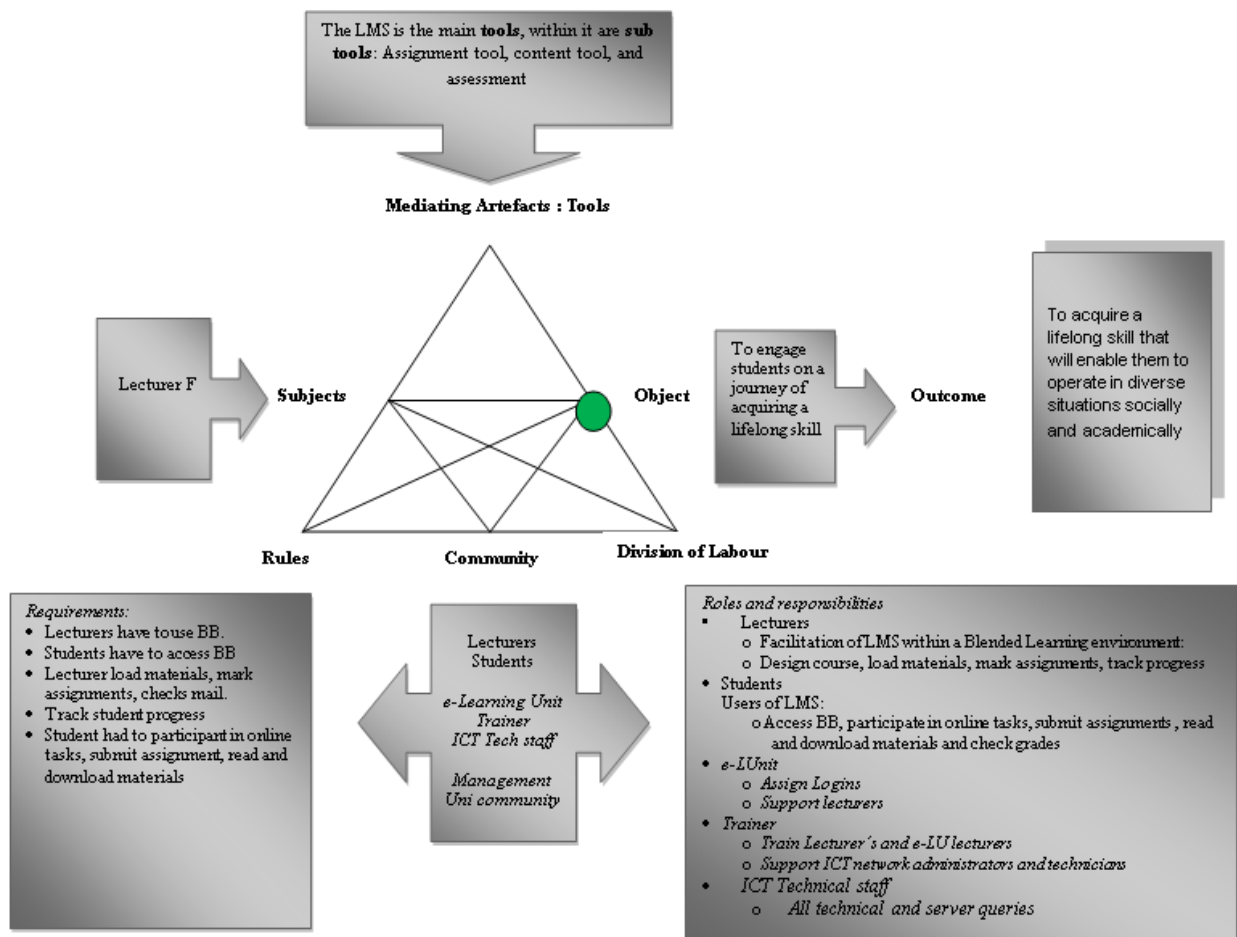


Figure 6.13 Data representation of Lecturer F's Activity System

The unit of analysis in the above activity system is Lecturer F's experience (Empirical) with the Blended Learning activity (Actual). The findings are broken down and analysed using the components of the AT framework.

**Subject:** The subject of this activity system is Lecturer F, as his experience and beliefs about teaching and learning are under discussion. As with all the other subjects, it is important to understand Lecturer F's philosophical position about teaching and learning, so as to better understand why he got involved in the pilot project and why he chose to do things the way he outlines in the narrative. Drawn from the narrative above are quotes that outline Lecturer F's viewpoint as well as his philosophical position in this case:

*“My teaching philosophy is profound on the belief that learning takes place despite all the obstacles institutionalized Education would put in our way. We learn every minute of the day and that is what I like about learning. Lev Vygotsky saw learning as a process in which an active mind constructs knowledge through internal integration of preconceptions with new knowledge. Learning is life-long and it involves progression of students through developmental cycles, to change the way they think and the way they view life.”*

*“I believe that all students have the ability to learn. They learn best when they experience success, become responsible for their learning, are able to work both as individuals and collaboratively, and when they are properly assessed and challenged. With the diversity of students, I believe that students need to be valued for who they are, they need to be encouraged and respected in order to achieve the best learning environment.”*

From the two quotes one can gain insight into the lecturer's teaching philosophy. There are three profound statements the lecturer makes about learning. Learning takes place despite all obstacles, learning is a process of engagement and that learning is a lifelong endeavour. Lecturer F also believes that all students have the ability to learn.

