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# TOWARDS A MORE HOLISTIC UNDERSTANDING OF LECTURERS' PERSPECTIVES OF LEARNING MANAGEMENT SYSTEMS AT A SOUTH AFRICAN UNIVERSITY

***A research report submitted by***

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***Student Number: 1278405***

In partial fulfilment of the requirements for the

Degree of Masters of Information Systems

***Supervisor:***
***Suzanne Sackstein***

***Date: 15 August 2018***

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I have read and understood the Senate policy on plagiarism and am aware that plagiarism is the intentional or unintentional "failure to acknowledge the ideas or writing of another" or "presentation of the ideas or writing of another as one's own". In this context "others" means any other person including a student, academic, professional, published author or another resource such as the internet. Failing to acknowledge the use of ideas of others constitutes a serious breach of the values and conventions of the academic innovativeness.

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**Date:** ***15 August*** **2018**

## Declaration

I, Tsakani Violet Ndobe (Student number: 1278405) declare that this is my independent work and is, original, except as acknowledged in the text.

This research report is submitted in partial fulfilment of the requirements for the degree of Master of Commerce (Information Systems) coursework in the University of the Witwatersrand (Wits), Johannesburg.

It has not been submitted before for any degree or examination in this or another university.

---

Tsakani Violet Ndobe

Signed at ……on this ……day of ……2018

## Dedication

I dedicate this research report to my mother, Mhlaba Hlongwane-Bila, and my late father, Samuel Mkhacani Ringeta Bila. I know my father would be proud of his last born baby-girl achieving this qualification, just as my supportive mother is. The wisdom my mother has is amazing, and I still look up to her. My siblings and I call her '*Madam President'*. I thank you, mama, for your unconditional prayers and support for my studies. When it got tough, you always had words to encourage me never to give up. I love you.

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To God be the glory for this achievement. This journey was not an easy one, but you kept me going all the way. Thank you, Lord.

To my husband, Alson, '*honey-for-life'*, thank you for your generous support and love throughout this journey. I saw you encouraging me to do this Master's degree and even when I had to come home late in the evenings from attending evening-classes, you understood. I am blessed to have you in my life. I love you.

My daughter, Pfumela, it was a tough decision to start this journey when you were only two years old. Seeing you motivated me to finish that which I had started so that we can spend time together strengthening our mother-and-daughter relationship.

My sister, Agnes Tihani Bila, I am short of words. You never complained even one day when I would leave the house early in the morning going to work and come back late in the evening after 10pm. You took good care of my baby and the house. We never went to bed with takeaways because you cooked for us. Thank you very much.

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To Wits IS academic staff, thank you for giving me the opportunity to acquire more knowledge and skills. I will share the knowledge and skills with my SMU community.

Lastly, to my supervisor, Suzanne Sackstein, thank you very much. There were times I could not manage to put across your instructions, but you were patient and motherly. From your insights and guidelines, I am confident that my academic life has just begun. Together we make a great team.

## Abstract

The integration of technology into an educational context is advocated by many as a means of preparing students to cope with the current information society, as well as enhance pedagogical practices and knowledge transmission. One way to integrate technology within educational contexts is through Learning Management Systems (LMS). LMS integration approaches include learning material repositories, discussion boards, blogs, messaging, and chat rooms. While many research studies have focused on the role that students play in the successful use of the LMS, use of LMS by lecturers and the potential benefits that may be accrued as a result of making use of the LMS, have not yet been fully explored. The apparent limited use of LMS in Sefako Makgatho Health Sciences University (SMU) in South Africa provided the impetus for this qualitative case study in order to develop an in-depth, holistic understanding of LMS use and non-use by SMU lecturers. Data was collected via semi-structured interviews with SMU lecturers. The Unified Theory of Acceptance and Use of Technology (UTAUT) framework was used as a lens for the data analysis. Findings indicate that SMU lecturers' decisions to make use or not to make use of the LMS are being influenced by performance benefits (PE) such as communication, assessment, content upload, anytime-anywhere teaching and learning, management of large classes, student management of learning and lecture delivery. In relation to effort (EE), findings suggest that to make use of LMS initial training, continual practice, organisational support, and ease-of-use are essential. Furthermore, social influences (SI) appear to be important with colleagues, the organisation as well as students playing a role in decision around LMS use. Findings for facilitating conditions (FC) indicate that conditions of training need to be improved, organisational support must be more available and the technology infrastructure necessary to use the LMS must be sufficient. Student resistance, lack of refresher courses, extra work required to make effective use of the LMS, non-standardisation of LMS usage, limited infrastructure, and stable internet access were identified as limitations hindering the effective use of LMS.

**Keywords**: Blackboard, Content Management System (CMS), e-learning, Learning Content Management System (LCMS), pedagogical practices, Social Networking Sites (SNS), teaching and learning, UTAUT

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## Definition of terms

| Term | Definition |
|---|---|
| **e-Learning** | E-Learning makes use of electronic technologies to train, communicate, collaborate and transfer knowledge to students via the internet or private networks (Al-Busaidi 2009). It offers an innovative way of delivering instruction through a wide-spread environment, and it incorporates the internet-based and computer-based learning, which consists of components of online learning (Liu 2013). |
| **LMS** | Learning Management Systems (LMS) is a web-based technology which assists lecturers in the planning, distribution, and evaluation of learning (Asiri, Mahmud, Abu-Bakar & Ayub 2012). In addition, this system can also involve tracking, managing learning, and administrating the system in a learning environment (Adzharuddin & Ling 2013). |
| **CMS** | Content Management System (CMS) "is a software system used to store course materials online" (Liu 2013, p.12). Lecturers mainly use CMS for the administration of the online teaching and management of the course, which lessens their workload (Watson & Watson 2007). |
| **LCMS** | Learning Content Management System (LCMS) is "an environment where developers can create, store, reuse, manage and deliver learning content from a central object repository, usually a database" (Ninoriya, Chawan & Meshram 2011, p.646). LCMS is generally used for managing of learning content (Mudaly 2012). |
| **SNS** | Social Networking Sites (SNSs) are pedagogical intermediaries which students use to identify the people and the resources relevant for problem-solving, to create for themselves a social learning network (Bagarukayo & Kalema 2015). SNSs have a potential to temporarily create an online community where it is not conducive for students to meet face-to-face with their lecturers (Rambe 2012). |
| **Blackboard** | Blackboard is a specific implementation of an LMS provided by Blackboard Inc. to enable lecturers to provide information to students which they can learn in their own time and space (Bradford, Porciello, Balkon & Backus 2007). Lecturers in educational institutions of higher learning use Blackboard to communicate with the students and assess their performance (Marchewka, Liu & Kostiwa 2007). |

## Abbreviations and acronyms

| | |
|---|---|
| ADMT | Administration Tool |
| ASMNT | Assessment |
| AT | Activity Theory |
| CAI | Computer-Aided Instruction |
| CHE | Council on Higher Education |
| CMS | Content Management System |
| CRU | Current Reported Use |
| CSL | Communication between Student and Lecturer |
| EE | Effort Expectancy |
| FC | Facilitating Conditions |
| FEU | Future Envisaged Use |
| ICT | Information and Communication Technology |
| IEC | Interactive Educational Content |
| LCMS | Learning Content Management System |
| LMS | Learning Management System |
| OCC | Online Content Creation |
| OCS | Online Content Storage |
| PC | Peer Communication |
| PE | Performance Expectancy |
| SC | Shared Communities |
| SHCS | School of Health Care Sciences |
| SI | Social Influence |
| SM | School of Medicine |
| SMU | Sefako Makgatho Health Sciences University |
| SNS | Social Networking Sites |
| SST | School of Science & Technology |
| ST | Student Tracking |
| TAM | Technology Acceptance Model |
| TPB | Theory of Planned Behaviour |
| TTF | Task-Technology Fit |
| UP | University of Pretoria |
| UTAUT | Unified Theory of Acceptance and Use of Technology |
| WITS | University of the Witwatersrand |

# CHAPTER 1: INTRODUCTION

This research report aims to provide a holistic understanding of lecturers' perspectives of Learning Management Systems (LMS) at a South African university. In this first chapter, the researcher presents the background of the study, followed by the personal rationale, problem statement, purpose statement and the objectives. The chapter also outlines the research questions and the assumptions of the study. Finally, delimitations of the study are presented.

## 1.1 Background to the study

Technology is increasingly being used in all facets of society to process, store, and transform information about day-to-day activities (Liu & Buck 2007). Within the education sector, technology use within pedagogical practices is also prolific (Govender & Govender 2014). Bagarukayo and Kalema (2015) claim that the integration of technology in pedagogical practices leads to the transformation from classroom-bound and formal teaching to one of e-learning, in which the setup is more easily accessible and informal for both educators and students.

The inclusion of e-learning in teaching and learning is being driven by a number of factors. Firstly, students are entering universities with an ability to make use of technology as they are ubiquitously making use of it in their daily activities (Govender & Govender 2014). In this regard, students may not need to be trained on using technology as part of their educational system but are rather encouraged to expand their use to educational pursuits (Bharuthram & Kies 2012). Secondly, Mudaly (2012) claims, the South African government is initiating the use of technology in high schools, with the purpose of preparing students for tertiary education. Webbstock and Fisher (2016) claim that the government has a direct influence on the traditional universities regarding regulations and funding. As a result, these institutions may be able to access financial support from the government to improve their teaching and learning, especially with regard to the integration of technology in order to improve pedagogical practices. Finally, the escalating student numbers vis-à-vis limited physical space warrants the use of e-learning tools such as an LMS, because making use of LMS can potentially diminish the need for the presence of physical bodies of students in a classroom (Mudaly 2012).

Ways in which integration of technology is being used in order to facilitate learning outside the classroom include giving students access to PowerPoint slides, videos, lecture notes, and internet hyperlinks (Bradford, Porciello, Balkon & Backus 2007) so that students can continue learning at their own pace, time, and in their own spaces. An LMS which provide students with

the ability of anytime-anywhere learning is a software application intended for the administration, documentation, tracking, reporting, and delivery of educational or training programmes (Mlitwa 2006). Use of LMSs in educational institutions is believed to augment face-to-face teaching where it still occurs and enables online and distance learning in other instances, thereby removing learning barriers and also ensuring that learning is not confined to time and place (Mudaly 2012). Also, Watson and Watson (2007) claim that an LMS can track an individual student's learning progress and provide necessary learning content along with enabling interaction between lecturers and students (Liu 2013). While LMSs have been used in teaching and learning for the last two decades at least (Blackboard Learn 1997), Billman (2014) claims that lecturers are not yet utilising the LMS to its full potential in order to realise its benefits as well as meet the changing educational needs of students.

For the LMS to be considered successful, Al-Busaidi (2009) and Phahlane and Kekwaletswe (2012) argue that both students and lecturers should be able to access the resources of learning irrespective of distance or time. However, Jaffer, Ng'ambi, and Czerniewicz (2007) claim that within the South African tertiary educational context, effective student use of the LMS is challenged by the diversity of students due to schooling background, academic preparedness, and language. Jaffer et al. (2007) claim that the educational background of students entering the tertiary institutions seems to have no relationship to the abilities and understanding required to further their studies, and therefore the school-leaving certificate "is currently viewed as an inadequate measure of a student's potential for success in higher education" (p.134). English language proficiency is another challenge (Czerniewicz & Brown 2005), as English is the most commonly used language of instruction within tertiary educational institutions. However, for the majority of the students, English is not their first language, and many are thus required to learn and be assessed in their second languages. Also, LMSs were developed and perpetuated in English speaking countries such as the USA and New Zealand (among others) even before the year 2000 (Blackboard Learn 1997; Parr & Fung 2006; Watson & Watson 2007). It has reached its current form after evolving from forms that were called computer-assisted learning, computer-assisted instruction, computer-managed instruction, and integrated learning systems. Thus, LMSs are also in English, and the mismatch between languages in the case of South African students and the LMS may impact the use and effectiveness of the LMS by students (Czerniewicz & Brown 2005).

While students are essential to the successful use of the LMS, it is the lecturers that play a significant role with their attitude affecting the perceptions of students regarding the use of LMS, either negatively or positively (Asiri, Mahmud, Abu-Bakar, & Ayub 2012; Liang & Wei 2004). Bagarukayo and Kalema (2015) suggest that for the LMS to work efficiently, the

lecturers should be involved throughout the lifecycle of the LMS from development through to implementation. Furthermore, Govender and Govender (2014) claim that challenges faced by lecturers, while using the LMS for teaching and learning, may also impact the successful implementation. One such challenge, according to Govender and Govender (2014) and Ngandu (2015), is that training lecturers on LMS usage usually involves spending more time learning the technology instead of preparing the course material, as lecturers need to be computer literate for the success of the information and communication technology (ICT) integration. Bagarukayo and Kalema (2015) also argue that training for technology literacy is not sufficient, but lecturers rather need to be trained in integrating technology into their lecturing and classroom practices.

## 1.2 Personal rationale

Sefako Makgatho Health Sciences University (SMU), located in the Ga-Rankuwa Township in Pretoria, South Africa, is a newly-established university inside a campus of one of the previously-disadvantaged educational institutions. The university started operating by itself from January 2015 after the Medunsa Campus of the University of Limpopo was uncoupled from the university and incorporated into SMU. The university has five schools with 206 permanent academic employees. The current number of students enrolled in the university is 5799, with intentions to grow the numbers yearly (SMU Marketing Department 2017). The staff to student ratio at SMU is 1:28, which is above the national benchmark of 1:20 (Webbstock & Fisher 2016). In order to "create an environment that supports innovation and harnesses the power of the new technologies to address the healthcare needs of the community" (SMU Marketing Department 2017, p.6) and accommodate the high staff to student ratio the integration of technology into pedagogical practices at SMU is being encouraged and supported by university management.

In order to actualise this mission statement, SMU has made a substantial investment in the use of LMS, specifically, Blackboard. The LMS, Blackboard was inherited from the University of Limpopo in 2015 when SMU was established. As at 2017, about 1932 of the students out of the enrolled 5799 (33%) were using the system. While SMU has not yet mandated the use of the LMS to lecturers, its use and integration are strongly encouraged (SMU Marketing Department 2016). As a lecturer responsible for undergraduate students, specifically first years, teaching computer fundamentals and web design, the use of LMS has not been an easy endeavour. Despite being trained on using the LMS, to date, the researcher has been unsuccessful in integrating the LMS into her teaching and learning. Anecdotally, the researcher believes that lack of time to learn how to use and integrate the LMS into the teaching efficiently, absence of uptake by peers and SMU's policy of non-mandatory use with

neither associated consequences for lack of utilisation nor benefits for those making use of the system have contributed to the high level of lecturers choosing not to make use of the LMS.

Within the SMU context, it appears that the majority of staff and lecturers are not using the LMS. In order to provide a more holistic understanding of why lecturers are choosing to make use or not make use of the LMS, this study employs a qualitative research method in order to explore the underlying reasons for such choices.

### 1.3 Problem statement

The use of technology in the tertiary institutions in South Africa, claims Mlitwa (2006) contributes to the development of an information society in which the pedagogical practices and knowledge are being enhanced. However, in the most recent Council on Higher Education (CHE) report, Webbstock and Fisher (2016) state that South African tertiary education institutions face a number of challenges that are resulting in the LMS not being fully utilised by lecturers. These challenges, according to Webbstock and Fisher (2016), include a "lack of digital literacy among academic staff; the relative lack of rewards for innovation in teaching and learning; and the need to develop efficient and pedagogically sophisticated models of online courses" (p.17) and the lack of penalties for not making use of LMS. As large investments of time and money have been made by universities to integrate the LMS in the classroom, the perceptions that the lecturers have towards the use or non-use of the LMS in their teaching and learning practices may provide a means to better understand lecturers' choices in relation to using or not using the LMS in their teaching.

### 1.4 Purpose statement and objectives

The purpose of the study is to provide a more in-depth understanding of the underlying reasons that may hinder or motivate SMU lecturers in relation to the use of the LMS. In order to understand whether perceptions of lecturers currently using the LMS differ from lecturers not currently making use of the LMS, the study investigates both Current Reported Use (CRU) and Future Envisaged Use (FEU).

In order to achieve the purpose of this study, the following objectives have been identified:

- To identify lecturers' underlying reasons in relation to the use or non-use of LMS;
- To understand lecturer's reported use of the LMS;
- To identify the challenges and associated reasons hindering lecturers' use of LMS;
- To identify the motivating factors and associated reasons influencing lecturers to make use of the LMS.

## 1.5 Research questions

The primary research question of this study is, 'w*hat are underlying reasons for SMU lecturers' decisions on whether or not to make use of the LMS?'*.

In order to answer the primary question, the following sub-questions have been formulated:

1. What is the regular practice of SMU lecturers in terms of LMS use?
2. What are SMU lecturers' perceptions regarding the benefits to be gained by making use of the LMS?
3. What are SMU lecturers' reported challenges or hindrances associated with making use of the LMS?
4. What are the motivating factors that SMU lecturers perceive influence the use of the LMS?

## 1.6 Assumptions

The primary assumption for this study has been that lecturers would accurately report on their use or non-use of the LMS and the associated underlying reasons.

## 1.7 Delimitations of the study

Although many factors may impact lecturers' teaching and learning in the university, this study is solely focused on the utilisation and non-utilisation of the LMS by lecturers at SMU, in order to gain a more holistic understanding of lecturer's perspectives. In addition, as the use of the LMS, Blackboard, is not mandatory, and thus the study collected data from lecturers that do use the LMS along with those that do not utilise the LMS.

## 1.8 Summary of the chapter and research report outline

This chapter introduced the study by providing an overview of the use of technology in the education sector. Next, a discussion on how the use of technology has evolved through the use of LMS to augment the teaching and learning practices was presented. The rationale, problem statement, and purpose statement were then briefly discussed leading to the objectives being identified. The main research question and sub-questions were then presented together with the assumptions and the delimitations of the study.