**Object:** The object in this case is to reach out to all students and to engage students on a journey of acquiring a lifelong skill that they have to apply on a daily basis in order to achieve the outcome which is to acquire lifelong skills that will enable them to operate in diverse situations socially and academically.

*“As a facilitator, my role is to engage my students on a journey of acquiring a lifelong skill that they have to apply on a daily basis. I expect my students to apply the learned skills in real life situations, operate in diverse situations both socially and academically.”*

**Tools:** The main tool to mediate the object of the activity is Blackboard. The following sub-tools within Blackboard were used, the e-mail tool for communication, the assessment tool

and the assignment tool for task submissions. The quote below is extracted from the narrative.

*“When I started using Blackboard with my class, I made use of few tools (communication, assessment & assignment submissions).”*

It is to be noted that the lecturer did use other tools (Google talk, Facebook and windows live) to mainly communicate with his students, long before Blackboard was made available. It is clear though that Blackboard gave him an added advantage with the availability of sub-tools for assessment and assignment submissions.

**Community:** As seen from the above diagram the main participants in this activity system are the lecturers, students, e-Learning Unit staff, the trainer, and ICT technical staff. The community plays a major role in influencing how the lecturer interacts with this environment. The following quotes highlight some experiences that were influenced by the lecturers' community.

*“I think the LMS can address most of the challenges that academics are facing when it comes to teaching and learning. These challenges include large classes, design of teaching venues, language competence, different type of students (age, gender, learning styles etc.).”*

*“The idea behind implementing the Blackboard is great, but I was faced with challenges of lack of resources. I was mainly dealing with the Faculty of science and agriculture students who spend most of their time in field or in science laboratories as part of their training. Most of them were complaining that it is difficult for them to have access to computers and Internet.”*

*“Another challenge that I encountered when I was training the academics was that some academics still needed to be computer literate.”*

Some of the challenges outlined in these quotes speak to structural issues that need to be addressed, for example, lack of resources. Some speak to mechanisms that would have involved planning, again the issue of lack of resources and availability of computers with Internet access. Some of the challenges outlined speak to the lecturer playing multiple roles.

**Division of Labour:** The division of labour is amongst the different members of the community. Again all the community members have different roles to play. The lecturer in particular is responsible for his classroom environment. The role of the lecturer specifically is

that of incorporating the tool into his teaching and learning environment which involves much planning and preparing.

**Rules:** Rules pertain to policies governing the community environment. Those policies and procedures governing the teaching and learning environment are spoken to in Chapter Seven.

A follow-up questionnaire, designed to further probe the experiences of Lecturer F in relation to specific themes provided the following insights:

#### **6.7.3.1 Theme 1: Benefits in the use of Blackboard relative to existing practices**

Lecturer F felt that the system assisted in improving communication with his students.

*“Students are participating and making use of the discussion tool.”*

The mention of improved communication implies that there were benefits accrued from the use of Blackboard relative to existing practices.

#### **6.7.3.2 Theme 2: Blackboard alignment with the lecturers individual beliefs and values**

Lecturer F felt that there were close alignment between his beliefs and values and the affordances of Blackboard.

*“My teaching philosophy is profound on the belief that learning takes place despite all the obstacles institutionalized education would put in our way. We learn every minute of the day and that is what I like about learning...”*

*“As a 21<sup>st</sup> century citizen, I believe learning takes place anywhere even beyond the institutions holdings and that is where the integration of technology fits in.”*

#### **6.7.3.3 Theme 3: The Level of difficulty experienced by the lecturer in using Blackboard**

The lecturer did not find the use of the system challenging. He highlighted that it was very easy for him. It is also notable that the lecturer was a computer technical administrator, which suggests he was competent in the use of computers.

#### **6.7.3.4 Theme 4: The extent of support made available**

The lecturer indicated that support was always there and the support team was very willing to assist.

### 6.7.3.5 Theme 5: Whether the lecturer would continue with the use of Blackboard after this experience

The lecturer responded that he would continue with the use of Blackboard.

The above analysis speaks to the experiences at the level of the Empirical and the Blended Learning event at the level of the Actual. The following outlines what may have taken place at the level of the Real.

#### 6.7.4 At the Level of the Real

At the level of the Real we deal with structures and mechanisms. The structures and mechanisms speak to the underlying factors or influences that may not be visible to other parties. At the domain of Real, these structures and mechanisms are best understood using Archer's Social Realist framework, which gives focus to three domains: structure, culture and agency. The figure below explains the components of each domain.