The rest of the study is structured as follows:

**Chapter 2** reviews the relevant literature pertaining to the changes that have emerged on account of the introduction of ICT within a tertiary education context. The chapter, furthermore, identifies the benefits of implementing and using LMS alongside the factors influencing

effective use of LMS by lecturers. Similarly, the chapter discusses the framework that underpinned the study, a modified UTAUT framework as a description of language.

**Chapter 3** outlines the research methodology used in this study. The methodology includes a research paradigm, design, population, data collection methods, and data analysis. The chapter further explains the evaluation of methods and ethical issues considered during the study.

**Chapter 4** presents the research findings and analysis of the study. The chapter outlines the process taken for data analysis, in which content analysis was used. Also, presented is the summarised table on the participants who were interviewed and data transcribed verbatim. The chosen conceptual framework was used to categorise data from the interviews.

**Chapter 5** discusses the research key findings from chapter four concerning the framework underpinning the study, UTAUT, and the literature review. Also included in this chapter, is new literature not covered in chapter 2 and supporting the new findings that have emerged from the research study.

**Chapter 6** concludes the research study and provides a holistic overview of the research findings, by answering the sub-questions and finally the main research question. The chapter also presents the limitations of the study and contributions to academia and the practitioner sector. To end the research, the researcher presents the recommendations and future research in this area and the closing remarks.

# CHAPTER 2: LITERATURE REVIEW

To understand the context in which this study has been conceptualised, it is necessary first to explore the relevant literature pertaining to the changes that have transpired as a result of the introduction of information and technology (ICT) within a tertiary educational context. Next, learning and its progression to e-learning are presented along with a review of e-learning within the South African context. Then a description of LMS, CMS, LCMS, and SNS is provided in order to provide a shared understanding of their use. Then in order to position the LMS in context of the other systems, a comparison of the similarities and differences is shown. Next, the benefits of LMS use are explored. Lastly, the factors influencing the efficient use of LMS by lecturers are also presented.

## 2.1 Change of ICT use in tertiary education

According to the 2016 CHE report, during 1994 to 1998, the use of technology within higher education was mainly in the form of computer-aided instruction (CAI), with drill and practice being the most common. From 1999 to 2003, the focus shifted from the use of ICT to trying to understand how it could improve the teaching and learning which was a conscious effort to enhance quality in the South African higher education (Webbstock & Fisher 2016). Jaffer, Ng'ambi and Czerniewicz (2007) claim that in order to meet the demand for social transformation and skills in the country, institutions of higher learning in South Africa also started introducing ICT into their pedagogical practices. From 2009 to 2013, students gained access to mobile learning, social media and 'bring your own devices' (Webbstock & Fisher 2016). It was during this period that the LMS was introduced.

Attuquayefio and Addo (2014) state that integration of ICT within the educational system has brought about significant change (Webbstock & Fisher 2016). One change, according to Mudaly (2012), is the manner in which lecturers facilitate learning as they no longer depend on having a classroom for learning to take place. Instead, learning continues even outside a classroom.

According to Webbstock and Fisher (2016), the introduction of ICT and its pervasive growth has changed how pedagogical practices are undertaken in tertiary institutions from traditional classroom learning towards that of more technologically-integrated learning, i.e., e-learning. Also, ICT and the subsequent e-learning also enable "information management tasks in teaching, research, and administrative systems" (Bagarukayo & Kalema 2015, p.168).

However, while the change due to ICT use makes learning exciting, there are many challenges associated with its integration and use. One of the main challenges faced in South Africa in

relation to ICT integration is the limited provision of appropriate infrastructure and support to all users (Bharuthram & Kies 2012).

## 2.2 Learning and its progression to e-learning

Learning is delivered daily in different formats to unlimited recipients with the intention of transferring skills and knowledge to students in order to prepare them for life (Wang & Ramiller 2009). According to Bagarukayo and Kalema (2015), learning is a "process where learners' interaction with materials, peers, and instructors result in a change in behavior and thinking" (p.1). Similarly, Khoza (2015) defines learning as "an act of developing knowledge, values/attitudes and/or skills that lead to the achievement of intended learning outcomes or addresses other life-related challenges" (p.123). Essentially, where learning takes place, an individual is empowered with skills and knowledge to be applied in day-to-day living. Ways of improving learning include e-learning, which is a modern way of incorporating learning technology into pedagogical practices (Bruwer 2014).

In a traditional educational system, students meet educators in a classroom at a particular time. However, where technology is integrated into the educational context, i.e., e-learning, boundaries of time and venue (Maina & Nzuki 2015), do not exist and thus learning has the potential to take place anytime-anywhere (Kleinveldt, Schutte & Stilwell 2016). According to Bagarukayo and Kalema (2015), e-learning results not only in an improved quality of learning but also encourages a more learner-centred approach with an increased focus on active learning. E-learning "promotes active participation and self-regulated learning, which enables construction, learning-pace adjustment and gives desired learning outcomes" (Bagarukayo & Kalema 2015, p.169). However, Kotoua, Ilkan, and Kilic (2015) argue that e-learning does not change the traditional learning environment but rather augments it by enabling lecturers to provide additional learning resources and information to students, as well as providing more student support using several technologies. According to Mlitwa (2006), 'the virtual campus' is used to enhance both distance and classroom learning processes where technology is an integral part of the teaching, learning, and assessment process.

Notwithstanding the benefits reported in the literature on e-learning, challenges in relation to e-learning are evident for both students and lecturers. For example, Bharuthram and Kies (2012) found that students coming from disadvantaged school backgrounds seem to struggle to make use of e-learning tools compared to those coming from an advantaged school background because the students from destitute backgrounds usually do not have exposure to these tools as they cannot afford them (Chibaro 2015). Although the integration of ICT is beneficial as it encourages students' participation, lecturers are cautioned when adopting e-

learning that student would need more support (Bharuthram & Kies 2012) as, without guidance and assistance, many students may struggle to use the e-learning tools in their learning. Lwoga (2012) claims that the quality of the lecturers, the e-learning system and the quality of information dispensed via e-learning seem to motivate the students' e-learning use. As this study is situated within a South African context, it is essential to understand the specifics of e-learning within this context.

### 2.3 E-learning in South African context

The adoption of e-learning, states Lwoga (2014), is pervasive in the education sector, specifically in African universities. Bagarukayo and Kalema (2015) argue that the drive towards e-learning in South Africa is in response to the National Plan for Higher Education which aims to "develop an information society, through technology use, for knowledge advancement to improve education and support the new school system" (p.169). Bagarukayo and Kalema (2015) and Jaffer et al. (2007) argue that e-learning in the South African context could potentially play a vital strategic role in addressing teaching and learning concerns about diversity among the student population. In addition, with an ever-increasing number of South African students coming to universities to further their studies, e-learning provides the means to handle the large numbers both inside and outside the classroom (Govender & Govender 2014).

However, Bagarukayo and Kalema (2015) argue that within South African universities there appears to be no standard approach to e-learning and thus the full potential of e-learning may not be realised. Without these standards, it may be challenging to measure maturity because there would be different opinions about e-learning and applicability in the tertiary educational context (Mtebe 2015).

While the use of e-learning has the potential to facilitate the management of diverse students, Bharuthram and Kies (2012) argue that the diversity of students may pose difficulties for e-learning as students who have not had prior ICT exposure will need to spend time learning how to make use of the e-learning tool, thus compromising actual learning content provided. Jaffer et al. (2007) and Czerniewicz and Brown (2005) argue that prior and current access, ICT skill levels, as well as the mismatch between languages, may impact the use and effectiveness of e-learning by students.

The adoption of e-learning seems to have been widely investigated with a focus more on students rather than lecturers. However, the lecturer's role is of vital importance in the successful adoption of e-learning (Asiri et al. 2012). Limitations of effective use of e-learning according to Unwin, Kleessen, Hollow, Williams, Oloo, Alwala, Mutimucuio, Eduardo and

Muianga (2010) may result from the low level of lecturers' training; lecturers' discomfort with the e-learning technology (Govender & Govender 2014) and insufficient or non-available technical infrastructure needed to facilitate the use of e-learning (Asiri et al. 2012).

Finally, e-learning practices come with high costs, and within a South African context, there may be a need for budget allocations to take care of the initiative. Otherwise, the lack of funding may hamper the success of e-learning implementations (Bagarukayo & Kalema 2015). Though these challenges exist, successful use of e-learning, specifically LMS, has proved to be beneficial in some local universities such as Cape Town, KwaZulu-Natal, Pretoria, and Stellenbosch, among others (Bagarukayo & Kalema 2015).

E-learning tools differ widely and include the use of the Blackberry platform, blogs, Facebook, gadgets, internet, iPads, iPods, mobile phones, Wikis, YouTube, Twitter, and WhatsApp (Gouws 2014; Gouws 2015). The main challenge with these particular e-learning tools is that in their original form, they are not standardised as formal LMS supported by educational institutions. The next section discusses the area of LMSs in relation to e-learning.

## 2.4 Learning Management Systems

Various ICT educational tools have been introduced to facilitate e-learning such as CMS, LCMS, SNS, and LMS. In order to understand what each of these ICT educational tools offer, how they are similar, and how they differ, each tool is described below.

### 2.4.1 Content Management System

A CMS is a "software system used to store course materials online" (Liu 2013, p.12). The system is designed primarily as an administration tool, to deliver and upload content, and provides a repository of educational resources which can be accessed by students (Ninoriya, Chawan & Meshram 2011). It is used mainly for online learning, learning support, facilitating communication between the students and their lecturers, connecting students with respective courses and tracking their performance (Watson & Watson 2007). It also has functions that store students' submissions of assignments and corresponding scores and can connect students with their peers (Liu 2013).

### 2.4.2 Learning Content Management System

The inclusion of the online content creation function to the CMS leads to a more advanced LCMS, as stated by Mlitwa (2006) and Ssekakubo, Suleman and Marsden (2012). An LCMS is defined as "an environment where developers can create, store, reuse, manage and deliver learning content from a central object repository, usually a database" (Ninoriya et al. 2011, p.646). The system is mainly used for managing learning content (Mudaly 2012). By doing so,

LCMS enables content creation to be more efficient and also assists organisations to manage the people responsible for the development of the content (Watson & Watson 2007).

### 2.4.3 Social Networking Sites

SNSs are a form of a social media and have been used since the 1990s, with each SNS established for a specific group of people to address a specific need, such as interactive, informational, educative and entertainment (1stWebDesigner 2017). SNS actively facilitate relationships between collaborating students and lecturers (Aharony 2013; Bagarukayo & Kalema 2015; Rambe 2012) as well as being able to create communities based on users' shared interests irrespective of the association or area of location (Rambe 2012). According to Zafar (2016), the connections that users of SNS make with other users of online services differ significantly from each other regarding types and classifications. Thus, SNSs are an additional e-learning source that expands possibilities of learning for those students who either lack other tools or who prefer using such a tool.

SNS also enable "participation and informal knowledge sharing" thus "making them ideal spaces for mediated intellectual engagement" (Rambe 2012, p.1333). According to Jeong (2015), SNS provides immediate feedback through the use of comments on submissions, which encourages students to rework the concept so that both parties online can comprehend the content. Bagarukayo and Kalema (2015) claim that this enables lifelong learning to take place.

### 2.4.4 Learning Management System

According to Watson and Watson (2007), an LMS is a "framework that handles all features of learning practice, and these features include course registration and administration, skills gap analysis, tracking and reporting" (p.28). The LMS uses instructional content and interactive educational services in order to facilitate e-learning (Miltwa 2006). Also, the lecturers can monitor the students' participation and their performance, as well as interact with an individual student based on his/her learning outcomes (Adzharuddin & Ling 2013). The interaction can be either "synchronously or asynchronously, allowing the creation of different strategies to encourage dialogue and active participation of students" (de Oliveira, Cunha & Nakayamet 2016, p.160). It is evident from the definition that the LMS integrates all the features of CMS, LCMS, and SNS. It seems that the term LMS can, therefore, be used as an umbrella term for the e-learning management tools.

## 2.5 Overview of LMS on CMS, LCMS, and SNS

According to Ninoriya et al. (2011), the functions offered by CMS, LCMS, SNS and LMS and the differentiators between them are increasingly becoming less defined as these technologies

continue to evolve. To provide a comparison of these e-learning systems a table has been constructed in which the functionalities of each has been listed.

| **Functions** | **CMS** | **LCMS** | **SNS** | **LMS** |
|---|---|---|---|---|
| Online content storage | X | X | | X |
| Administration tool | X | X | | X |
| Student tracking | X | X | | X |
| Communication between students and lecturers | X | X | X | X |
| Peer communication | X | X | X | X |
| Online content creation | | X | | X |
| Shared communities | | | X | X |
| Interactive educational content | | | X | X |
| Assessment | X | X | | X |

*Table 1: Functionalities of e-learning systems* - adapted from (Mlitwa 2006; Ssekakubo et al. 2012) and also from the descriptions of LMS on CMS, LCMS, and SNS sections

The shared features of CMS, LCMS, and LMS are that they are administration tools used in communication between students, lecturers and peers, assessments, and student tracking (Watson & Watson 2007). The difference between CMS and LMS is the target users, as users of LMS are students, while users of the CMS are the lecturers or the instructional designers or developers (Ninoriya et al. 2011). Although LCMS and LMS are similar in function, they have a different focus: “the LCMS allows for the creation and delivery of learning content while LMS manages the learning process as a whole, integrating the LCMS within it” (Watson & Watson 2007, p.30). In relation to the SNS, it is mainly used as a social media platform, and its functionalities, such as shared communities and interactive educational content (immediate feedback), do not replace an LMS but can rather be integrated with LMS (Bagarukayo & Kalema 2015). SNS and CMS share the features of communication between the lecturers, the students, and peers.

It, therefore, seems that all the educational features of CMS, LCMS, and SNS are found in an LMS. Hence for this study, the term ‘LMS’ is used as an umbrella term to relate to all e-learning systems at SMU.

## 2.6 Benefits of implementing and using LMS

The use of LMS is believed to provide multiple benefits to both students and lecturers: learning and teaching can take place anytime-anywhere (Adzharuddin & Ling 2013); improvement of problem-solving and decision-making skills for the users in educational practices, mainly the lecturers (Bagarukayo & Kalema 2015); saving time in relation to marking and electronic

capturing of results (Singh & de Villiers n.d.); easier management of large classes (Singh & de Villiers n.d.); increased variety of assessment methods (Singh & de Villiers n.d.); a more student-centred approach to teaching (Malm & Defranco 2012); a better chance of meeting the needs of increasing number of diverse students (Govender & Govender 2014); the option of different tools to enable learning (Liu 2013); more content sharing between students and lecturers (McGill, Klobas & Renzi 2008); and a better individual learning experience for students (Liu 2013).

### 2.6.1 Enables learning and teaching to take place anytime-anywhere

South African universities are increasingly adopting LMS (Mlitwa 2006) in order to reap the benefits of access to learning content and management by both students and lecturers from anywhere at any time (Adzharuddin & Ling 2013). Examples of specific implementations of LMS are Blackboard, Angel, and WebCT (Malm & Defranco 2012). Using online learning environments such as LMS enables both lecturers and students to interact with each other synchronously or asynchronously ( Asiri, Mahmud, Abu-Bakar & Ayub 2012; Kleinveldt et al. 2016; Phahlane & Kekwaletswe 2012). According to Kleinveldt et al. (2016) and Webbstock and Fisher (2016) since students are diverse, those that prefer to go over the material many times until they understand the concept may benefit from having access to the content irrespective of distance (anywhere) and time zone (anytime) without any physical contact with the lecturer.

### 2.6.2 Improves problem-solving and decision-making skills

According to Bagarukayo and Kalema (2015), LMS assists students in building problem-solving and decision-making skills. Through the use of the LMS, which presents a platform for working with real-world business simulations, students are able to learn how to resolve problems of different levels of difficulty, and, in the process, improve their decision-making skills (Bagarukayo & Kalema 2015).

### 2.6.3 Saves time in relation to marking and electronic capturing of results

The benefits of using an LMS for assessments are that lecturers save time due to online marking and capturing of results electronically, and students get their feedback in a shorter space of time (Singh & de Villiers n.d.). Bagarukayo and Kalema (2015) claim that the LMS provides students with immediate feedback, which even the lecturers found beneficial for them to monitor the performance of their students.

### 2.6.4 Enables easier management of large classes

Singh and de Villiers (n.d.) state that large classes can be better managed and controlled through making use of automated testing. In addition, Bagarukayo and Kalema (2015) claim

the LMS is capable of effectively managing sharing of learning content to large classes, whereby students, in the process of accessing the material regardless of time or location, would be encouraged to personalise their learning.

### 2.6.5 Increases variety of assessment methods

Singh and de Villiers (n.d.) claim that the LMS provides a greater variety of assessment methods for students. According to Asiri et al. (2012), the LMS includes various instructional and administrative functions which assist students in completing their tasks speedily. In addition, students can upload various types of files and, if there is as an error, a supporting error message which suggests how to fix the problem pops up to alert the student. This implies that the lecturers can upload learning materials and provide user instructions to support students who use the LMS.

### 2.6.6 Facilitates more student-centred teaching

Traditionally the education system was classroom-bound with lecturers monitoring learning of the students (Malm & Defranco 2012). Bagarukayo and Kalema (2015) claim that the LMS brings about the potential for distance learning and more student-centred approach. According to Bagarukayo and Kalema (2015), the student-centred approach offers students with "personal tools for construction, presentation, reflection, collaboration" as well as "facilitates networks between students within the same course and others in the field" (p.174).