Real Structures and mechanisms	Social Realism	Structure	Academic hierarchy Time Policies
		Culture	Beliefs and Values
		Agency	Lecturer

Figure 6.14 Lecture F, diagrammatical representation at the level of the Real

To offer an understanding of the lecturer's experience of the Blended Learning environment the data is further unpacked according to these three domains:

##### 6.7.4.1 Structure

As in the other cases, structure plays out according to the rules that govern the community. The community in this case is made of the University community and within the wider community of the province, nationally and internationally. Within the University community there are policies and regulations that govern this community, which are applicable to all. These policies include the Teaching and Learning policy, Evaluation policy, Recognition of Prior Learning policy (RPL), and the University Strategic plan.

The dilemma of structure in this particular case plays out in the roles the lecturer plays as a member of lecturers in the institution. He is a lecturer, a consultant and a Blackboard administrator. This relation suggests tensions between the different roles played by the lecturer in this particular case. These tensions might not be evident enough in the narrative as the lecturer tries to outline his role of being a consultant, administrator and lecturer. But

one may highlight the issue of having to support lecturers and students with challenges vs the role of being a lecturer and being faced with the same challenges faced by the other lecturers and students as a tension.

#### **6.7.4.2 Culture**

Culture is underpinned by our beliefs and values. Lecturer F's beliefs and values in the form of his philosophical underpinnings play a major role in him being a participant in the pilot project and in wanting to use Blackboard for his teaching and learning environment.

*“My teaching philosophy is profound on the belief that learning takes place despite all the obstacles institutionalized education would put in our way. We learn every minute of the day and that is what I like about learning.”*

This is further explained in the follow-up questionnaire when the lecturer is asked the question about 'Blackboard alignment with the lecturer's individual beliefs and values'.

*“As a 21<sup>st</sup> century citizen, I believe learning takes place anywhere even beyond the institutions holdings and that is where the integration of technology fits in.”*

Both statements offer an understanding of the lecturer's beliefs and values about learning and what he would like to achieve in his classroom environment.

#### **6.7.4.3 Agency**

Agential influences for Lecturer F can be broken down to the following factors: the fact that he is an e-Learning consultant, which means he has to assist Lecturers in the use of Blackboard. This means he also has to be knowledgeable about the tool. He is also a Lecturer and faces some challenges that he believes can be addressed by the use of the tool. This speaks to the link between agency and structure; the lecturer's teaching philosophy plays a role in driving his motivation for participating in the pilot project. His beliefs about learning and also about his student's ability to succeed enabled him to change his practice.

#### **6.7.5 Enablements and Constraints**

Focussing more specifically on the second research question, "What conditions can be identified which might enable or constrain lecturers engagement with ICTs in Blended Learning environments?" Lecturer F identified the following conditions.

The lecturer articulates a few beliefs that enable his classroom environment. He suggests that when he started using Blackboard he selected a few tools - communication tool (e-mail and discussion), assessment tool and the assignment tool.

In terms of communication, the lecturer suggests that students participate and make use of the discussion tool, enabling better communication.

With respect to assessments, the LMS afforded him ease of giving assessments which allowed for quick feedback. In some instances when configured to do so, assessments are marked automatically by the system, also allowing for quick feedback.

In terms of assignments, the lecturer highlights the facts that students are able to submit online, enabling the lecturer to track and monitor student progress.

In all the cases the constraining factors are two-fold; they are those that are more on the teaching and learning side and on those that are administrative.

For Lecturer F lack of resources was one of his major challenges. The resources he might be referring to may include computers and capacity.

Another constraint is that students had little access to computers with Internet. The reason might be because they were going out to do field work, where there were no computers and also when they came back on campus computers were being fully utilised by other students.

Again the above findings suggest cultural and structural impediments in the form of network and computer maintenance challenges and students lacking computer skills. These factors constrain the use of the Blackboard tool effectively by both lecturers and students.

#### **6.7.6 Summary**

Lecturer F was very keen on assisting his students. He highlights how he extended his communication channels with students through the use of different media. His beliefs and values of creating an engaging environment for his students that will enable them to acquire lifelong skills, suggests that he is passionate about teaching. This may have been one of the enabling factors in him participating in the pilot project and using Blackboard.

#### **6.8 Chapter Summary**

This chapter presented each Lecturer's narration of their experience in the pilot project. At the end the cases offered different views of what underpinned their teaching and learning activities and what motivated each of them to be part of the pilot project, including

enablements and constraints which were similar in some instances. Activity Theory enabled analysis of the narrative and the breaking it into different components, but the meta theory used assisted in uncovering the underlying factors in each of the cases.

The next chapter will look at the relation or interaction that takes place between the subject and the context (rules, community, and division of labour) within the event of Blended Learning. Chapter Seven speaks to the level of the Actual and the Real using the themes identified in the six cases.

## 7 Analysis and Discussion

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### 7.1 Introduction

This chapter goes further in unpacking the subjects' historical, cultural and social environment recognised as influencing their experiences. The historical and cultural aspects in this study are ontologically positioned at the ontological level of the Real. Structures and mechanisms are described here using Archer's Social Realist Theory. These involve the structures such as policies and cultural and historical mechanisms including attitudes, values and beliefs (Wikgren, 2004).

Following from the findings in Chapter 6, this chapter describes the overall case study in order to generate a deeper understanding of the common enablements and constraints in the different sub-cases. The findings revealed common enabling and constraining conditions across all sub-cases. Using the findings of each case (Chapter Six), the data is collated here into one case study and the data is summarised in the diagrams that follow. Figure 7.1 shows the components of the individual activity systems, Figure 7.2 lists the main themes and sub-themes derived from the six cases in Chapter Six and Figure 7.3 provides a summary of the enablements and constraints.

The theoretical framework is used to discuss the findings and what impact they have on the case study as a whole. Figure 7.1 below provides a tabular representation of the variables of the event combining all six cases, which are unpacked using the C/SR framework.

Subject	Object	Sub-tools Used	Community	Division of Labour
Lecturer A	<ul style="list-style-type: none"> <li>- To monitor and track student progress</li> <li>- To cater for the different learning styles</li> </ul>	<ul style="list-style-type: none"> <li>- Assignment</li> <li>- Content</li> <li>- Mail</li> <li>- Tracking</li> </ul>	<ul style="list-style-type: none"> <li>- Lecturers</li> <li>- Students</li> <li>- e-Learning Unit</li> <li>- Trainer</li> <li>- ICT Technical staff</li> <li>- Management</li> <li>- University Community</li> </ul>	Lecturers <ul style="list-style-type: none"> <li>- Design course</li> <li>- Load materials</li> <li>- Support students</li> <li>- Mark assignments</li> <li>- Track progress</li> </ul>
Lecturer B	<ul style="list-style-type: none"> <li>- To ensure active learning and student participation in class</li> </ul>	<ul style="list-style-type: none"> <li>- Discussion forums</li> <li>- Communication (mail)</li> </ul>		Students <ul style="list-style-type: none"> <li>- Access Blackboard</li> <li>- Participate in online discussions</li> <li>- submit assignment</li> <li>- read and download materials</li> <li>- Check their grades</li> </ul>
Lecturer C	<ul style="list-style-type: none"> <li>- To better understand how students write for journaling purposes</li> </ul>	<ul style="list-style-type: none"> <li>- Discussion forums</li> </ul>		e-Learning unit <ul style="list-style-type: none"> <li>- Helpdesk</li> <li>- Create course</li> <li>- Assign logins</li> <li>- Support lecturers</li> <li>- Support for students</li> <li>- Support for lecturers</li> <li>- Coordinate the activities of the pilot project</li> </ul>
Lecturer D	<ul style="list-style-type: none"> <li>- To facilitate ICT and integrate through just-in-time learning</li> </ul>	<ul style="list-style-type: none"> <li>- Assignment</li> <li>- Content</li> <li>- E-mail</li> <li>- Chat</li> </ul>		Trainer <ul style="list-style-type: none"> <li>- Support lecturers</li> <li>- Support for students</li> </ul>
Lecturer E	<ul style="list-style-type: none"> <li>- To expose students to different learning technologies</li> </ul>	<ul style="list-style-type: none"> <li>- Assignment</li> <li>- Content</li> <li>- Mail</li> <li>- Assessment</li> <li>- Announcement</li> </ul>		ICT technical staff <ul style="list-style-type: none"> <li>- Maintain computers</li> <li>- Administer network</li> <li>- Maintain and support server-Support e-LU lecturers</li> </ul>
Lecturer F	<ul style="list-style-type: none"> <li>- To engage students on a journey of acquiring a lifelong skill that they have to apply on a daily basis</li> </ul>	<ul style="list-style-type: none"> <li>- Communication</li> <li>- Assessment</li> <li>- Assignment</li> </ul>		Management <ul style="list-style-type: none"> <li>- Support e-LU lecturers</li> <li>- Support ICT network administrators and e-LU Lecturers</li> </ul>

Figure 7.1 A representation of the components of the individual activity systems

- Subject:** The subjects in all these activity system are the lecturers.
- Object:** The object refers to outcomes that the lecturers wanted to achieve. In this case study, this was different for each of the sub-cases.
- Tools:** The main tool that the lecturers use to achieve this is the LMS. The **sub-tools** are also outlined in Figure 7.1
- Community:** The community is made up of the lecturers, students, e-Learning unit, trainer, ICT Technical staff etc.
- Division of Labour:** The division of labour is amongst the different members of the community.
- Rules, roles and responsibilities:** These pertain to the different community members. They also include the policy and procedures governing the teaching and learning environment at the University.

Figure 7.1 above summarises all the lecturers' activity systems as described in Chapter Six. The main aim of this chapter is to draw overall conclusions that have an impact on each of the cases. In order to do this, the findings are further summarised as per Figure 7.2 below. According to Archer (2000) social structures shape current contexts through social relationships and the social roles which carry their own causal 'powers' through the powers invested in their respective roles. Archer further argues that an individual cannot be reduced to their social role and that their perspective is not entirely influenced by society. Since historical elements also play a role in determining experiences the data is categorised into the themes that emerged through analysis of the findings.