### 2.6.7 Improves the chance of meeting the needs of diverse students

The use of an LMS, claim Govender and Govender (2014), enables universities to meet the needs of the increasing number of students as well as accommodate diversity of skills as some enter university with advanced skills and knowledge in digital media and communication. The use of the LMS allows for the creation of groups and thus enables the management of a diverse set of students (Bagarukayo & Kalema 2015).

### 2.6.8 Provides the option of different tools to enable learning

According to Liu (2013), today's students learn more efficiently and obtain richer information through the use of multimedia tools. As students at universities today are more prone to using the internet, incorporating the use of LMS in the teaching seems appropriate to meet the growing need for modern facilitation methods (Adzharuddin & Ling 2013).

### 2.6.9 Enables greater content sharing between students and lecturers

The use of LMS in teaching and learning practices has brought about a change in the way the lecturers work, such that lecturers can design and develop online material for sharing with the

students (McGill et al. 2008). As a result, more content is being shared within a short space of time as the LMS is capable of delivering content to students quickly (Ninoriya et al. 2011).

### 2.6.10 Facilitates a better individual learning experience for students

Liu (2013) claims that the main benefit of LMS in pedagogical practices is that it brings a better individual learning experience. Students may be motivated to study at their own pace revisiting content when making use of the LMS, and this promotes self-regulated learning (Bagarukayo & Kalema 2015). In addition, according to Govender and Govender (2014), the use of the LMS may lead to the better quality learning outcome. According to Bagarukayo and Kalema (2015), the use of LMS stimulates active participation from students, and in the process enables adjustment in a learning space which may lead to the achievement of desired learning outcomes. The students' experiences include time saving, as they can access study materials instantly without waiting for class, and can also engage with fellow students at their own leisure without having to go via the lecturer.

Notwithstanding these benefits of LMS use, challenges faced by lecturers in general, and specifically within the South African context, also need to be explored.

## 2.7 Factors influencing effective use of LMS by lecturers

The use of LMS is believed to be hindered by number of factors: no standard approach to LMS utilisation exists within the South African university landscape (Mtebe 2015); role played by lecturers in the use of the LMS (Asiri et al. 2012); limitations in bandwidth (Unwin et al. 2010); very high costs of internet access (Unwin et al. 2010); low levels of lecturer training (Unwin et al. 2010); growing digital divide regarding access to technology (Bagarukayo & Kalema 2015, Czerniewicz & Brown 2005; Webbstock & Fisher 2016); the diversity of the students (Jaffer et al. 2007); academic unpreparedness (Jaffer et al. 2007); the multilingualism currently experienced in these teaching and learning contexts (Jaffer et al. 2007); the lecturer's discomfort in relation to making use of the LMS to facilitate teaching and learning (Govender & Govender 2014); and deficiency of technical infrastructure and support (Asiri et al. 2012).

### 2.7.1 No standard approach to LMS utilisation

According to Mtebe (2015), there seems to be no standard approach to LMS utilisation within the South African university landscape. Hence, according to Mtebe (2015), each institution should identify strategies that suit their environment in order to customise the LMS to their unique needs, aspirations and their autonomy. Bagarukayo and Kalema (2015) and Mlitwa (2006) mention that most LMS technologies have been designed to be housed on the servers owned by the university allowing for the LMS to be modified to meet requirements of the institution. For example, the University of Stellenbosch's top management adopted the

proprietary LMS, calling it WebCT, and imposed it on the academics as mandatory (Mlitwa 2006). This initiative resulted in less interaction with the WebCT. On the other hand, the University of Pretoria (UP) ensured that they had an LMS that supported the lecturers' design activities that were to be accessed by a large number of students both in and off-campus when implementing the LMS (Bagarukayo & Kalema 2015). The UP approach encouraged the use of LMS. These examples show the different approaches towards the use of LMS and the implications thereof.

### 2.7.2 Lecturers' role

The role played by lecturers in the use of the LMS is essential (Asiri et al. 2012) as the acceptance of the LMS starts with the lecturer who initiates and increases the students' usage of the LMS (Al-Busaidi & Al-Shihi 2012). Mlitwa (2006) argues that if lecturers are not aware of the benefits of using the LMS (extrinsic motivation), they may choose not to make use of the system. Bagarukayo and Kalema (2015) suggest that lecturers need to be motivated to make use of the LMS through incentive payments for creating learning material and also to be ensured of job security if they accept and adopt the LMS as it benefits students' learning outside the classroom.

### 2.7.3 Limitations in bandwidth and high costs

Unwin et al. (2010) state that limitations in bandwidth and very high costs of internet access influence the use of LMS adversely. The available bandwidth in developing countries is low. Venter, van Rensburg and Davis (2012) argue that the reason may be that there is dependence on private providers using satellites instead of the government providing such facilities and thus the cost of high-speed access to the internet is prohibitively high.

### 2.7.4 Low levels of lecturers' training

A significant predictor of technology use is the amount of technology training provided (Maina & Nzuki 2015). The competence of a lecturer in terms of technology skills influences the decision of whether or not to make use of the LMS (Bagarukayo & Kalema 2015). According to Bagarukayo and Kalema (2015), well-trained lecturers who have constant support in the use of the LMS, may be encouraged to make use of the system.

### 2.7.5 Growing digital divide regarding access to technology

The 2016 CHE report (Webbstock & Fisher 2016) notes that academics are currently aware of the digital divide between students and institutions with resources and those without technological access. Bagarukayo and Kalema (2015), Czerniewicz and Brown (2005) and Webbstock and Fisher (2016) argue that there is an issue of a growing digital divide regarding access to technology. This claim arises as institutions and students without technological

access are lagging behind in integrating the functions of the LMS optimally in their teaching and learning.

### 2.7.6 Diversity of the students

Jaffer et al. (2007) claim that the diversity of the students may have an adverse effect on student use of the LMS, as students who do not know about computers may struggle to learn by themselves (Kotoua et al. 2015). Students come from different backgrounds and races and would have different expectations for their learning; therefore, students from poor socio-economic backgrounds may lag behind due to their limited or lack of exposure to technology (Bagarukayo & Kalema 2015).

### 2.7.7 Academic unpreparedness

Students who are not academically prepared may have a challenge with such innovations as the LMS (Jaffer et al. 2007). The students' level of motivation also plays a role in the success of the use of the LMS, and they may not be ready to study by themselves without a classroom teaching and learning setup (Kotoua et al. 2015).

### 2.7.8 The multilingualism currently experienced in these teaching and learning contexts

Jaffer et al. (2007) claim that the multilingualism present in South African universities presents a challenge for lecturers. South Africa has 11 official languages with English mainly being used as the language of instruction (Bharuthram & Kies 2012). Most students neither speak nor write the English language as their home language, and thus the learning process and ability to effectively use the LMS, which is in English, may be hindered (Jaffer et al. 2007).

### 2.7.9 Lecturer's discomfort when using the LMS to facilitate teaching and learning

If the LMS changes the manner in which the lecturers work, Govender and Govender (2014) claim that lecturers may feel discomfort in relation to making use of the LMS to facilitate teaching and learning. Similarly, Asiri et al. (2012) claim that the rate of technology use may be increased if the lecturer feels he or she can make use of the system. In addition, the lecturers may be willing to make use of the new system if it is consistent with the current system that they have been using.

### 2.7.10 Technical infrastructure

The availability of technical infrastructure is an important factor that influences lecturers' decisions as whether to make use or not make use of the LMS (Asiri et al. 2012). Adopting a new system without resources may cause more problems with no available resources to fix them, and thus would be of little benefit. Bagarukayo and Kalema (2015) suggest that universities, especially in the developing countries, should seek financial assistance from their

governments in order to upgrade their technological infrastructure. If technological infrastructure is insufficient, lecturers may choose not to make use of the LMS.

### 2.7.11 Technical support

Bagarukayo and Kalema (2015) maintain that there is need for support from ICT department, while Mtebe (2015) adds that lectures and students need to be fully supported for the effective use of LMS to occur. Asiri et. al. (2012) argue that lecturers are comfortable making use of the LMS, knowing that there is a technical person that they can contact for help if they get stuck. Technical support, according to Govender and Govender (2014), is shown to facilitate lecturers making use of the LMS.

## 2.8 Summary of the literature

The existing body of knowledge suggests that although there is a growing need to make use LMS by lecturers in teaching and learning, lecturers seem not to be aware of the benefits from LMS use (Mlitwa 2006). In addition, infrastructure instability claim Asiri at el. (2012) and Unwin et al. (2010) influences the use of LMS. Finally, low levels of lecturers' training (Unwin et al. 2010) coupled with lecturers' discomfort in using the LMS in teaching and learning (Govender & Govender 2014) may influence the lecturers' use of LMS. It is this gap that this research study aims to address in order to understand the lecturer's perceptions towards LMS use.

In order to understand whether lecturers have been able to access the benefits reviewed as well as understand factors inhibiting lecturers' LMS use, the conceptual framework guiding this study is discussed below.

## 2.9 Conceptual framework

In order to address the research question '*what are underlying reasons for SMU lecturers' decisions on whether or not to make use of the LMS?',* a conceptual framework that underpins the research is required. Bhattacherjee (2012) argues that "theories provide meaning and significance to what we observe, and observations help validate or refine existing theory or construct new theory" (p.3). Three theories have been considered for this research study: Activity Theory (AT) (Engeström 1987), Task-Technology Fit (TTF) (Goodhue & Thompson 1995) and the UTAUT (Venkatesh, Morris, Davis & Davis 2003). This study aims to understand the lecturers' perspective on the use and non-use of LMS within an educational context; therefore, theories which have been used extensively in educational research to study technology adoption were selected as possible frameworks. Each framework has been reviewed in order to determine if its use would facilitate a more holistic understanding of the underlying reasons behind the SMU lecturers' LMS usage and non-usage.

### 2.9.1 Conceptual frameworks considered

#### 2.9.1.1 Activity theory

Activity theory (AT) is a conceptual framework that uses the elements of an activity system such as “subject, object, tools, rules, community, a division of labour and outcome” to describe the practices and viewpoints (Czerniewicz, Glover, Deacon & Walji 2016, p.43). AT was considered to underpin this study due to the subject’s perspectives (lecturer) being of primary importance. Karasavvidis (2008) states that AT offers a “theoretical tool for understanding conflicts, friction, contradictions, and inconsistencies both between and within the components of an activity system” (p.196). It also allows the researcher to conceptualise what works and what does not work in the innovation; what factors impede change; and at what level. The main idea of AT is that subjects interact with objects (substantial or abstract), facilitated by tools, to obtain the transformed outcome (Hung, Yu, Liou & Hsu 2009).

Gedera (2014) used AT to examine and document the successful and unsuccessful incorporation of educational technologies and events into learning environments. He found that not only do “virtual tools affect students’ active participation in learning activities” (p.47) but also the experience, knowledge, and skills of both students and lecturers influence student participation. Using AT, Mlitwa and van Belle (2010) explored the adoption of LMSs in a tertiary education institution. They found that e-learning may be investigated as a teaching-learning work activity system (not an individual isolated exercise but collective) with an “objective, mediators, actors, actions, mediator tensions, work activity as a transformation, and the activity outcomes” (p.6). In addition, Veerabhadram (2014) used AT to explore the integration of mobile LMS in higher education and found that people, structures, and tools were viewed as a socio-technical system.

AT focuses on the subject as primary, i.e., the lecturer in this study, which is in line with what is being researched. As well as AT does not substantially account for the amount of effort that is going to be expended and the resulting lecturers’ performance. However, AT is extremely complex and involves various elements having multi-dimensional relationships which are beyond the scope of this research study. Therefore, AT was seen as unsuitable for this research study.

#### 2.9.1.2 Task-technology fit

TTF is defined as the “degree to which a technology assists an individual in performing their portfolio of tasks” (Goodhue & Thompson 1995, p. 216). TTF consists of five constructs: task characteristics, technology characteristics, task-technology fit, utilisation, and performance impacts. TTF was considered because it explores the ‘fit’ perspective between technological

characteristics and task requirements which may lead to individual better performance abilities (Goodhue & Thompson 1995).

McGill et al. (2008) who used TTF to explore the relationship between LMS use and teacher performance found that although TTF had a strong positive influence on perceived impact on learning, it had a weak positive impact on student grades. D'Ambra, Wilson, and Akter (2013) used TTF to explore the adoption of e-books by academics. They found that the tasks of academics, the technical characteristics, and the individual characteristics of academics significantly influenced e-books TTF leading to the effective use of e-books and overall performance. In 2011, McGill, Klobas, and Renzi conducted another study in relation to LMS use. It was found that "TTF directly affected instructors' perceptions of the impacts of the LMS on their performance, indicating that the better the fit of an LMS to the skills of an instructor and the tasks that the instructor must complete, the more positive its effect on their performance is likely to be" (McGill et al. 2011, p.57).

TTF is not a suitable conceptual framework for this study for a number of reasons. Firstly, the research question for the study aims to explore the use and non-use of LMS by lecturers and the underlying reasons motivating the choices rather than the 'fit' of the technology. Secondly, TTF does not include an element of individual effort, a key in understanding the reasons a system is being used or not (Asiri et al. 2012).

#### 2.9.1.3 Unified Theory of Acceptance and Use of Technology

In the context of studying the use of technology with education, many studies (Akbar 2013; Attuquayefio & Addo 2014; Brown & Czerniewicz 2008; Marchewka, Liu & Kostiwa 2007; Raman, Don, Khalid & Rizuan 2014; Thomas, Singh & Gaffar 2013) have incorporated the conceptual framework provided by the Technology Acceptance Model (TAM) (Davis 1989). This model was developed to explain an individual's intention to use technological innovation, and is composed of two major predictors: perceived usefulness and perceived ease-of-use. Since its original proposal, Venkatesh et al. (2003), has formulated the UTAUT model in order to explain user intentions and their subsequent usage behaviour. UTAUT draws on the Theory of Reasoned Action, the TAM, the Motivational Model, the Theory of Planned Behaviour (TPB), the combined TAM and TPB, the model of Personal Computer Utilisation, the Innovation Diffusion Theory, and the Social Cognitive Theory (Venkatesh et al. 2003).

Venkatesh et al. (2003) used UTAUT to evaluate the possibility of the success of the new technology introduction as well as to identify factors that would affect the performance of this technology. UTAUT is a model that has been widely used by researchers to explain adoption and the use of information technology in industries such as the marketing, psychology, and

information systems (Williams, Rana, Dwivedi & Lal 2011). UTAUT has four key concepts: performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) (Venkatesh et al. 2003). In addition, UTAUT also has four moderating factors used to describe these key concepts: gender, age, experience and voluntariness of use (Venkatesh, Thong & Xu 2016) as shown in Figure 1 below.

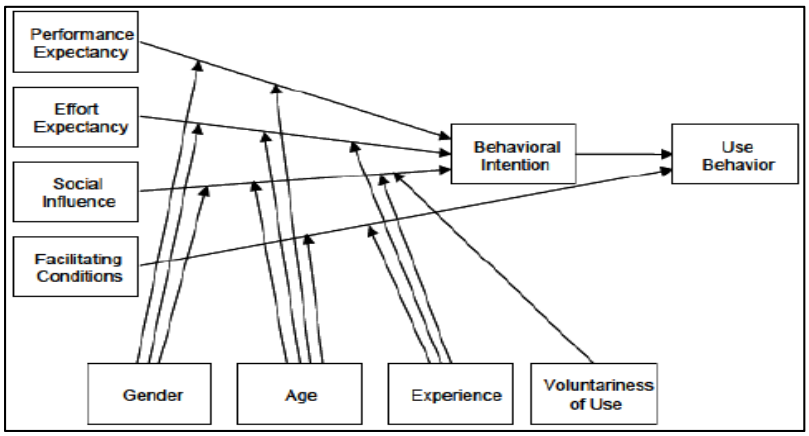



*Figure 1: UTUAT model - adapted from Venkatesh et al. (2003)*

UTAUT has been selected as an appropriate framework as it addresses identified gaps in the literature which include lecturers' performance, effort required and facilitating conditions.

Performance expectancy (PE) is defined as "the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh et al. 2003, p.447). Kabarungi, Musiimenta, and Atuhe (2016) claim that lecturers have improved their teaching and learning skills through the use of LMS, especially uploading content, which is an easier way to share learning content with the students. As students are the recipients of the lecturers' teaching and learning which includes knowledge transfer, assessment, student-teacher relations, organisational skills and communication skills (Molefe 2010), the students learning provides an indication of lecturer performance but also may influence lecturer's usage in a social context. Mudaly (2012) who used the UTAUT model for investigating the use of the LMS to support teaching and learning in KwaZulu-Natal, South Africa, suggests that the "intention to use the LMS is likely to increase if a learner or student perceives the LMS to be useful" (p.87). This implies that the lecturers become motivated to use LMS when they know that the students appreciate and use the system and that there are benefits from such usage.

Effort expectancy (EE) refers to "the degree of ease associated with the use of the system" (Venkatesh et al. 2003, p.450). Govender and Govender (2014) claim that lecturers prefer to be comfortable (intrinsic value) with the system in order for them to make use of it efficiently and sufficiently. In another case, where lecturers use LMS, Liu (2013) used UTAUT to

investigate the students' acceptance of Moodle in English as a Second Language and claims that EE influenced the acceptance of the LMS.

Social influence (SI) can be described "as the extent to which an individual perceives that significant others believe he or she should use the new system" (Venkatesh et al. 2003, p.451). In cases where lecturers use LMS, Mudaly (2012) claims that students found using the LMS easy to learn from, fun, and understandable such that there was no need for a textbook because they were using PowerPoint presentations. For lecturers, Kleinveldt et al. (2016) and Webbstock and Fisher (2016) state that university management encourages lecturers to make use of the LMS, while Mudaly (2012) found that students were using LMS to their own benefit but not to impress their friends. This shows the significant others who could affect SI to include fellow lecturers and students.