## 7.2 At the Level of the Real

In analysing socio-cultural and socio-historical phenomena at the domain of the Real (underlying structures and mechanisms) throughout the cases, the data was categorised into themes. Two main themes emerged with related sub-themes:

1. **Teaching and Learning:**
  - a) Philosophical underpinnings; b) Blended environment; c) Communication
2. **Administrative:** d) Infrastructure

### 7.2.1 Teaching and Learning

**Philosophical underpinnings:** This is recognised as an important aspect in understanding the lecturer's views and beliefs about teaching and learning. The way in which they interact with their environment is impacted on by their beliefs about teaching and learning. The lecturers' philosophical underpinnings included: active learning, a belief that all students have the ability to succeed, constructivism, reflective practice and a belief that learning takes place despite obstacles.

**Blended environment:** The lecturers felt that they should be familiarised or trained in the use of any tool that is to be used in an e-Learning environment. All the lecturers felt that having been trained at the start of the pilot project was good and the training assisted them in using the tool. This is recognised as being an enabler helping lecturers to feel confident to try out the tool. The environment itself helps to determine the performance of the individual. Mc Veign (2009) suggests that more support and resources need to be provided to students commencing on Blended Learning initiatives and that this kind of support may take the form of additional basic computer skills as well as instruction in the online navigation of the tool being used.

**Communication:** During implementation communication is dependent on the lecturer and how he/she communicates with the students. Enhancing communication between lecturer and students was one of the objectives that lecturers were trying to address in the pilot project.

### 7.2.2 Administrative

**Infrastructure:** The main challenge the lecturers experienced in the pilot project were related to maintenance of computer facilities, Internet availability and slowness of the network.

The figure below summarises these themes according to each case offering a concise overview of the study:

THEMES	TEACHING AND LEARNING			ADMINISTRATIVE
SUB-THEMES	Philosophical underpinnings	Blended environment	Communication	Infrastructure
Lecturer A To cater for the different learning styles.	Active learning	Face-to-face classes supplemented by Blackboard.	Used Blackboard as an alternative form of communication.	Network problems reduced accessibility to materials put online. Few computers available for large classes of students, leading to students sharing systems. Where many computers are available, some are damaged.
Lecturer B To ensure active learning and student participation in class.	All students have the ability to succeed.	LMS and Face-to-face classes.		Having to teach a big class of students in the range of 60 – 200 students.
Lecturer C To assist students in writing their journal reflections on time.	Important for students to write and reflect.	LMS and face-to-face classes.	Overwhelming response from students for feedback by the lecturer.	Time limits during lecturers training constrained the lecturer.
Lecturer D To facilitate ICT Integration through just-in-time learning.	Constructivist teaching philosophy.  Reflective practice	LMS and face-to-face classes.	Ease of communication.  Quick response from students.	Poor accessibility to computer. Poor network connection. Time consuming as a result of poor or unsteady network connection. Submission of assignment is often delayed as a result of bad network connection.
Lecturer E To expose students to different learning technologies.	To expose students to different learning technologies.	LMS and face-to-face classes.	Easy to pass information to students.	Students have to practice in order to use the system effectively. It is time consuming.
Lecturer F To engage students on a journey of acquiring a lifelong skill that they have to apply on a daily basis.	Learning takes place despite all the obstacles.	LMS and face-to-face classes.	Improved communication with the students who are participating and making use of the discussion forum.	Students had little access to computers with Internet.

Figure 7.2 Summary of each case according to the themes and sub-themes

The above themes are further discussed according to the research questions in deducing the enablements and constraints:

“What are the lecturers’ beliefs about teaching and learning in relation to engagement with ICTs in Blended Learning environments?” and “What conditions can be identified which might enable or constrain lecturers engagement with ICTs in Blended Learning environments?”

### 7.3 Enablements

**Philosophical underpinnings:** The way in which lecturers interact with their environment is underpinned by their beliefs about teaching and learning. The articulation of philosophical underpinnings, which include their beliefs and values about teaching and learning, assists in determining whether these are in line with their use of Blackboard.

Analysis indicates that most of the lecturers’ philosophical beliefs about teaching and learning were a motivating factor in their decisions to participate in the pilot project. They went into the pilot project with an objective to achieve a particular goal. As demonstrated in above Figure 7.2 above, each of the participants had a different objective.

**Lecturer A’s** objective was to cater for the different learning styles of his students. He used different tools (content, assignment, e-mail and tracking tools) to support this objective. It becomes evident that the lecturer’s objective of catering for students’ different learning styles was in line with how he used Blackboard. The lecturer does mention that the students got to understand the system and how it works towards the end. He also mentions that support is a very important factor in using a new technology.

**Lecturer B’s** objective was to promote active learning and student participation in class. The lecturer used the e-mail and the discussion forum to achieve this. Each student needed to respond individually, which means they had to read the text under discussion before responding. This lecturer was trying to encourage a reading culture with her students. Unfortunately this participant dropped out in the middle of the pilot project due to other commitments, but she felt that the tool will be one of the things that will help to encourage continuing discussion between lecturers and students.

**Lecturer C’s** objective was to better understand students’ reading and writing processes. The lecturer used the discussion forum tool to initiate this process of reading and writing. Even though the students responded to the lecturer, the lecturer was still not sure whether journaling tasks was done on time and that adequate reading was done. While the students

submitted their work on time, it resulted in the lecturer feeling overwhelmed by the amount of feedback that was required. Another challenge faced by this lecturer centred on academic integrity as it was no possible to ascertain the authenticity of student submissions.

**Lecturer D's** objective was to facilitate ICT integration through just-in-time learning using a constructivist approach. This involved using the LMS to support her objective of trying to show her students a real-life scenario of what they were learning.

**Lecturer E's** objective was to expose students to different learning technologies, so that they have experience in the use of technologies for learning when they leave the University. The lecturer engaged students through assignment tasks, publishing content and communicating through Blackboard.

**Lecturer F's** objective was to engage students on a journey of acquiring a lifelong skill that they have to apply on a daily basis. Similar to the previous lecturer, this lecturer used tools such as assignment tool, e-mail and assessment to try and achieve his objective.

It was important for the pilot project to get lecturers who wanted to address specific challenges in their teaching and learning environment so as to determine if the Blended Learning approach addressed these challenges. The success of blended learning is however not only the result of simply integrating ICTs with the face-to-face approach (De-George-Walker & Keefe, 2010). In situations where student numbers are high, this type of resource provides greater opportunities to comprehend and extend the knowledge presented (Osguthorpe & Graham, 2003; Singh, 2010). Emerging technologies make it possible to teach and learn in new ways (Bozalek, Gachago, Alexander, Watters, Wood, Ivala, and Herrington, 2013). As noted in the literature, the challenges above are not unique to this study, Samarawickrema and Stacey (2007) mention a few constraints that hinder introducing technology in teaching and learning, which include time, heavy workloads, the need to reconfigure learning materials to suit new environments, the demand for research output, training, the need to master new work practices, professional exposure, intellectual property issues, policy issues, funding and staff attitudes, impacted on the uptake of web-based learning.

**Blended environment:** The lecturers were driven by their needs, beliefs and values in joining the pilot project, which was about exploring the use of Blackboard in a Blended Learning environment. In this case e-learning activities complemented, rather than replaced, traditional forms of learning (Mitchell & Forer, 2010). The lecturers were driven and motivated by their different philosophical understandings and the objectives that they were

trying to achieve. All of these needs, objectives, beliefs and values were enablements which provided them with agency to explore their teaching practice. The support given by the different community members also played a role in this endeavour.

**Communication:** Communication was an important aspect of the pilot project.

Communication between the lecturers and students had to be effective to enable the implementation to succeed. Similarly, effective communication between the community members (lecturers, e-Learning Unit, and ICT technical staff) was a precondition for the smooth running of the pilot project. Positive aspects of communication included the support given to the lecturers and the uptake of the email tool by the students as argued by. This is supported by Volery and Lord (2000) who argue that on-line communication offers a rich virtual workspace in which interactions occur among students either in real-time (synchronously) or through discussion boards (asynchronously). More negative aspects related to communication included the adverse effect of network failures, poor maintenance of computers and time constraints.

With regard to the role the LMS played in enabling communication between lecturer and student as compared to conventional settings, the findings are consistent across all six sub-cases.

## 7.4 Constraints

This section addresses the constraints under each category: **Teaching and learning** and **Administrative** with their respective sub-themes in the overall case study. Constraints were concentrated more towards availability and maintenance of resources. Very few constraints mentioned by the lecturers spoke to pedagogical issues. This implies that support in the form of resources needs to be motivated for.

### 7.4.1 Teaching and Learning

**Philosophical underpinnings and Blended Learning:** These are the grounding rationales of why and how the lecturers teach. Despite their participation in the pilot project being based on their teaching philosophies, the lecturers reported many constraining factors due to their unfamiliarity with the new approach of Blended Learning. The major constraints articulated by the lecturers focused on technical rather than philosophical aspects. The lecturer constraints focus on issues of time, one lecturer mentioned too much “overheads”. Another Lecturer commented on being overwhelmed by the submission rate, which resulted in her now taking more time to give feedback. This implied that the experience with blended learning encouraged greater engagement and interaction with the students. However, as Mc

Veigh (2009) also highlights in his study, participants felt overwhelmed at times indicating that it was more time consuming to incorporate technology.

#### **7.4.2 Administrative**

**Infrastructure:** The data indicate that students experienced many challenges pertaining to infrastructure and resources. Challenges ranged from access to computers, network failures, the slow speed of the Internet and non-functioning computers. According to Welker and Berardino (2005) technical difficulties are one of the most commonly reported frustrations with on-line education. The inability to use computers and access them may affect students' ability to engage in the online discussions (King, 2002).