Facilitating conditions (FC) are defined as the "degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system" (Venkatesh et al. 2003, p.453). According to Unwin et al. (2010), low levels of training of lecturers and students on using the LMS may have a negative effect on LMS usage. In addition, according to Bagarukayo and Kalema (2015), unavailable technical support may hinder the use the LMS. Kleinveldt et al. (2016) recommend that in order to advance the use of the system lecturers should be trained during less busy periods, workshops need to be more practical and offer training on teaching with the system rather than just using the system; technical, and training support should be available at all times; and regular updates in relation to the LMS should be communicated to staff.

### 2.9.2 Adapted UTAUT

Most studies that have used UTAUT to study the use of technology in education have been quantitative in their design, aimed at finding out about the extent of the adoption and utilisation of the technology (Dwivedi, Rana, Chen & Williams 2011). As this study aims to provide an understanding as to the underlying reasons that individual lecturers have when deciding on whether or not to make use of the LMS, UTAUT has not been used to prove a theory but rather used an adapted UTAUT model, as not all the constructs were investigated, as a language of description. In addition, while UTAUT is traditionally used as a quantitative model and thus does not address underlying reasons for individual effort, by utilizing an adapted UTUAT model in a qualitative manner individual performance and effort has been taken into account.

The adapted UTAUT model has been thus used to facilitate the exploration of lecturers' current and future envisaged LMS use. As this study does not use the UTAUT framework to prove the hypotheses linking the four key concepts to behavioural intention and use behaviour have

been removed. In addition, the moderator of voluntariness of use has also been removed as there is no mandated use of the LMS at SMU.

The demographic details of age, gender and experience have also been removed as they are used to provide richness to the data rather than as moderators. Lastly, as this study is interested in understanding the underlying reasons for lecturers' CRU of LMS and FEU of LMS, UTAUT's behavioural intention to use the technology and the resulting usage behaviour which refers "to people's perception of the ease or difficulty of performing the behaviour of interest" (Ajzen 1991, p.183), has been adapted in line with the research objectives.

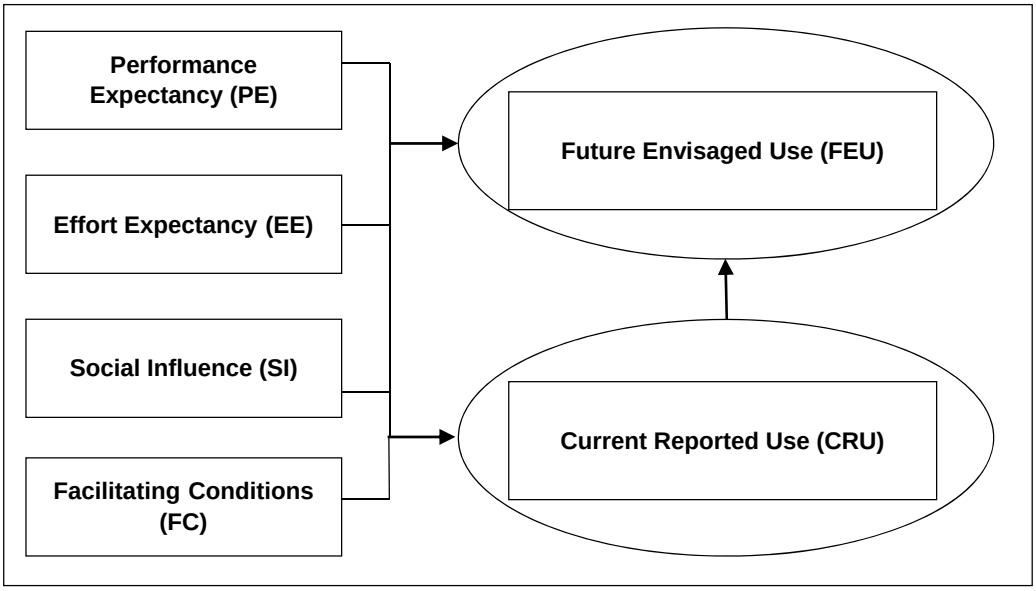



*Figure 1: Adapted conceptual framework*

In this study, PE has been used to describe the benefits that may be gained by lecturers making use of the LMS; EE has been used to describe the challenges or hindrances associated with making use of the LMS such as how will making use of the LMS affect the comfort that the lecturer has for facilitation purposes (Govender & Govender 2014); SI has been used to describe the factors that are motivating or hindering the use of the LMS; and FC has been used to describe the conditions available for the use of the LMS such as technical support and training of the lecturers (Bagarukayo & Kalema 2015). The following coding of concepts from the adapted UTAUT model has been used to guide data collection as well as the data analysis process.

| Concept | Conceptual Definition | Coding Definition | Codes/Sub-codes |
|---|---|---|---|
| **Performance Expectancy** | "The degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh et al. 2003, p.447). | PE refers to whether the lecturers think that using the LMS will improve their performance. | (PE) |
| **Effort Expectancy** | "The degree of ease associated with the use of the system" (Venkatesh et al. 2003, p.450). | EE refers to how much effort lecturers believe is needed in order to make effective use of the LMS in their teaching. | (EE) |
| **Social Influence** | "The extent to which an individual perceives that significant others believe he or she should use the new system" (Venkatesh et al. 2003, p.451). | SI refers to the manner in which a lecturer perceives others' influence affects their use of LMS. | (SI) |
| **Facilitating Conditions** | "The degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system" (Venkatesh et al. 2003, p.453). | FC refers to the lecturers' perceptions of the technical infrastructure and support needed to use the LMS. | (FC) |
| **Reasons for Current Reported Use / Future Envisaged Use** | CRU, adapted from behavioural intention to use the system, "refers to people's perception of the ease or difficulty of performing the behaviour of interest" (Ajzen 1991, p.183). | Usage will be referred to CRU and future envisaged use in relation to whether or not lecturers are making use or envisage that they will make use of the LMS in the future. | (CRU/ FEU) |

Table 2: Coding of concepts from the conceptual framework

*Note: Terms CRU and FEU will be used in the report to convey reason for CRU and FEU.*

## 2.10 Summary of the chapter

This chapter discussed the integration of ICT in tertiary education, learning and its progression to e-learning. Next, the South African context in relation to e-learning was presented. E-learning tools such as CMS, LCMS, SNS, and LMS were then discussed along with a comparison between the LMS and each of these tools. The benefits of LMS implementation and use were explained, and the factors hindering the effective use of the LMS were presented. Different conceptual frameworks were then reviewed, and the conceptual framework, UTAUT, selected for this study was discussed in relation to the requirements for this study. Finally, the adapted UTAUT model was coded in order to construct the research instruments and guide the data collection. The next chapter presents the research methodology that was employed in the study.

# CHAPTER 3: RESEARCH METHODOLOGY

This chapter presents the research methodology and the design chosen for this study. Furthermore, the population, sample, data collection methods, data analysis process and evaluation of methods are presented.

## 3.1 Research paradigm and approach

A research paradigm, which can either be quantitative or qualitative, is a "pattern or model or shared way of thinking about some aspect of the world" (Oates 2006, p.13). This study employed qualitative methods so as to enable the researcher to make "reasonable inferences about a phenomenon by combining empirical observations with logical reasoning" (Bhattacherjee 2012, p.18). Qualitative research concentrates on exploring, examining and describing people (Orb, Eisenhauer & Wynaden 2000). Thus, the approach is appropriate for this study which seeks an in-depth, holistic understanding of reasons for SMU lecturers' decisions about the use of LMS. The interpretivist approach underpins the research strategy and the design of this study. The strength of an interpretive study is that additional insights are possible as the researcher is speaking to peers (Creswell 2014). Interpretivist research focuses on the qualities of entities, processes, and meanings that are non-numerical, answering the "what, how, when and where of it" (Creswell 2009, p.1). In order to create an in-depth understanding of the context, the researcher conducted interviews with peers in order to understand lecturers' underlying reasons for their use or non-use of the LMS in their teaching and learning.

## 3.2 Research design

The research design enables the research question to be answered as it provides "a strategy that moves from the underlying philosophical assumptions to specifying the selection of participants, the data-gathering methods to be used and the data analysis to be done" (Maree 2016, p.72). This research study employed a case study research design with the focus on developing an in-depth understanding of a single case. The aim of using a case study, claim Oates (2006, p.141), is to "obtain a rich, detailed insight into the 'life' of that case and its complex relationships and processes". As the boundary between the case and its contextual conditions are not evident, argues Maree (2016), it is essential to bind the case to time and place, meaning that the study was only focused on the set time, which is the year 2017; and place, which is SMU.

According to Maree (2016), many qualitative research studies are exploratory as they aim to build a new understanding of the phenomenon being studied. As the study aimed to

understand SMU lecturers' underlying reasons for the use or non-use of LMS (in this case, Blackboard) in their pedagogical practices, an exploratory research design was employed.

### 3.3 Population and sample

The population for this study was drawn from SMU, a university located in a Township of Ga-Rankuwa in Pretoria, South Africa. While the university has made a substantial investment in the LMS Blackboard, the use of this LMS is not mandatory for lecturers or students.

As this study aimed to understand underlying reasons for use and non-use of LMS, the sample included lecturers that both use and do not use LMS. In qualitative research, the sample size does not have to be large in order to understand the depth of the phenomenon, but rather a sufficient number is needed so that saturation can be reached (Fusch & Ness 2015). Creswell (2014), defines saturation as the point when "the researcher stops collecting data because fresh data no longer sparks new insights or reveals new properties" (p.296). According to Creswell (2014) and Mason (2011), saturation can be reached from the third participant onwards, although Morse, Lowery, and Steury (2014), claim that a sample size of at least six is needed for saturation to be reached. As this study focused on two categories, users and non-users, a sample size of six lecturers from each group was considered as a target sample size from which to generate rich information on LMS usage and non-usage from lecturers.

### 3.4 Research Instruments

The interview schedule consisted of set 1 questions for the lecturers using the LMS (Appendix A) and set 2 questions for the lecturers not using the LMS (Appendix A). The research instrument was coded using *a priori* codes developed in accordance with the modified UTAUT conceptual model (Wright 2016). Interview sessions lasted from 9 minutes 36 seconds to 34 minutes 17 seconds. As a way to ensure the accuracy of the interview, interview sessions were audiotaped and transcribed verbatim for each participant (Creswell 2014). The conceptual framework and the related concepts of PE, EE, SI and FC along with the *a priori* codes, for both users (CRU) and non-users (FEU) are shown in Table 3 below.

| Interview Question | | Codes/ Sub-codes |
|---|---|---|
| **Users (CRU) - Set 1** | **Non-Users (FEU) - Set 2** | |
| Can you describe how you think using the LMS has improved your teaching? | Can you describe how you perceive using the LMS will improve your teaching? | (PE) |
| Can you explain how you have found the process involved in learning to use the LMS? | Can you explain how much effort you think is needed in order to make use the LMS tools? | (EE) |
| Can you please indicate how often and to what extent have you used the LMS tools? | | |
| How have you found using the LMS tools listed above? | | |
| Would you please comment on whether you believe that people (colleagues, organisation, and students) influence whether you should or should not use the LMS? | Would you please comment on whether you believe that people (colleagues, organisation, and students) who influence your behaviour think you should or should not use the LMS? | (SI) |
| Can you detail any positive or negative influences to the university management that you may have experienced due to your use or non-use of LMS? | Can you detail any positive or negative influences to the university management that you may have experienced due to your use or non-use of LMS? | |
| Between mandatory and optional adoption of LMS at SMU, which one do you think the university should implement? | Between mandatory and optional adoption of LMS at SMU, which one do you think the university should implement? | |
| Can you detail conditions at SMU that you believe would assist you in using the LMS? | Can you detail conditions at SMU that you believe would assist you in using the LMS? | (FC) |
| Can you comment on whether or not you believe that the university has provided sufficient technical infrastructure and support to ensure that LMS is accessible by lecturers? | Can you comment on whether you believe or not that the university has provided sufficient technical infrastructure and support to ensure that LMS is accessible by lecturers? | |
| Have you been trained to make use of LMS? If yes, would you detail the training you have received as well as how this has affected your use of the LMS? | Have you been trained to make use of LMS? If yes, would you detail the training you have received as well as how this has affected your use of the LMS? | |

Table 3: Interview questions adapted from UTAUT

### 3.5 Data collection methods

Oates (2006) proposes that interviews are a suitable data collection method for a qualitative research study because they enable the researcher to obtain detailed information relating to a phenomenon. The interview is a process whereby there will be a conversation between a

researcher and the participants with the purpose of the researcher gaining information from the lecturers (Maree 2016; Oates 2006).

The research study has employed semi-structured interviews so that the research instrument is flexible in relation to the order of questions to enable a flow of the conversation (Oates 2006). In addition, the researcher also included probes for additional questions if needed in order to clarify the issues brought up by the interviewee that were not prepared beforehand (Oates 2006).

In order to identify and locate the SMU lecturers, a register of SMU lecturers was used. Thereafter, a computerised random number generator was used to select 40 lecturers for the study randomly. The high number (40) was selected in anticipation of unavailability or refusal to participate by some selected lecturers. Any participant showing interest to take part in the study was considered irrespective of the group or category they represented. Qualitative research state in order to understand the depth of the phenomenon, a sample size needs not be large but should rather be sufficient so that saturation can be reached (Fusch & Nell 2015).

According to Creswell (2014), saturation occurs when no new information emerges from data collected and the process of data collection is then halted. A sample size of six may be sufficient to reach saturation (Morse et al. 2014). According to Creswell (2014) and Mason (2011), saturation can be reached from as few as three participants. In this study after interviewing six lecturers that were not using the LMS, it was observed that no new information had been provided by the last two, and thus saturation was reached. Therefore, subsequent interviews excluded any further potential participant who identified him/herself as a non-user. For the user category, after six interviews saturation was also reached. Hence, twelve participants were interviewed in this study.

### 3.6 Data analysis process

The qualitative research paradigm includes the use of qualitative data as a means of analysing words which are not reducible to numbers (Braun & Clarke 2013). Qualitative data analysis takes the form of an “ongoing and iterative process, implying that data collection, processing, analysis, and reporting are intertwined, and not merely a number of successive steps” (Maree 2016, p.109). In this study, the data were transcribed verbatim into a Microsoft Excel spreadsheet; the rows of the spreadsheet were used to present similar questions for the different participants. The interview responses of LMS users and non-users were presented on a separate worksheet. In each case, the questions were analysed for all the participants of the same level to extract the content for every question. This was followed by consolidation of the responses and reporting in chapter 4.

The study used a priori codes to guide the analysis. Utilizing the adapted UTAUT model, each code was derived from the UTUAT constructs i.e. a priori coding was used. Table 6 (Appendix B-iii) shows the a priori codes developed. For example, Performance Expectancy became PE, with CRU and FEU in PE respectively looking at reasons for Current Reported Use and Future Envisaged Use. Effort Expectancy, Social Influence, and Facilitating Conditions became EE, SI, and FC, respectively, with CRU and FEU. Recorded data were transcribed verbatim and converted into written scripts (Craver 2014). The transcripts were read, and content related to the code was then identified from the data (Braun & Clarke 2006) so as to assist in responding to the research questions. Content analysis, according to Stemler (2001), is the process that condenses the interview transcripts into manageable chunks of information in relation to a set of rules. In this research study, the transcribed data were studied, and codes were assigned to indicate patterns meaningful to the study. Then the researcher provided descriptive information to interpret the findings in order to address the research objectives.

## 3.7 Evaluation of methods

According to Weber (2004), the criteria for evaluating knowledge claims include credibility, transferability, dependability, and confirmability. Each is transcribed next.

### 3.7.1 Credibility

Credibility is about the truth value, or how to ensure that the reader will believe the findings of the study (Oates 2006). To achieve credibility in this study, the researcher did a credibility check of the data analysis with the participants (Thomas 2003), by asking them to crosscheck if the verbatim transcribed transcripts captured their responses without being altered in any way.

### 3.7.2 Transferability

Transferability, according to Oates (2006), “does not involve generalizability claims but invites readers of research to make connections between elements of a study and their own experience or research” (p.124). In order to assist readers to know if the findings are transferable to other similar contexts, the researcher provided detailed information about the context used in a study in the report (Miles, Huberman & Saldaña 2014) so that interested readers can compare it with their own, extend the study, or even design their own studies of a similar nature using lessons learnt from this one. However, this research study does not claim generalizability since it is a qualitative case study based on a non-random sampling approach for participants.

### 3.7.3 Dependability

Dependability ensures that the research process has been done with reasonable care addressing issues of quality and integrity with consistency (Oates 2006). As a result, the researcher has documented the research process to assist readers (Appendix B-iv and Appendix B-v).

### 3.7.4 Confirmability

Lastly, confirmability involves "neutrality and the way in which the findings of the study have been shaped by the participants and not by the researcher bias, motivation, or interest" (Oates 2006, p.125). According to Miles et al. (2014), it is impossible to avoid biases entirely when conducting research. However, research bias should be minimised. Therefore, within this study, the researcher explained the methodology and described the data collection, analysis, and interpretation of the findings so that personal assumptions, values, and own experience of the researcher can be taken into consideration.

## 3.8 Ethical issues

Within a research study, it is essential that participants should be protected from harm during data collection, in this case, interviews (Orb et al. 2000). Therefore, ethical clearance was obtained from the Wits University Human Research Ethics Committee (Non-Medical) before carrying out the study (Research Protocol Number: CINFO/1147, Appendix B-i). To receive ethical clearance, the researcher also applied for permission to collect data from SMU lecturers, and permission was granted (Appendix B-ii). To comply with ethical research standards, participants were invited on a voluntary basis and informed that they may withdraw their participation at any time without having to explain their decision (Appendix B-iv). The lecturers were also given information about the purpose of the study, the value of their contribution, consent for audio recording, and time required to conduct an interview. Participants signed a consent form (Appendix B-v) prior to being interviewed.

As the interviews were all conducted at the lecturers' workplace, ethical dilemmas such as withholding the truth, biases, and knowing the participants may have influenced a subjective interpretation of the results (Orb et al. 2000). These dilemmas have been offset by assuring participants that their confidentiality would be preserved by not divulging the details of the participants in the final report or to any third party (Orb et al. 2000) and their identities would be concealed by using pseudonyms. Furthermore, data collected were transcribed verbatim so as to ensure trustworthiness of the findings.

## 3.9 Summary of the chapter

This chapter described the research methodology used in understanding the lecturers' perspectives of LMS at a South African university. The research design was explained as were the evaluation methods followed. Ethical issues, contributions of the study, limitations and future research were also presented. The analysis, findings, and discussions are presented in the next chapter.

# CHAPTER 4: FINDINGS AND ANALYSIS OF THE STUDY

This chapter presents the study's findings from the interview data collected in order to understand the main research question *what are underlying reasons for SMU lecturers' decisions on whether or not to make use of the LMS?* As a means to enable a comprehensive understanding of reasons that hinder or motivate SMU lecturers to use LMS, the study's sub-questions are also addressed, namely: what is the regular practice of SMU lecturers in terms of LMS use?; what are SMU lecturers' perceptions regarding the benefits to be gained by making use of the LMS?; what are SMU lecturers' reported challenges or hindrances associated with making use of the LMS?; and what are the motivating factors that SMU lecturers perceive influence the use of the LMS?

The study used the UTAUT framework (Venkatesh, Morris, Davis & Davis 2003), as the conceptual framework by which to describe the underlying reasons of lecturers' use or non-use of LMS in their pedagogical practices. The four concepts of this framework: PE "the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (p.447); EE "the degree of ease associated with the use of the system" (p.450); SI "the extent to which an individual perceives that significant others believe he or she should use the new system" (p.451); and FC "degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system" (p.453) have been used to explore the research questions. As this study investigated both use and non-use of the LMS, for lecturers making use of LMS, Current Reported Use (CRU) has been used; for lecturers not making use of the LMS Future Envisaged Use (FEU) has been used.

## 4.1 Data collected

In order to get a sense of differing views, the study collected data from three of the five schools at SMU, namely Health Care Sciences (SHCS), Medicine (SM), and Science & Technology (SST). In addition, to understand the perspectives of use and non-use of LMS at SMU by lecturers, the participants were grouped into LMS user and LMS non-user categories.

The demographics of LMS users are shown in Table 4, and LMS non-users are shown in Table 5. Table 4 also shows the LMS tools that the lecturers report to be currently using. For all participants, pseudonyms have been used to ensure confidentiality and anonymity (Creswell 2014; Saldaña 2010). The pseudonyms begin with the first letter of the participant's name (Parbhoo 2017). The tables are ordered in chronological order of when the interview was conducted.

| Participant Number | Lecturer Name | School | Gender | Age | Application Tools Used | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | ADMT | OCC | OCS | ST | ASMNT | CSL | PC | SC | IEC |
| 02 | Alice | SHCS | Female | 60s | | X | X | | | X | | | |
| 03 | Venus | SHCS | Female | 30s | | X | X | X | X | X | | | X |
| 04 | Jacob | SST | Male | 50s | | X | X | X | X | | | | |
| 05 | Lorraine | SM | Female | 30s | | X | X | | | | | | |
| 07 | Vuyelwa | SST | Female | 30s | X | X | X | X | | X | | | X |
| 12 | Mazwi | SM | Male | 50s | | X | X | X | X | X | | | X |

Table 4: Lecturers using Blackboard

The application tools that lecturers report they are using in the LMS are: ADMT - Administration Tool, OCC - Online Content Creation, OCS - Online Content Storage, ST - Student Tracking, ASMNT – Assessment, CSL – Communication between Students and Lecturers, PC – Peer Communication, SC – Shared Communities, and IEC - Interactive Educational Content. The cross ticks (X) indicate reported usage of a particular application tool by the lecturer.

| Participant Number | Lecturer Name | School | Gender | Age |
|---|---|---|---|---|
| 01 | Lutendo | SST | Female | 20s |
| 06 | Lerato | SST | Female | 40s |
| 08 | Elias | SST | Male | 40s |
| 09 | Amos | SST | Male | 40s |
| 10 | Ayanda | SM | Female | 50s |
| 11 | Amukelani | SM | Female | 30s |

Table 5: Lecturers not using Blackboard

Table 4 shows which LMS tools lecturers currently report using: all lectures reported using OCC and OCS; four lecturers used ST and CSL; three lecturers used Assessment (ASMNT) and Interactive Educational Content (IEC); one lecturer used Administrative Tool (ADMT), and no lecturers used PC and SC. The School of Science & Technology (SST) had the highest number of lecturers participating in the study. While the reason for this may be attributed to the researcher's lecturing in this school, it may also be that lecturers in SST are more interested in understanding their use and non-use of the LMS. Gender and age do not seem to be significant in influencing lecturers' decision to make use or not make use of the LMS at

SMU. All interviews were recorded with the participants' consent. Data collected were then transcribed verbatim.

In conjunction with the conceptual framework, UTAUT, the study used content analysis in order to reduce the many words of interview transcripts "into fewer content categories based on explicit rules of coding" (Stemler 2001, p.1). Findings for data collected are presented with each of the UTAUT concepts: PE, EE, SI, and FC. Each of these has been reported separately. After that, a comparison of CRU and FEU is presented.

## 4.2 Performance Expectancy (PE)

The first concept, PE, is "the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh et al. 2003, p.447). Within this study, PE addresses how lecturers perceive the use of the LMS affects their performance.

### 4.2.1 Current Reported Use (CRU) in relation to Performance Expectancy (PE)

In order to understand the lecturers' CRU of the LMS in relation to their pedagogic performance, the question (q5 of set 1), "*can you describe how you think using the LMS has improved your teaching?",* was asked.

Lecturers making use of LMS mention numerous benefits in relation to their performance such as communication, content upload, anytime-anywhere, monitoring, and assessment.

#### 4.2.1.1 Communication

In the interview sessions, most of the lecturers report that the LMS enables them to communicate with students outside of class; in different ways; and to better manage performance interventions. The LMS assists lecturers in communicating with their students outside of lectures: "*It has improved because I can communicate with my students all the time"* (Vuyelwa-SST); *"I use Blackboard for communication with the students"* (Lorraine-SM). In addition, Venus (SHCS) reports that simpler and different communication styles such as online chats and blogs are also now a reality: "*using the LMS, it's actually a simpler way of trying to have that interaction with students…we just chat using the discussion panels, use the blogs and all of that*". Communication as a means to intervene due to lack of student performance is also a benefit of LMS use: *"I can now give general feedback online except in a situation where I need to speak to a student personally*" (Vuyelwa-SST).

#### 4.2.1.2 Content upload

Lecturers also view the ability to upload learning content through LMS as a benefit. Lorraine (SM) reports that sharing learning material with students is now easier and she can share the material in different formats which was not possible prior to the use of the LMS: "*it makes it*

*easy because I can upload the lectures either in PowerPoint or pdf, but if I email, it is only pdf format".* Jacob (SST) concurs: "*Blackboard has enabled me to share the lectures with the students and also to distribute slides series and photographs to the students*".

#### 4.2.1.3 Anytime-anywhere

The LMS flexibility of anytime-anywhere learning which gives students a convenient way to have classes and do revision without travelling to campus, thus saving time and associated costs is also a benefit mentioned by lecturers. Venus (SHCS) reports that she can now: *"teach them in a different way as opposed to being in class…I can still work from home…give class from home…have the students sit in their rooms, and we have like a tutorial…at whatever time that is convenient for them".* According to Jacob (SST), the use of LMS "*has enabled the students to do revision"* as lecturers put learning material online and students access it at a convenient time and place without going to class.

#### 4.2.1.4 Monitoring

Monitoring students' participation, as well as the authenticity of their contributions, are also reported as a major LMS benefit. Mazwi (SM) reports that using LMS "*allows you to know which student is using or exploring the technology or not…it also shows you the time the student has logged in".* Lecturers using the LMS are also able to monitor the authenticity of the work done: "*when students have logged in to write a test, I can check on whether a group of students has been using or answering the test at the same time or it was an individual effort"* (Mazwi-SM).

#### 4.2.1.5 Ease of assessment

Ease of assessment distribution, as well as interpretation of results when using LMS in pedagogical practices, are also key benefits mentioned by lecturers. Mazwi (SM) believes that using the LMS enables him to give assessments to large classes consisting of students from different disciplines in an easier manner which "*makes the assessment much easier*". With assessments that are mainly multiple choice questions, the LMS enables quick and easy marking: "a*ssessments are fine because you can do all different sorts of assessments using multiple choice questions, short questions, true/false, even sometimes discussions type of questions"* (Mazwi-SM). In addition, Vuywela (SST) reports that she is able to assist students more effectively as she can now focus on those questions not well answered as opposed to the entire assessment: "w*e can review assignments on Blackboard by also discussing questions with low marks"* (Vuyelwa-SST); with a summary of each question indicating the percentages of students who got the answer correct and also those who did not.

#### 4.2.1.6 Limitations

While most of the lecturers currently using the LMS perceive major PE benefits, two of the lecturers report student resistance to LMS adoption and lack of student access to resources as adversely affecting their performance. In regard to students' resistance to adopting the LMS, Alice (SHCS) reported that the use of the LMS does not enhance her performance as *"my students never used it, it was a one-way direction...students were not responsive"*. Not only did students not engage with the LMS, but Venus (SHCS) says *"they also complain because no one has ever used it…if you tell them they are going to use Blackboard, it becomes like, seriously you are going to complicate my life"*. Limited student access to the LMS as a resource is also a constraint, according to Alice (SHCS): "*they do not get access to Blackboard*", and thus students were not able to make use of the LMS even if lecturers expect them to.

### 4.2.2 Future Envisaged Use (FEU) and drawbacks in relation to Performance Expectancy (PE)

For the lecturers that are not currently using LMS, anecdotaly reasons cited for their non-use. Include lack of exposure to the LMS, insufficient training and difficulties with accessibility of the system.

In order to understand lecturers' FEU of LMS in improving job performance, question (q5 of set 2), "*can you describe how you perceive using the LMS will improve your teaching?",* was asked.

Lecturers not currently making use of the LMS report that their FEU of the LMS is similar in many aspects to those lecturers currently using the LMS, such as communication, content upload, anytime-anywhere, monitoring, and assessment. In addition, lecturers not using the LMS perceive that management of large classes, student management of learning, and lecture delivery are envisaged future benefits of LMS use.

#### 4.2.2.1 Communication

Lecturers believe that their FEU of LMS will improve communication with the students in terms of ease of access and frequency of contact. Lutendo (SST): *"if I had Blackboard as a form of a platform where I could communicate with the students it would be easier";* (Amukelani-SM): *"It is easier communication because the students can also access it on their mobile phones"*. Ayanda (SM) believes that she will be able to communicate with her students more frequently as the LMS enables *"you to interact with your students on a constant basis*".

#### 4.2.2.2 Content upload

The potential to upload content is also seen as an envisaged benefit: "*if we had the LMS, it would be possible to upload our things*" (Amos-SST); "*if I had Blackboard, I would use it to upload the notes like to put the notes there for them*" (Lerato-SST); and not only for lecturers, but also students as the LMS enables *"a way to ensure that your students have had time to interact with content"* (Elias-SST).

#### 4.2.2.3 Anytime-anywhere

Anytime-anywhere, where there are no venue or time restrictions for studying the content provided, is also mentioned as a future envisaged benefit. According to Lutendo-SST, students are able *"to do the work at home instead of being formally in the class to write a particular test or to submit the assignment*", while Amukelani-SM reports: "*I can go on holiday and still be in contact with the students, and they can be able to work remotely*". Moreover, accessing the LMS through mobile technology is viewed as a benefit: *"it will be better to use something, an instrument that the students are already interested in, and easily accessible*" (Ayanda-SM). However, the access seems to be a challenge: *"sometimes the network is not there"* (Lerato-SST).

#### 4.2.2.4 Ease of assessment

In relation to assessment, Lutendo (SST) and Elias (SST) envisage that using the LMS will make the assessment process easier since the students will do the assessment online. Lutendo (SST) reports that: *"if I had Blackboard I would be able to set online tests which will close at a particular time, even assignments … also the students would have the liberty to do the work at home instead of being formally in the class to write a particular test or to submit the assignment"*. Also, some lecturers think that the use of LMS provides an option to manage the process of assessment in an easier way: "*I think it is convenient; it helps lecturers especially if you have too many students and then LMS enables you to give as many assessments as possible using multiple choice type questions, and the marking is instant"* (Elias-SST).

#### 4.2.2.5 Management of large classes, student management of learning, and lecture delivery.

In addition to the benefits mentioned by lecturers currently making use of the LMS, benefits of management of large classes, lecture delivery, and student management of learning are also envisaged.

Lutendo (SST), Elias (SST), and Amos (SST) believe that their FEU of the LMS will help them manage large classes: "*I think the classes are relatively big and if I had Blackboard as a form*

*of a platform…it would be easier to manage them…I would be able to set online tests and assignments which will close at a particular time and students would be at liberty to do the work at home instead of being formally in the class to write a particular test or to submit the assignment"* (Lutendo-SST); *"it helps lecturers especially if you have too many students and then it's able to help you give as much assessment as possible and also ensures you that your students have had time to interact with content"* (Elias-SST); and *"due to a large number of students we have that could be something else that will really help"* (Amos-SST). It appears that lecturers envisage that the LMS will assist them in the management of large classes because some of the activities are automated.

Lecturers also envisage easier lecture delivery: *"I think to be honest it will…improve ease of lecture delivery because I can give them a task while not having a class and have the students give their inputs online saving time*" (Amukelani-SM).

In relation to the management of learning, Amukelani (SM) reports the LMS has the potential to "*promote independent learning self-study and things like that*" which will greatly assist students in managing their learning especially when they are busy with the block system. At SMU, the block system is in place: "*the structure of our programme requires students to go on a block system. This is where students go on a clinical placement for a period of time and come back on campus for a period of time to complete the syllabus. So, the students sometimes can relax and do less of theoretical work, but if you are on Blackboard you can actually be able to interact and also see who is participating or who is not communicating… this will improve even the management of their learning*" (Ayanda-SM). This ability to monitor student participation would also become a benefit: "*LMS also monitors if students are taking part in the activities, which is quite good and efficient*" Amukelani (SM).

### 4.2.3 Summary of CRU and FEU in relation to Performance Expectancy (PE)

From the interview responses of the lecturers using LMS (CRU), it appears that communication, content upload, anytime-anywhere, monitoring, and assessment are viewed as key benefits influencing their performance as educators. Notwithstanding these benefits, students' resistance to adoption of LMS and lack of student access to the LMS are reported as limitations. Lecturers not currently making use of the LMS (FEU) not only envisage benefits mentioned above but also believe that their FEU will enable better management of large classes, student management of learning, and lecture delivery.

## 4.3 Effort Expectancy (EE)

The second concept is EE, which is "the degree of ease associated with the use of the system" (Venkatesh et al. 2003, p.450). Within this study, EE addresses how lecturers perceive the amount of effort needed in order to make use of the LMS.

### 4.3.1 Current Reported Use (CRU) in relation to Effort Expectancy (EE)

#### 4.3.1.1 Learning to use the LMS (EE)

In order to understand how lecturers have found the learning processes in relation to using the LMS in their pedagogical practices, the question (q6 of set 1), "*can you explain how you have found the process involved in learning to use the LMS?",* was asked.

##### 4.3.1.1.1 Training, Practice, Refresher, and Technical Support

Lecturers report that in order to make effective use of the LMS training, continual practice, refresher courses, and technical support are essential.

In the interview sessions, some lecturers who currently make use of the LMS report that they attend training in order to learn how to make use of LMS. Jacob (SST) reports: *"I've done a course in Blackboard, which was a long time ago".* Vuyelwa (SST) feels that the process to learn using the LMS is not challenging and thus encourages her to make use of the system, "*I haven't found it difficult"*. Alice (SHCS) mentions: "*I've had two or three workshops, and it was productive and effective…after training I could work on Blackboard*".

It is not only the existence of training that lecturers found helpful but also the continual practice with the LMS: *"using LMS has been a bit of trial-and-error, I didn't have a workshop on Blackboard"* (Lorraine-SM); *"I just made sure that the day after I finish training I immediately went online before I forgot*" (Vuyelwa-SST).

For lecturers who report having received formal training, refresher courses seem to be needed. Jacob (SST), who received his LMS training a long time ago, reports that he has forgotten how to operate the system appropriately: "*I'm afraid that I've forgotten most of what I have learned in that course...a refresher course would definitely help me";* Vuyelwa (SST) reports: "*I got my training on Blackboard when I was at UL, where they normally have refresher courses for lecturers"*. Lorraine (SM) reports that she had not been formally trained on LMS and thus uses it on trial-and-error method; as a result, her usage was limited: "*I think that's one of the reasons why my usage of Blackboard is limited because I don't know what the programme can do, so I find it limited based on the knowledge I have of Blackboard*". This seems to indicate that once-off training without a follow-up and support may be inadequate for some lecturers to be able to make use of the LMS.

On-site support of the LMS is also reported as helpful. Lecturers feel that they receive suitable help from the ICT and e-learning subdivision: "*the Blackboard trainer helped me, and he came to my office once to help me when I was uploading learning material*" (Alice-SHCS); *"we do have support from the e-learning guys"* (Venus-SHCS); *"the trainer is doing very well giving the support"* (Jacob-SST).