#### **7.5 Summary**

Lecturer perceptions of such innovations are clearly influenced by the challenges they faced in their lecturing environments. The lecturers who participated in the pilot project were trying to address a specific need or challenge within their teaching environments e.g. communication, academic literacy, large classes and venues etc.

Time was identified as a constraint. Some lecturers seemed to be caught by surprise by the time required for planning, preparing of materials and publishing of content on the new system.

The following section summarises the constraints and enablements of each case. It is evident that the majority of constraints cut across all cases. As indicated by Baxter and Jack (2008), a case study approach with embedded units enables the researcher to explore the case "while considering the influence of the various contexts and associated attributes on the lecturer's experience. While there were unique enablers in each case, a number of them, for example 'ease of use', were common across all activity systems. In summary the findings in accordance with enablements and constraints are tabulated below.

Factors	Domain	Enablers and Constraints
Enabling factors	Structure	Availability of technology, ease of use, embeddedness in policies, rewards. Allowed for flexibility in access and submission of materials
	Culture	Technology afforded the some lecturers more time, supportive environment (eg through HOD, support team), part of professional practice & professional role, expectation by colleagues/ HOD /Management, Enabled ease in Communication and collaboration between lecturer and student, and student and student.
	Agency	Championess and motivation of participants, recognising value of technology to address certain teaching and learning challenges, previous positive experiences with technology, technology afforded students extra consultation and tutorial time
Constraining Factors	Structure	Initial learning curve both for lecturer and students, lack of support, perceived infrastructural challenges, bandwidth, network failures, maintenance of computers, lack of computers, time needed to set up course.
	Culture	Lack of reward systems, competing responsibilities, power dynamics to access support. Student training in Blackboard and student computer skills.
	Agency	Forced appointment by HOD, Duration of trainings, response time for feedback became a challenge,

Figure 7.3 Summary of enablers and constraints

This chapter has offered an overall insight into the lecturer perceptions of the use of an LMS within a Blended Learning environment in a traditional university context. From the analysis in Chapter Six, the data was summarised and categorised into themes to generate an overall understanding of the emergent features in the study.

## **8 Conclusion**

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### **8.1 Introduction**

This chapter concludes by outlining the following aspects of this study:

- Overview of the thesis
- Reflection on the research question
- Implications for support
- Recommendations for further research
- Conclusion

### **8.2 Overview of the thesis**

The aim of this study was to explore the experiences of lecturers in a Blended Learning environment in the context of a Higher Education Institution. The tool used for Blended Learning purposes was an LMS called Blackboard. The investigation was conducted through document analysis, interviews with lecturers and a follow-up questionnaire. Documents selected for analysis included strategic plans, teaching and learning policies. A case study methodology with six sub-cases was applied in this investigation. As a basis for this study, current literature was reviewed in the fields of ICT in Education, Virtual Learning spaces, online learning, e-Learning and Blended Learning.

Chapter One offers an introduction to the study, followed by Chapter Two which provides a context for the study. Chapter Three developed a conceptual framework while Chapter Four deals with the major theories underpinning and framing this study. Chapter Five discusses the research design and methodology used in the study whereas the data was presented in Chapter Six in terms of the framework outlined in Chapters Three, Four and Five. Chapter Seven discusses the findings, summarising all six cases. Finally, this chapter concludes with a summary, reflection on the research question, implications for support and recommendations for future research.

### **8.3 Reflection on the research question**

This study addressed the following research questions:

- What are the lecturers' beliefs about teaching and learning in relation to engagement with ICTs in Blended Learning environments?
- What conditions can be identified which might enable or constrain lecturers engagement with ICTs in Blended Learning environments?

### **8.3.1 Beliefs about teaching and learning**

The lecturers' beliefs about teaching and learning in relation to engagement with ICTs in Blended Learning environments centred on

1. the need to cater for the different learning styles;
2. promoting active learning and student participation in class;
3. assisting students with writing their journal reflections on time;
4. facilitating ICT integration through just-in-time learning;
5. exposing students to different learning technologies; and
6. engaging students on a journey of acquiring a lifelong skill that they have to apply on a daily basis.

### **8.3.2 Enabling and Constraining Conditions**

Blackboard offered an alternative for the lecturers in terms of communication (e.g. discussion forums), providing access to the course content and tracking student activities or progress, and conducting assessments. Communication in large classes has been a challenge that has been able to be addressed through the use of Blackboard.

Philosophical underpinnings enabled lecturers to achieve their goals and challenges that they were looking to address through the use of Blackboard.

Lecturers were also enabled by their competence in computer skills. One of the lecturers was a Blackboard Certified trainer. The use of the tool by both staff and students has improved their skills levels when it comes to engaging with computers.

The e-LU also played a role in motivating and enabling the lecturers in joining the pilot project.