#### 4.3.1.1.2 Ease-of-use

Lecturers report that the ease-of-use (user-friendliness) of the LMS encourages them to make use of the LMS. "*I find the process is a straightforward process*" (Mazwi-SM); "*I don't find it difficult to use*" (Vuyelwa-SST). Venus (SHCS) adds that using "*Blackboard isn't such a problem, we are in the digital era*". Lorraine (SM) appears to be able to perform basic tasks using LMS despite her limited knowledge: "*the limited use of Blackboard I have is positive in the sense that, the actual Blackboard has instructions that explain how it works, how it lays out features, and how I can add folders or change things. The other day I uploaded a wrong file, I liked the fact that it took me three seconds to delete it*".

#### 4.3.1.1.3 Extra work

While most of the lecturers that currently make use of the LMS feel that the effort expended has not been significant, some of the lecturers feel that a large amount of effort is needed as using LMS creates extra work because they do not have adequate knowledge about the LMS usage. Mazwi (SM) reports: "*after transferring learning content from one year to the other, the student list was duplicated, included previous and current students. I had to remove old students manually using this year's list, but I later found out that some of the students' names didn't appear in the new list, and I had already deleted them from the old list…and that also made all their grades to disappear. Reloading the students didn't return their grades…I then had to do manual grading…the same thing happens when students move from one semester to the other, those in the first semester does not automatically appear in the second semester…maybe these challenges are the reasons most of the lecturers are not using LMS"*. In addition to the effort needed to make effective use of the LMS, Vuyelwa (SST) feels that using the LMS creates more work for her, especially when some features are not available: "*with Blackboard here I can't publish my marks and I don't know why. I've tried with the trainer but still can't publish my marks. As a result, I feel I'm doing the job twice because if the marks are not online, I'm going to still print and paste them; and then go online to upload the marks when we know how to do it*".

### 4.3.1.2 LMS tools usage in relation to EE

In order to understand lecturers' CRU of the LMS tools in relation to frequency and the extent of use the questions (q7 of set 1) *"can you please indicate how often and to what extent have*

*you used the LMS tools?*" and (q8 of set 1) *"how have you found using the LMS tools?",* were asked.

#### 4.3.1.2.1 Frequency

Lecturers' responses in terms of frequency of LMS tools usage seem to indicate that no standard frequency of use exists as lecturers used the LMS for varying purposes. Venus (SHCS) reports that she uses the LMS tools all the time, "*I use it, for everything that I need to do for the module*"; Mazwi (SM) adds: "a*s long as I'm teaching the group who have registered on Blackboard I will use it*". Alice (SHCS) reports making use of the LMS tools quite often: "*for two years I've put all my study material on Blackboard*"; Lorraine (SM) reports that she uses the tools twice a week: "*I see the students twice a week, so let's say I upload twice a week*"; Jacob (SST) reports: "*I've used them over the past couple of years…once or twice a year";* and Vuyelwa (SST) indicates that she uses the tools twice per semester "*I use LMS assessment tool for all our four assessments, two in the first semester and two in the second semester"*.

#### 4.3.1.2.2 LMS tools used

Lecturers' responses regarding the extent of use of LMS tools seem to indicate that the majority of lecturers make use of Online Content Creation (OCC), Online Content Storage (OCS), Student Tracking (ST), Administration Tools (ADMT), and Communication between Students and Lecturers (CSL).

##### 4.3.1.2.2.1 OCC and OCS

Alice (SHCS), Venus (SHCS), and Lorraine (SM) report that they use the OCC and OCS to upload learning materials: "*I've put all my study material on Blackboard*" (Alice-SHCS); "*I still paste learning material on Blackboard*" (Venus-SHCS); *"I upload lectures, practicals or something like that, twice a week, so that's the extent of my usage*" (Lorraine-SM).

Lorraine (SM) and Vuyelwa (SST) report that they find OCC and OCS easy to use. Lorraine (SM) mentions that *"OCC and OCS are easy to use…I like the fact that I can make folders within a folder, such that if you open up my Blackboard there you will find five folders, and every folder has sub-folders with sub-folders but it makes it easy for me because if you ask me you want a specific lecture conducted on that region by such a person, you just follow the folders and you can easily find it; which makes it easier because you don't have to scroll through…so I have to say on that point of view I find it very user-friendly*". Vuyelwa (SST) concurs: *"the online content creation where you have folders with your information, I think that is fine, and I can't complain. Also, I think it's user-friendly I don't think it's difficult to use as long as you've mastered what you supposed to do then it's not a difficult thing to use*".

Notwithstanding the benefits presented, lecturers report that OCS has challenges, such as duplicating students' list and big files uploading slowly. Jacob (SST) reports that "*the files that I have to upload are fairly big, and that takes quite some time; and then the other thing is that we've got numerous first-year's groups, I've got the physiotherapy, the BDS, the MBCHB, and the BSc students, and I have to upload content separately for each of these groups; so uploading anything is a long process"*. Mazwi (SM) believes that using the LMS requires extra effort: "c*ontent storage is fine except that you have to transfer last year's content into a new year course, for example, if you are doing Physiology next year in 2018 … then when you transfer content the system is going to include the last year's students even if they are not doing the course anymore; and end up with a class of five hundred, instead of 250".*

#### 4.3.1.2.2.1 ST, ADMT, and CSL

In relation to the ST Vuyelwa (SST) reports: "*I use ST to give essay feedback online"*. In addition, Mazwi (SM) reports that he uses ST to monitor students' access to learning material: "*every time when the student logs in I am able to know, also the date(s) and sometimes times are available…even if you post a quiz or a test you are able to monitor those that accessed it and how are they performing. This information is displayed in the additional column to your quiz stats, and it shows student login details, or have not been to Blackboard"*.

In relation to the ADMT, Vuyelwa (SST) reports that "*the administration tool is mainly to give announcements to the students to tell them what to do or bring or read*". Some lecturers believe that the extent of their usage of the ADMT tool is limited by the access permissions for both lecturers and students. Lorraine (SM) reports that "*At the beginning of the year there are students that say, 'I can't access Blackboard'*", and Alice (SHCS) claims: "*there was no sense in doing it because nobody would look at it, nobody looked at it*". From the lecturers' perspective, lack of access rights is a challenge: "*if I had the ability to upload myself as a viewer in order to see how information upload appears to student, because at the moment I only have the right to be an administrator, not a user*" (Lorraine-SM); "*I would love to go further when it even comes to marks, but currently I'm unable to publish the marks via Blackboard, which is an administrative tool feature* (Vuyelwa-SST)".

In relation to CSL, lecturers seem to believe that CSL tool works well: "*I found CSL effective*" (Jacob-SST); "*I use CSL to give the scope for assessment guidelines on Blackboard"* (Vuyelwa-SST). However, CSL appears not to be sending alerts to either students or lecturers depending on who is receiving the message. Mazwi (SM) raises a complaint and gives a suggestion to attempt resolving this challenge: *"the students do not open the Blackboard on daily basis...and even on my side if I'm busy I sometimes forget to check the messages from*

*the students; so is maybe if there can be something like a beep alert so that if the message comes in your email or via sms to make you aware of the new message"*.

### 4.3.2 Future Envisaged Use (FEU) in relation to Effort Expectancy (EE)

In order to understand lecturers' perceived effort in relation to FEU of the LMS, the question (q6 of set 2), *"can you explain how much effort you think is needed in order to make use the LMS tools?",* was asked.

Some lecturers envisage that the little effort is needed to make use of LMS, others seem to believe that considerate effort is required, while others are undecided as to whether using the LMS will require considerate or little effort on their part if they are to start making use of LMS in their pedagogical practices.

#### 4.3.2.1 Little amount effort

Lutendo (SST), Amos (SST), and Ayanda (SM) envisage that using the LMS will not require considerable effort: "*I don't think it will be a lot, it's just a matter of familiarising myself with the new system"* (Lutendo-SST); "*I don't think there's a whole lot of effort*" (Amos-SST); "*for me I think the effort is to start, once you are on it I don't think there is pressure to say do everything all at once*" (Ayanda-SM).

#### 4.3.2.2 Considerable amount of effort

However, Elias (SST), Lerato (SST) and Amukelani (SM) envisage that considerable effort will be needed. They envisage a need to work harder in order to use the LMS effectively: "*I think because you need to work a lot when you design questions"* (Elias-SST). There is a feeling that using the LMS will increase the workload for lecturers: "*the problem with Blackboard or why I'm not using it…it's like it is too much to do…sometimes the network is not there…I just didn't find it user-friendly when trained, even getting access to it was a hassle; then I ended up not using it at all…if Blackboard could be user-friendly, in a sense that you don't have to go through so many steps, for example, you just login and upload then you are done…you just want something that you just attach, or you just click Blackboard, attach and students access whenever they can*" (Lerato-SST), while Amukelani (SM) believes that it will require *"everything, 100% effort"*.

#### 4.3.2.3 Undecided amount of effort

Amos (SST) feels that *"I don't think there's a whole lot of effort required to make use of LMS tools",* but could be more depending on the ease-of-use: "*is just not simple to do it because it involves many things, structures and whatsoever, so it's not easy, but if it was possible it was going to make our lives easier … I know how to use it but is just not easy ... it's difficult ...*

*unfortunately is not user-friendly for us, that is why none of us has ever used it especially for certain assessment*".

#### 4.3.3 Summary of CRU and FEU in relation to Effort Expectancy (EE)

##### 4.3.3.1 CRU in relation to learning to use the LMS (EE)

Lecturers currently using the LMS report that aspects such as training, practice, refresher courses, technical support, and ease-of-use are important when learning how to make use of LMS. However, the extra work that results from using the LMS is an issue that lecturers believe need to be addressed.

##### 4.3.3.2 CRU in relation to the frequency and extent of LMS tools usage (EE)

The frequency of LMS tools use by lecturers is not standard and seems to be influenced by the nature of the LMS use. Lecturers appear to be making use of the LMS tools in a different way and at different times. In terms of LMS tools usage, lecturers report that they are using OCC and OCS to create and upload learning material, while ST is used for student tracking and feedback, ADMT for giving announcements, and CSL for providing guidelines and scope to be covered during the assessment.

##### 4.3.3.3 FEU in relation to Effort Expectancy (EE)

Lecturers not currently making use of the LMS seem divided as to the amount of effort that will be needed to make use of the LMS. Some lecturers feel that making use of LMS will require considerate effort from them, while others mention that in order for them to make use of LMS efficiently and effectively, they will need to work harder. One lecturer is undecided because he believes that there might not be considerable effort required but that will depend on the ease-of-use of the LMS.

### 4.4 Social Influence (SI)

The third concept, SI, is described as "the extent to which an individual perceives that significant others believe he or she should use the new system" (Venkatesh et al. 2003, p.451). Within this study, SI addresses how significant others influence lecturers' perceptions regarding the use of LMS within their pedagogical practices.

#### 4.4.1 Current Reported Use (CRU) in relation to Social Influence (SI)

In order to understand the SI that significant people have on lecturers' CRU of LMS, the three questions (q9 of set 1) *"would you please comment on whether you believe that people (colleagues, organisation, and students) influence whether you should or should not use the LMS?";* (q13 of set 1) *"can you detail any positive or negative influences from the university*

*management that you may have experienced due to your use or non-use of LMS?";* and (q15a of set 1) *"between mandatory and optional adoption of LMS at SMU, which one do you think the university should implement?",* were asked.

Most of the lecturers report that colleagues, the organisation, and students influenced their decisions as whether to make use of LMS. While some lecturers believe that not only are they influenced but it is rather their role to influence the students to use the LMS.

#### 4.4.1.1 Colleagues

From the interview data, Jacob (SST) and Vuyelwa (SST) report that colleagues have positively influenced their use of LMS. Jacob (SST) mentions that "*generally there is a positive influence towards Blackboard from other lecturers, there's no negativity in my setup*", while Vuyelwa (SST) supports the claim: "*my husband, who is an employee here at SMU, always does that, he actually influences me"*. However, Mazwi (SM) and Lorraine (SM) seem to have been influenced negatively by their colleagues. Lorraine (SM) reports: "*I have a colleague that formally used Blackboard, and based on her experiences we know that assessments do not work for us; so yes that influences*". Mazwi (SM) says: "the *majority of lecturers in my department are not really using Blackboard … obviously, colleagues sometimes may influence you with their negative thoughts towards your decision to use or not use LMS, and maybe coming up with negatives towards something because they didn't really explore it fully*".

While some lecturers have been influenced either positively or negatively by their colleagues, Venus (SHCS) and Vuyelwa (SST) believe they have made an individual decision about the use of the LMS and influence their colleagues. Vuyelwa (SST) reports: "*cause I'm the one responsible for the assessments for the MBCHB course, on the last assessment I told my colleagues we are going to submit on Turnitin and then I said there is an option to actually mark online and they were sceptical, so after two days I was done marking my section while they were still marking theirs manually, and that actually prompted them to want to do it…so actually I'm trying to influence others*". Venus (SHCS) adds: *"I've said it also in our staff meetings that we as lecturers should make use of the system…so why should I be influenced otherwise? The system is there; it needs to be used...one day my colleagues will come back for a crash-course with me*."

#### 4.4.1.2 Organisation

The findings relate to the organisational approach as well as the constraints present within the organisation.

#### 4.4.1.2.1 Organisational Approach

Lecturers mention that the university's approach towards LMS use influences their decisions as to whether or not to make use of the LMS. The approach towards the adoption and implementation of the LMS at SMU, which currently is optional, seems to influence the lecturers' decisions as to whether to make use or not make use of LMS. While Jacob (SST) would like the use of LMS "*to remain optional",* Vuyelwa (SST) states: "*I would prefer it to be mandatory*", and Mazwi (SM) believes it should be mandatory: "*to me as long as there is initiative from the university where a lot of money has been put in…I think we should use it; because if we don't use it, then that will mean the university is wasting money*".

#### 4.4.1.2.2 Organisational Constraints

Lecturers also report that the organisational constraints such as insufficient LMS tools, low bandwidth, and limited training as influencing the use of the LMS. Firstly, lecturers feel that they are lagging behind with technological growth due to insufficient LMS tools: *"it could help to have all the other platforms and licences like Blackboard collaborate, linking Turnitin to Blackboard and the responders for creating the contacts of questions" (*Venus-SHCS); and *"I feel I'm missing out because I am not using Blackboard at the moment. I feel technology is advancing and I'm not keeping up with it*" (Alice-SHCS). Secondly, lecturers report that low bandwidth speed is an issue. Lorraine (SM) states: "*if we had institutional support based on speed bandwidth, all of those things I mentioned, and training, then we would definitely be able to utilise this tool a lot more*". Lastly, with regard to limited training, Vuyelwa (SST) feels that the poor computer skills in their graduates influenced her decision on the use of LMS: "*it also makes us to produce non-computer literate graduates, and when you go to the workplace they find that most of the things are done online, via specific systems. For example, if you want to apply for leave you do it online; if you want to see your payslip it's from online; if you want, whatever you want to request for funds to attend a workshop or a conference, you apply online, so what's the difference with making use of LMS for education purposes. So, we are actually creating a cohort of graduates who are soon to have a problem*".

### 4.4.1.3 Students

In addition to the significant others that influence lecturers to make use of the LMS, some of the lecturers report that their role is to influence student use rather than be influenced by those around them. Amukelani (SM) states that *"I have to facilitate it, to ensure that the students are also into it, and if I don't then the students won't ... I have to drive it, I need to be on the driving seat and then involve my students".* Furthermore, Venus (SHCS) mentions that "*I told the students in all my modules that I don't care whether you are in first-year, fourth year or third year; you must use Blackboard".*

### 4.4.2 Future Envisaged Use (FEU) in relation to Social Influence (SI)

In order to understand the SI on lecturers' FEU of LMS the three questions (q7 of set 2) *"would you please comment on whether you believe that people (colleagues, organisation, and students) who influence your behaviour think you should or should not use the LMS?";* (q11 of set 2) *"can you detail any positive or negative influences to the university management that you may have experienced due to your use or non-use of LMS?";* and (q13a of set 2) *"between mandatory and optional adoption of LMS at SMU, which one do you think the university should implement?",* were asked.

The lecturers believe that their FEU of LMS will depend on the extent that significant others such as colleagues, organisation, and students believe they should make use of the LMS.

#### 4.4.2.1 Colleagues

It appears that heads of departments' (HODs') attitudes towards the LMS use will influence their colleagues: "*I am the one who is supposed to encourage my colleagues in my department, in this case, as heads of departments, we are the ones who should spearhead this*" (Elias-SST). Lutendo (SST) reports that lecturers' currently making use of the LMSs have not yet played a significant role in influencing colleagues not making use of the LMS: *"maybe my colleagues can influence me to make use of Blackboard...but they haven't tried. They're using it, but they just haven't tried";* while Amukelani (SM) believes that her colleagues are not simply influencing her FEU, but rather they inspire her to make use of the LMS: "*we have a colleague whose actually very far ahead of us with Blackboard and I am very inspired because he is also willing to help and I could see the ease-of-use that he's having...in an actual fact that alone has encouraged all of us, positively to envision to be active users, so not a negative influence but just a mere positive one*". Elias (SST) agrees: "*I think she's a model and her influence is positive, and I want actually to follow in her footsteps*". Amos (SST) states that the use of the LMS must be effective in order to influence FEU: *"if one of us can use the LMS and become effective, I'm telling you, with the numbers that we have, everyone is going to be influenced to make use of Blackboard because everyone wants less workload*". Finally, Amos (SST) feels that the use of the LMS by other departments may also positively influence departments not using the LMS: "*some other departments are using, that may have the influence on others not using*", and Lerato (SST) believes that "*if everyone now starts to use Blackboard then I would use it*".

#### 4.4.2.2 Organisation

The findings relate to the organisational approach as well as the constraints present within the organisation.

#### 4.4.2.2.1 Organisational Approach

Lecturers believe that the organisational approach to adopting the LMS may influence their FEU. Alice (SHCS) feels that a top-down organisational approach will ensure that the lecturers to make use of LMS: "*It must become a requirement that there be no other way around it, as a push we will need from top-down*"; while Ayanda (SM) believes that lecturers must use the LMS as *"the university has made a sizable investment on Blackboard*".

Both Elias (SST) and Amukelani (SM) believe a mandatory approach to LMS is preferable: "*I think I would prefer the mandatory*" (Elias-SST); "*to be honest with you I would rather have it mandatory so that we can standardise everything in the institution*" (Amukelani-SM). Ayanda (SM) agrees that a mandatory approach should be implemented: "*departments need to take that responsibility to equip their staff members to use LMS…also providing the support needed during this period...and then after a while then you can put a mandate to it*". Lerato (SST) and Amos (SST), however, would prefer an optional LMS use approach: "*I prefer this platform where you still have a choice to make*" (Lerato-SST); "*I prefer the freedom…it cannot be mandatory*" (Amos-SST).

#### 4.4.2.2.2 Organisational Constraints

Lecturers believe that non-availability of systems may influence the lecturers' decision about the use of LMS: "*when the system was down...I think that discouraged us from using LMS, and we immediately stopped making use of Blackboard…that was the most negative thing about it, unlike if it was always there available*" (Lerato-SST).

#### 4.4.2.3 Students

Ayanda (SM) reports that she is influenced to make use of the LMS by a student: "*I can see that there's much students can enjoy from LMS and I would be glad to be in that community that experiences that, also with my students, the excitement that I see on my daughter I wish I can instil that in my students to learn to use Blackboard*".

### 4.4.3 Summary of CRU and FEU in relation to Social Influence (SI)

#### 4.4.3.1 CRU in relation to Social Influence (SI)

Some lecturers making use of LMS appear to be either positively or negatively influenced by significant others (colleagues, organisation, and students) towards the decision to make use of LMS. Others have not been influenced in either way, but they influence others. The approach towards the adoption and implementation of the LMS seems to influence the use of LMS by the lecturers. In addition, challenges such as lecturers' lack of technical knowledge, bandwidth inadequacy, limited training, and ill-equipped graduates for an ICT-based society

are reported as influencing the use of LMS. Also, lecturers' attitudes towards the LMS use appear to influence the students' use of LMS.

#### 4.4.3.2 FEU in relation to Social Influence (SI)

Some of the lecturers not making use of the LMS believe that their FEU of the LMS may be influenced by their colleagues who are currently making use of the LMS. Also, as evident in CRU, lecturers not making use of LMS also feel that the approach towards the adoption and implementation of the LMS may influence use. Unavailability of the LMS is also seen as influencing future envisaged LMS use. Lastly, students' attitudes towards the LMS are also reported as influencing FEU.

## 4.5 Facilitating Conditions (FC)

The fourth concept, FC, is "the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system" (Venkatesh et al. 2003, p.453). Within this study, FC addresses whether lecturers perceive that facilitating conditions influence their choice whether to make use of or not make use of the LMS.

### 4.5.1 Current Reported Use (CRU) in relation to Facilitating Conditions (FC)

In order to understand lecturers' CRU of LMS in relation to facilitating conditions the three questions (q10 of set 1) *"can you detail conditions at SMU that you believe would assist you in using the LMS?";* (q11 of set 1) *"can you comment on whether or not you believe that the university has provided sufficient technical infrastructure and support to ensure that LMS is accessible by lecturers?";* and (q12 of set 1) *"have you been trained to make use of LMS? If yes, would you detail the training you have received as well as how this has affected your use of the LMS?",* were asked.

Lecturers mention facilitating conditions such as training, technical support, and technology infrastructure as enablers of greater LMS use.

#### 4.5.1.1 Training

Most lecturers believe that training is an important facilitating condition influencing the use of the LMS: "*all staff members should be trained to make use of Blackboard, and also the students*" (Alice-SHCS). Jacob (SST) concurs: "s*o I think training is a big part".* Even though most of lecturers report receiving appropriate training on the use of LMS: "*yes, I think at the beginning I received a generally good training*" (Mazwi-SM), the original training was given quite a while ago: "*yes, that's quite a while back and in effect I was trained in Blackboard*" (Mazwi-SM). Lecturers believed that refresher courses were needed: "*previously didn't get the benefit of the training so well, because this was very new to me and I didn't grasp all of the*

*things that were discussed...refresher courses would definitely be helpful…so a refresher course…that would be good for me to get up-to-date with this…maybe now there's new features; so I definitely need a refresher course in Blackboard*" (Jacob-SST). However, while refresher courses are helpful, Vuyelwa (SST) feels that they are inadequate: "*at the beginning of the year there should always be a schedule for refresher courses or training for beginners, then staff go and attend. You don't necessarily need to say to ICT; please come, no, it should be there and runs throughout the year*". Lorraine (SM) is the only lecturer using the LMS that has not currently received training.

#### 4.5.1.2 Technical support

Technical support is also mentioned as a key facilitating condition that influences lecturers' use of LMS. Ayanda (SM) reports that "*I know the expert trainer, he is really helpful and wants people to see the potential in Blackboard, and I'm sure he can offer help when there is a need*"; and Venus (SHCS) states that *"we do have support from the e-learning guys"*. Jacob (SST) concurs "*the 'expert trainer' is doing the support, and very well*". While lecturers are aware of the support the organisation is offering, most reported that the support is inadequate: "*well with the human support part of it, I don't think that it is sufficient*" (Mazwi-SM); *"I think we do not have enough support from our ICT…more support is needed*" (Vuyelwa-SST); "*I think the university needs more support people so that they there can be people available to come to your office easily on request* (Alice-SHCS); "*sometimes the ICT trainer is on leave, and then you obviously would not get help on that point in time...maybe he can get an assistant*" (Jacob-SST). Amukelani (SM) feels that "*more support should be readily available to lecturers…and also to students*", while other lecturers felt that support should not only be the responsibility of ICT but everyone: "*I mean support does not necessarily have to come from the e-learning guys and I'm sure each department has one person that likes using Blackboard. So the support just goes beyond the e-learning department to even colleagues, colleague-on-colleague*" (Venus-SHCS). As an alternative, Alice (SHCS) suggests that the use of manuals could enhance an increase in the use of the LMS: "*I think a little a recipe book or cookbook approach with a manual will be very valuable to the staff*".

#### 4.5.1.3 Technology Infrastructure

Lecturers seem to believe that ease of access to the LMS, as well as sufficient technology infrastructure, are vital in facilitating the use of LMS. Some lecturers feel that the university has provided sufficient access as well as infrastructure: "*in terms of technical infrastructure we are there, internet will hop on and off everywhere, but we do have everything that we need to use with LMS"* (Venus-SHCS); "*the infrastructure apart from the online business infrastructure is ok*" (Jacob-SST); "*I think that the university has tried their best providing the infrastructure*

*we have…lecturers have laptops and desktops*" (Alice-SHCS). However, other lecturers believe that access and infrastructure provided is insufficient: "*If students have easy access to Blackboard especially from early in the year when classes start, one would not have to email and re-email to students*" (Venus-SHCS); "*it is a question of not having enough computer labs despite a huge number of the students that we have …we are having plus or minus five computer labs; which may accommodate up to five hundred students*" (Mazwi-SM).

Lecturers report infrastructure stability in relation to internet access as not facilitating LMS use. Vuyelwa (SST) reports that internet access was the main condition to be addressed: "*the conditions are, the difficult internet connectivity … the speed of the internet is not what it should be*" (Mazwi-SM); "*the internet should be working all the time"* (Alice-SHCS). Alice (SHCS) adds that, despite the good intentions of the university, "*I think the university has good intent, and they do have systems in place to make it work",* the internet appears not to be stable: "*I think that was one of the reasons why all attempts to use Blackboard in our discipline have failed…the internet is so volatile*" (Alice-SHCS). Lorraine (SM) concurs: "*Internet is a big problem…Wi-Fi does not cover the whole campus…Facebook and YouTube and all of those things are open for the students all the time despite our limited bandwidth, so we find ourselves struggling to upload documents, accessing or to go on the internet and that obviously influences our Blackboard usage"*.

### 4.5.2 Future Envisaged Use in relation to facilitating conditions for the use of LMS (FC)

In order to understand how lecturers not using the LMS envisage whether FC influence their decision towards the FEU of LMS, three questions (q8 of set 2) *"can you detail conditions at SMU that you believe would assist you in using the LMS?",* (q9 of set 2) *"can you comment on whether you believe or not that the university has provided sufficient technical infrastructure and support to ensure that LMS is accessible by lecturers?",* and (q10 of set 2) *"have you been trained to make use of LMS? If yes, would you detail the training you have received as well as how this has affected your use of the LMS?",* were asked.

Lecturers report that training, technical support, and technical infrastructure are key FC that needed to be addressed in order to increase their FEU of the LMS.

#### 4.5.2.1 Training

Lecturers who were not making use of the LMS reported that training was an important facilitating condition influencing their FEU of the LMS. Some lecturers reported that they envisaged making use of the LMS in future because they had already received training, Ayanda (SM): "*I have attended my initial training, and I am now uploading my stuff into the system preparing for 2018 use*"; (Elias-SST): "*yes I have been trained… I'm going to use it*".

Amukelani (SM) *"I have been trained to use it as a student. I'm currently training to use it as a facilitator*".

Even though many of the lecturers seem to have received training, some reported that had not been sufficient, which could influence the FEU of LMS negatively: "*I have been trained, that's why I'm saying …maybe one day was not enough*" (Lerato-SST); "*I think I have attended about two to three times… and it didn't motivate me to kick-start it*" (Amos-SST). For lecturers who did not receive training, it seems as if the scheduling of training was the issue: "*no, actually, I did not even attend any of his courses…you find that when he schedules his orientation or his courses to teach, you already committed in class or you already have other stuff that you need to deal with instead of going to Blackboard training session*" (Lutendo-SST). Furthermore, the frequency of training sessions was seen as an issue: "*you hear about Blackboard once a year like at the beginning of the year after registration then it becomes quiet; maybe every three months they could remind us about Blackboard*" (Lerato-SST). Amukelani (SM) also proposed that "*more training should be readily available either online or telephonically in case you do get stuck. Also, students should be given that training so that they know how this works, and how they can actually submit their assignments*".

#### 4.5.2.2 Technical support

It appears that most lecturers believe that the lack of technical support staff plays a role in their decision not to make use of the LMS. Ayanda (SM) feels that "*the expert trainer being the only one is a problem...support is very necessary".* Amukelani (SM) concurs: "*we don't have to wait for one person. Right now, the trainer is on leave, and we actually need other people who can actually assist him. This institution is huge, you can't depend on one person who has a certain particular skill, and we need human resources ... a dedicated department for e-learning*". Lutendo (SST) supports this: "*the fact that there's only one LMS trainer on campus is not feasible for him to teach each and every one of us including the students*".

#### 4.5.2.3 Technology infrastructure

Lecturers believe that the current technology infrastructure seems sufficient for LMS use and that the university should not be blamed for non-use: "*I think the university is not to be blamed here*" (Elias-SST); "*I believe most lecturers have laptops now*" (Amukelani-SM); "*I have seen now that there has been a lot of improvement with regard to Blackboard. I mean there were times previously when it wouldn't be working for a while, and if you were online or you are trying to learn, there would be those disturbances*" (Ayanda-SM). With regard to the availability of computers, Amos (SST) envisages that if more computers can be provided, it will encourage greater use of LMS: "*if I remember well, Biology and Physics first-year students use*

*Blackboard for some of their assessments, but it seems as if they have to come in groups because the capacity of the current computer labs seems not sufficient enough…facilities may limit the use of LMS*".

While lecturers believe that infrastructure concerns are being addressed and had improved, issues with internet access need to be addressed, "*most of the time the system is not hundred percent up, and active...and internet connectivity is not always at its optimum*" (Lutendo-SST). Amukelani (SM) feels that the institution should provide for internet access when they worked from home: "*using my own internet for work purpose and they don't even assist me, I think if that can actually also be something that they can look into because they already gave us the laptops".*

### 4.5.3 Summary of CRU and FEU in relation to Facilitating Conditions (FC)

#### 4.5.3.1 CRU in relation to Facilitating Conditions (FC)

Most lecturers using LMS report that they have received training in relation to the LMS, although it was inadequate. Thus, they need frequent refresher courses. Technical support and technical infrastructure are viewed as essential enablers to make use of LMS in teaching and learning, although currently insufficient. Some lecturers propose a departmental support staff approach and a manual to give instructions in using Blackboard. Notwithstanding the lack of infrastructure stability, availability of computers and internet access is seen as areas of concern.

#### 4.5.3.2 FEU in relation to Facilitating Conditions (FC)

Lectures believe that their FEU of the LMS depends on the training they received, but they felt it was not sufficient. Also, lecturers believe that their FEU of the LMS depends on the technical support they will receive in future. While lecturers feel that the university had improved the technology infrastructure, they believe the internet access could still be improved.

## 4.6 Summary of the chapter

This chapter presented the study's findings and the analysis of the interview data collected. The chosen conceptual framework, UTAUT, was used to categorise data from the interviews. The process taken for data analysis, in which content analysis was used to analyse each concept, PE, EE, SI, and FC, was also outlined. The key findings are discussed in the next chapter.

# CHAPTER 5: DISCUSSION OF FINDINGS

The study investigated the factors influencing lecturers' decisions in relation to using or not using the LMS, with the aim of answering the main research question *what are underlying reasons for SMU lecturers' decisions on whether or not to make use of the LMS?* In this chapter, key findings and the implications thereof are presented in conjunction with the conceptual framework, UTAUT and literature reviewed.

## 5.1 Performance Expectancy

Mlitwa (2006) defines an LMS as a software application intended for the administration, documentation, tracking, reporting, and delivery of educational or training programmes which provides students with the ability of anytime-anywhere learning. Key findings for PE in relation to CRU of the LMS are increased and varied forms of communication, ability to upload content, anytime-anywhere teaching and learning, monitoring of students, and ease of assessment. For FEU, in addition to benefits mentioned for CRU, findings suggest that the ability to manage large classes and student management of learning are future envisaged benefits. Notwithstanding the benefits, constraints to LMS use are students not being receptive to using the LMS and a lack of resources.

### 5.1.1 Communication

Adzharuddin and Ling (2013) posit that the LMS is a tool that enables increased and varied forms of communication and interaction between students and lecturers. Govender and Govender (2014) concur that the LMS enables ease of communication among students and lecturers. In this study findings, CRU confirms that lecturers increasingly communicate with students outside classroom: "*I can communicate with my students all the time"* (Vuyelwa-SST); as well as use varied forms of communication: "*we could just chat using the discussion panels, the blogs and all of that*" (Venus-SHCS). FEU findings indicate LMS use will improve communication as "*the students can also access it on their mobile phones"* (Amukelani-SM) and *"you can interact with your students on a constant basis*" (Ayanda-SM).

### 5.1.2 Uploading Content

Kabarungi, Musiimenta, and Atuhe (2016) claim that the ability to upload content on the LMS can improve teaching performance as this provides an easier way to share learning content with students. Using the LMS provides lecturers with a facility to prepare and deliver learning content to their students (Adzharuddin & Ling 2013). The findings for lecturers' CRU confirms the literature because uploading content for students in different formats improves performance "*I can upload the lectures either in lecturer format, PowerPoint or pdf*" (Lorraine-

SM). For FEU, lecturers believe that using the LMS will improve the way they will share learning material with their students "*if I had, I would use Blackboard to upload the notes for them"* (Lerato-SST).

### 5.1.3 Anytime-Anywhere

Several authors, Asiri, Mahmud, Abu-Bakar, and Ayub (2012), Kleinveldt, Schutte, and Stilwell (2016), Ngandu (2015) and Phahlane and Kekwaletswe (2012), suggest that one of the benefits of using LMS in pedagogical practices is giving students an opportunity to access and revise learning material anytime-anywhere. Bagarukayo and Kalema (2015) and Hsu (2012) suggest that learning content available through LMS not only enables students to retrieve, read and revise material anytime-anywhere but also facilitates lecturers posting lecturers online for students to make use of when convenient. CRU findings confirm that both students and lecturers are able to access the learning material anytime-anywhere, which gives them flexibility of travelling to and from the classroom and thus saves time and costs *"I can teach them in a different ways as opposed to being in class …"* (Venus-SHCS). For FEU, lecturers also believe that anytime-anywhere access to learning material and lectures has the potential to improve their teaching performance "*I can be in contact with the students even when I'm on a holiday*" (Amukelani-SM).

### 5.1.4 Monitoring

The use of the LMS, according to Ngandu (2015), Adzharuddin and Ling (2013) and de Oliveira, Cunha, and de Almeida (2016) enables lecturers to track, monitor as well as evaluate student performance in their learning activities. The CRU findings confirm that with the LMS lecturers can intervene and manage student's performance *"I can now give general feedback online*" (Vuyelwa-SST). For FEU, some lecturers believe that their envisaged use of the LMS will enable monitoring of student participation "*it also shows you the time the student have logged in"* as well as the ability to verify the authenticity of the student's work "*I can check on whether a group of students have been using or answering the test at the same time or it was an individual effort"* (Mazwi-SM).