The lecturers were also motivated by the functions the tool brought into their teaching and learning environments. The tool enabled their students 24 hour access to material and to

submit assignments. This suggests that lack of resources as a challenge was addressed in part by the use of the tool.

The ability to track student progress was one of the major enablers of the Blackboard system.

One of the constraining factors that were brought up by the lecturers was the computer literacy skills of students, which they felt students needed to be trained in first.

Administrative or infrastructural constraining factors which the lecturers did not have any control over included limited bandwidth, network failures and absence of maintenance of computers in laboratories.

Time was also a constraining factor as some lecturers become overwhelmed with both preparation and feedback. Time was also a constraint when the lecturers were undergoing training for the pilot project implementation. In some cases students did not have enough time to access computers as they were also doing fieldwork.

#### **8.4 Implications for support**

More support is needed by lecturers in their continuing endeavours to use ICTs in teaching and learning. Lecturers need to be familiarised or trained in the use of any tool that is to be used in an e-Learning environment.

From the onset of any project, communication with all the stakeholders needs to be clear.

While Blended Learning environments can be used to support teaching and learning environments in diverse settings, these environments need to be well supported. Resources to be used in new innovations need to be accessible and well maintained or else they may discourage users. Infrastructure is a very important aspect of any implementation of a new intervention or project. Resources of any nature that will impact on the project need to be made available; if already available they need to be in good condition and in working order. All necessary resources and/or equipment need to be put in place and need to be maintained continually for things to be implemented well.

When implementing new ICT interventions considerations of the environment need to be taken into account prior to initiation. Aspects such as the availability of resources, access, and network capacity are important considerations.

Future e-Learning pilot projects should be implemented over a longer period of time for lecturers to have more contact with the system and interaction with their students.

It is to be noted that these are structural issues that may have needed to have been addressed before the start of the pilot project by all stakeholders or community members. Mechanisms that could have been put in place to address the challenges might have included having a technician in the lab to assist with technical challenges and computers that are not working. Also, making lecturers in the pilot project aware beforehand that they will be working on a system with limited bandwidth and giving advance notice of network outages would allow lecturers to make alternative arrangements.

### **8.5 Recommendations for further research**

Further research could focus on interactions between the different parts of the community, e.g., lecturers, students, ICT technical staff, eLU, using Engeström's third generation Activity Theory or CHAT.

Follow-up research with these lecturers to investigate the impact of participation in the pilot project impacted on their teaching practice would be useful for informing training programmes.

Future research could explore student perceptions on Blended Learning environments and study the impact on student performance.

Further research could explore the relationship between lecturers' philosophical beliefs and their adoption of technology.

Further research is needed in order to understand the alignment of curriculum factors to the use and availability of technological resources for enhancing student performance in Blended Learning environments. Research could be conducted in a variety of settings to determine pedagogical influences more clearly, for example in terms of curriculum integration.

### **8.6 Conclusion**

The main purpose of this study was to explore experiences of lecturers working in Blended Learning environments in order to inform the support needs of such lecturers. This was a qualitative study, a case study exploring the experiences of six lecturers at a traditional university in the Eastern Cape of South Africa. A learning management system called

'Blackboard' was used to supplement face-to-face teaching and learning to form what is referred to as a Blended Learning environment. Data was generated through interviews, questionnaires and document analysis. Activity Theory was used to analyse the data, complemented by a Critical/Social Realist meta-framework. Important issues emerged for consideration in supporting lecturers in the continued use of the LMS for teaching and learning,

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## Appendices

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### Appendix 1: Interview Schedule

#### TITLE: EXPLORING LECTURER EXPERIENCES OF THE USE OF ICT IN BLENDED LEARNING: A CASE STUDY AT A SOUTH AFRICAN UNIVERSITY

Interviewee:.....

Faculty & Department:.....

Date:.....

Time:.....

Interview length:.....

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#### INSTRUCTIONS:

1. As discussed, please note the session will be recorded
  2. All information and data collected will be kept confidential and anonymous
  3. The session will take approximately one hour of your time, unless otherwise....
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#### Introduction

Thank you for taking part in the study. As said before in my communicate with you all information and data will be kept confidential and anonymous. The interview will be audio recorded per your permission. It will be later transcribed and given back to you to reread in case of any misinterpretations. Please note if there is any additional information that we may need from you after the interview, we would request an follow-up interview or questionnaire. If you do not have any further question, I would request that we start with the interview. The interview will asking questions in two areas, part 1 will be on your philosophical beliefs about teaching and learning and part 2 will be about your experiences in the pilot.

#### **Question 1**

‘What is your teaching and learning philosophy’ or if I can rephrase that ‘what are your beliefs about teaching and learning?’

#### **Question 2**

What was your experience of the pilot in relation to enablers or constraints when it came to your engagement with ICTs in Blended Learning environments?

#### Conclusion

Thank you very much, do you have any comments about the interview or about the research, or is there anything that you think we’ve missed. As said before I will send you the transcript of the interview to have a look at.

**Thank you again for your time and participation.**