### 5.1.5 Assessment

According to Singh and Villiers (n.d.), the LMS enables quick and easy distribution of online assessment to large classes as well as interpretation of results. Pillay, Bozalek, and Wood (2015) claim that assessment through LMS enables lecturers to give as many assessment opportunities as possible, and also using different approaches towards their learning. Findings for CRU confirm assessment processes becomes easier when done online as *"it makes assessment much easier*" (Mazwi-SM), and more varied "a*ssessments can be done using*

*multiple choice questions, short questions, true/false, even sometimes discussions type of questions"* (Mazwi-SM). In addition, the findings confirm that the interpretation of marks by lecturers has improved "we can *review even assignments on Blackboard and also discuss questions with low marks"* (Vuyelwa-SST). Findings for FEU suggest that lecturers believe that future use of the LMS would make assessment easier to manage *"via Blackboard I would be able to set online assignments and tests putting all needed restrictions…"* (Lutendo-SST) and frequency of assessment will increase as "*I'm to give as much assessments as possible using multiple choice type questions to my large classes because the marking is instant"* (Elias-SST).

### 5.1.6 Additional FEU benefits

For lecturers not currently making use of the LMS the ability of the LMS to assist in the management of large classes and student management of learning are viewed as future envisaged benefits.

#### 5.1.6.1 Large Classes

According to Singh and de Villiers (n.d., p.179) the LMS "provides a better management of large classes". Large classes claim Bagarukayo and Kalema (2015) are managed better with the use of LMS, resulting in students accessing learning material irrespective of location. Findings from the study concur "*if I had Blackboard, I would manage my large class easier"* (Lerato-SST).

#### 5.1.6.2 Student Management of Learning

According to Rahman, Ghazali, and Ismail (2011, p.75), the LMS also provides to its users, which may include students, "an integrated platform for…management of learning". Blackboard with embedded librarianship (Kleinveldt et al. 2016) resulted in students learning more easily. Findings from the study show that lecturers believe that LMS use will promote independent learning and self-study "*promotes independent learning and self-study*" (Amukelani-SM) which may result in the management of their learning: "*it will improve the management of their learning better*" (Ayanda-SM).

### 5.1.7 Challenges

Despite performance benefits reported when using the LMS, some lecturers believe that student resistance to the LMS and a shortage of resources and lack of access hinders effective use of LMS. Findings indicate that students are resisting the adoption of the LMS *"my students never use it"* (Alice-SHCS). Mtebe (2015) claims that many students are reluctant to change from the traditional system to ICT integrated systems.

In relation to a shortage of resources Ngandu (2015, p.50) claims that for LMS to be used effectively there needs to "readiness with respect to time, skill and infrastructure". Lecturers in this study confirm that there is shortage of resources: "*students do not get access to Blackboard*" (Alice-SHCS), *"sometimes the network is not there"* (Lerato-SST).

## 5.2 Effort Expectancy

Hsu (2012) and Thomas, Singh, and Gaffar (2013) defines EE as the degree of ease related with the use of the tool or technologies. Key findings for EE in relation to CRU of the LMS indicate that learning processes, which include training and refresher training courses; technical support; and frequency and extent of LMS tool usage influence effort required. For FEU, the findings suggest that varied levels of effort are envisaged by lecturers. Challenges associated with the FEU of LMS are extra work required, limited skills and access to the LMS.

### 5.2.1 Learning Process: Training and Refresher Courses

According to Lwoga and Komba (2015), effective use of the LMS requires lecturers be properly trained. Mtebe (2015) adds that not only do lecturers need to be trained but also students should be trained to ensure the continuity of LMS use. In this study CRU findings indicate that some lecturers received trained on LMS: "*I've done a course in Blackboard"* (Jacob-SST).

Olson, Codde, DeMaagd, Tarkleson, Sinclair, Yook and Egidio (2011, p.31) recommend that training should be repeated because "development happens over time". CRU findings confirm that refresher training courses are needed for effective and continuos use of LMS: *"a refresher course would definitely help me*" (Jacob-SST).

### 5.2.2 Technical support

Adzharuddin and Ling (2013) suggest that both lecturers and students should always be provided with technical support to ensure ease-of-use of the LMS. From the CRU findings lecturers attest that technical support is beneficial: "*the Blackboard trainer helped me upload learning material*" (Alice-SHCS). For FEU, lecturers indicate that more support is needed "*more support should be readily available to lecturers…and also to students*" (Amukelani-SM).

### 5.2.3 Use of LMS Tools

#### 5.2.3.1 Frequency of Use

According to de Olivier, Cunha, and Nakayama (2016), LMS tools are used by lecturers in varying levels of frequency. Key CRU findings indicate that lectures are using the LMS tools with different frequencies: "*I use it for everything that I need to do for the module"* (Venus-SHCS); "*for two years I've put all my study material on Blackboard"* (Alice-SHCS); *"I upload*

*twice a week"* (Lorraine-SM); and "*I've used it once or twice a year over the past couple of years…"* (Jacob-SST).

#### 5.2.3.2 Extent of Use

##### 5.2.3.2.1 OCC and OCS

Lwoga (2014, p.15) claims that "if students perceive the e-learning system has accurate, updated, reliable, readable and well-formatted course contents, they will find the online courses more useful for their learning processes". According to Ssekakubo, Suleman, and Marsden (2012), the LMS tool used the most is the uploading of course resources and outlines. The study findings confirm that lecturers used OCC and OCS tools more than the rest to prepare learning material and upload it on Blackboard through LMS tools "*I've put all my study material on Blackboard*" (Alice-SHCS). These tools have been found easy to use by lecturers, *"OCC and OCS are easy to use…"* (Lorraine-SM).

##### 5.2.3.2.2 ST, ADMT, and CSL

According to Ninoriya, Chawan and Meshram (2011, p.646) LMSs were developed to track "registration, attendance class lists, grades, test results, class scheduling, other administrative requirements of schools and instructor-led classes". Within this study, lecturers confirm that they are using the ST, ADMT, and CSL for administrative purposes. ST is being used to provide online feedback as well as to monitor students' access to learning material: "*I use ST to give essay feedback online"* (Vuyelwa-SST), and *"I am able to monitor performance students that accessed the quiz"* (Mazwi-SM). Lecturers report that ADMT of LMS is used for announcements: *"I use Blackborad to give announcements to the students*" (Vuyelwa-SST), while the CSL tool is being used to facilitate communication between students and lecturers: "*I use CSL to give the scope for assessment guidelines on Blackboard"* (Vuyelwa-SST).

#### 5.2.3.3 Effort Required

Chibaro (2015), Kabarungi et al. (2016) and Mudaly (2012) claim that lecturers without a computing background, find using the LMS challenging. Key FEU findings confirm that lecturers with some computer background envisage that future LMS use will require little effort: *"I don't think it will be a lot, I just need familiarising myself with Blackboard"* (Lutendo-SST).

Hsu (2012) argues that the ease-of-use of the LMS affects effort required to make use of the LMS for both students and lecturers. Findings confirm that lecturers consider ease-of-use of the system to determine the amount of effort required. Amos (SST) reports that they consider the effort required: "*unfortunately it is not user-friendly for us, which is why none of us has ever used it especially for certain assessments*".

#### 5.2.3.4 Challenges

Govender and Govender (2014) and Ngandu (2015) claim that training to use the LMS usually consumes more time in learning the technology than preparing the course material. The findings from this study concur as lecturers indicate that: "*the files that I have to upload are fairly big, and they take time to be uploaded"* (Jacob-SST). Olson et al. (2011) argue that lecturers will resist LMS integration into pedagogical practices when it requires more time to prepare. Findings confirm that lecturers believe that using the LMS creates extra work for them and may influence lecturers' decisions in relation to LMS use: *"I feel I'm doing the job twice because I can't publsih marks online, so I print and paste them on notice board"* (Vuyelwa-SST). While Liu (2013) claims that LMS usage reduces workload, the findings of this study did not confirm this.

Limited internet access is also reported as influencing the amount of effort required to make use of the LMS. Mudaly (2012) claim that there are challenges with access to Blackboard usually at the beginning of the year as internet access is limited during university holidays and only when universities reopen can everything be set up for the year. Lecturers in this study confirm that students struggle with Blackboard access early in the year: "*At the beginning of the year there are students that say they can't access Blackboard*" Alice (SHCS).

According to Ninoriya et al. (2011, p.646) only the administrator "maintain the registration and rights of users". Findings confirm that lack of access rights is a challenge for lecturers, as "*if I had the ability to upload myself as a viewer in order to see the student view, because at the moment, I only an administrator, not a user*"(Lorraine-SM).

## 5.3 Social Influence

Mudaly (2012, p.91) claims that "social influences play an important role in determining acceptance of the LMS". According to Govender and Govender (2014), most lecturers are influenced by the significant others around them when deciding to make use of LMS as they do not want to lag behind. Key CRU and FEU findings confirm that most of the lecturers have been or may be influenced by significant others towards the use of LMS, while few others report not to have been influenced by others but rather are influencing others.

### 5.3.1 Colleagues

Govender and Govender (2014) claim that how lecturers feel the significant people within the social context will view them, influences their decisions in relation to LMS use. Furthermore, Bosnić, Orlić, and Žagar (2010) suggest that lecturers should be at the forefront of LMS use so that they can influence students to be active users of LMS. In this study, CRU findings confirm that some of the lecturers seem to have been influenced positively by significant

people: *"generally there is a positive influence towards Blackboard from other lecturers*" (Jacob-SST). However, others report that their colleagues have influenced them negatively, "*based on her experiences we know that assessments doesn't work* " (Lorraine-SM).

For FEU, finding indicate that some lecturers believe they have not yet been influenced by their colleagues: "*maybe my colleagues who are using it may influence me, but they haven't tried*" (Lutendo-SST). Others report that their colleagues' use has inspired them about FEU: "*I think she's a model and the influence is positive, and I want actually to follow on her footsteps*" (Elias-SST).

Mudaly (2012) claims that while some lecturers are being influenced by significant others to make use of the LMS, others are choosing to make use of the LMS simply because they believe it enhances their pedagogical practices. Key findings for CRU lecturers confirm that rather than being influenced by significant others in the social context, some lecturers believe that they should be the ones influencing others to make use of the LMS as they hold positions of leadership: "*as heads of department I am the one who is supposed to encourage my colleagues*" (Elias-SST).

### 5.3.2 Organisation

#### 5.3.2.1 Organisational Approach

Lwoga and Komba (2015) and Chibaro (2015) state that in order for the use of the LMS to be effective for sharing learning material with students, posting assignments and giving feedback, mandatory use by both lecturers and students is required. Key CRU findings indicate different views, as some lecturers: *"would prefer it to be mandatory*" (Vuyelwa-SST), others believe that LMS use: "*should remain optional"* Jacob (SST), and some are still undecided: "*Yes and no*" (Lorraine-SST). For FEU, some lecturers indicate that a top-down approach is needed to enforce LMS use: "*It must become a requirement from top-down*" (Alice-SHCS); while other FEU lecturers prefer a mandatory setup "*I would prefer the mandatory*" (Elias-SST); others would prefer to have it optional "*I prefer this platform where you still have a choice*" (Lerato-SST). In order to facilitate increased LMS use amongst lecturers, a process of transition would be beneficial "*departments need to be supported within a certain period while learning to use Blackboard and thereafter a system be mandatory*" (Ayanda-SM)

In addition, Donaldson (2011) argues that students and lecturers should accept and appreciate the value of the expensively implemented LMS. Otherwise, little Return on Investment may be realised by the university (Lwoga 2014). In relation to the university investment, FEU findings confirm that lecturers acknowledge the university's investment in this regard: "*the university has made a sizable investment on Blackboard" (*Ayanda-SM).

#### 5.3.2.2 Organisational Constraints

According to Bagarukayo and Kalema (2015), lecturers may lag behind due to non-use of the system which may be as a result of slow network connections due to low bandwidth (Chibaro 2015). Key findings for CRU lecturers indicate that they are lagging behind with regard to technological growth: *"technology is advancing and I'm not keeping up with it*" (Alice-SHCS). One reason for this lagging behind given by some lecturers is the low bandwidth: "*if we had institutional support in terms of high bandwidth speed, we would be able to utilise this tool a lot more*" (Lorraine-SM).

Olson et al. (2011) maintain that when students are better equipped with information and communications technology skills, they are able to contribute to the knowledge-centred globalised economy of their counties. Findings indicate that due to ineffective use of LMS by students, the university find itself producing graduates who are not well empowered with technology skills: "*it also makes us produce non-computer literate graduates who struggle when they go to workplaces*" (Vuyelwa-SST).

The lack of LMS availability, according to Alharbi and Drew (2014), may influence the use of LMS negatively. Nair and Patil (2012) state that the availability of LMS increases the use. For FEU, lecturers confirm that the systems' non-availability influenced their' decision towards the use of LMS negatively: "*when Blackboard was down, we immediately stopped using it*" (Lerato-SST).

### 5.3.3 Students

Asiri et al. (2012) find that lecturers that display a positive attitude towards LMS and also possess knowledge and skills in relation to LMS are more likely to make use of the LMS than those with negative attitudes. Lecturers' attitudes towards student use of the LMS, according to Lwoga (2014, p.17), have "a significant association with the perceived usefulness and user satisfaction". Findings for CRU indicate that lecturers' attitudes towards the use of LMS in pedagogical practices are viewed as important: "*I have to facilitate it in order to ensure that the students also use it*" (Amukelani-SM).

According to Chibaro (2015), it is not only lecturers that influence students to use LMS but also students' attitudes towards LMS use influence lecturers to make use of the LMS. Findings confirm that students may influence lecturers, "*I can see that there's much students can enjoy from LMS*" (Ayanda-SM).

## 5.4 Facilitating Conditions

Maina and Nzuki (2015, p.246) claim that “low use of LMS is attributable to FC and facilities”. Therefore, Chibaro (2015) argues that institutions should show that their FC can support the use of LMS. Key findings for FC in relation to CRU and FEU of the LMS are training, technical support and technical infrastructure.

### 5.4.1 Training

According to Govender and Govender (2014), universities need to ensure that training programmes are in place to empower their lecturers to make use of the LMS efficiently and effectively. Bagarukayo and Kalema (2015) claim that the lecturer’s technological competence and skills influence decisions in relation to LMS use. Key findings for CRU confirm that lecturers regard training as a crucial in influencing their use of the LMS: “*all staff members should be trained to make use of Blackboard, and also the students*” (Alice-SHCS). For FEU, lecturers also indicate that training is important: “*yes I have been trained…I'm going to use it*” (Elias-SST).

Kabarungi et al. (2016) suggest that once-off training is not sufficient but rather universities should provide routine training to refresh skills and knowledge. CRU findings concur: “*previously I didn't get the benefit of the training so well because this was very new to me and I didn't grasp all of the things that were discussed...refresher courses would definitely be helpful*” (Jacob-SST), and “*at the beginning of the year there should always be a schedule for refresher courses or training for beginners, and then staff go and attend”* (Vuyelwa-SST). For FEU, lecturers indicated that the training they received was not sufficient to start using LMS: “*I have been trained for one day and that was not enough for me to start using the system*” (Lerato-SST). Thus, they also propose that refresher courses be run for both lecturers and students: “*you hear about Blackboard once a year like beginning of the year after registration then it becomes quiet, maybe every three months they could remind us about Blackboard*” (Lerato-SST); “*training should also be given students*” (Amukelani-SM).

### 5.4.2 Technical support

Asiri et al. (2012) claim that the availability of technical support encourages lecturers to make use of LMS. According to Kabarungi et al. (2016), for effective and efficient use of LMS, universities need to provide efficient and continuous technical support to lecturers and students. CRU findings confirm that some of the lecturers believe that the technical support the receive is sufficient: “*the expert trainer is helpful and wants people to see the potential in Blackboard, and I'm sure he can offer help when there is a need*” (Ayanda-SM). While other lecturers indicate that the technical support offered is inadequate: “*I don't think that the support*

*is sufficient*" (Mazwi-SM. For FEU, the findings also confirm that some lecturers believe that the lack of technical support staff plays a role in their decision not to make use of the LMS "*the expert trainer being the only one is a problem as support is very necessary* (Ayanda-SM). While many lecturers believe that the ICT division should do technical support, this may not be the only avenue "*support does not necessarily have to come from the e-learning guys always" (*Venus-SHCS). Alternatives could be *"colleague-on-colleague*"; the use of manuals: "*I think a little a receipt book or cook-book approach with a manual; will be very valuable to the staff*" (Alice-SHCS).

### 5.4.3 Technical infrastructure

According to Lwoga and Komba (2015), poor university infrastructure and resources may result in lecturers being discouraged to make use of the LMS, while sufficient infrastructure and resources will motivate lecturers. Findings for CRU indicate lecturers believe that sufficient technology infrastructure is in place at the university: "*in terms of technical infrastructure we are there"* (Venus-SHCS); "*lecturers have desktops with others also having laptops*" (Alice-SHCS). For FEU, lecturers indicate that resources have been provided to enable LMS usage: *"I believe most lecturers have laptops now"* (Amukelani-SM) and that the technology infrastructure has improved so facilitate LMS usage: "*I have seen now that there has been a lot of improvement with regard to Blackboard*" (Ayanda-SM).

### 5.4.4 Challenges

Notwithstanding the positive FC mentioned by lecturers, infrastructure instability in relation to internet access is reported as a challenge. Chibaro (2015) claims that when the internet connection is very slow, it leads to non-use of LMS because lectures and students cannot login. Findings for CRU indicate that lecturers experience difficulties with internet connection on campus despite the good intentions of the university: "*the internet is so volatile*…*it should be working all the time"* (Alice-SHCS). FEU lecturers concur that the unreliability of the internet influences their use of LMS: "*most of time the system is not hundred percent up and active...and Internet connectivity is not always at its optimum*" (Lerato-SST), In addition, lecturers also mention lack of coverage: "*Internet is a big problem…Wi-Fi does not cover the whole campus"* (Lorraine -SM) and speed: "*the speed of the internet is not what it should be*" (Mazwi-SM) as challenges in relation to the use of the LMS.

## 5.5 Summary of the chapter

This chapter discussed the study key findings in conjunction with the conceptual framework, UTAUT and literature reviewed. New literature not covered in chapter 2 that supports the new findings that have emerged from the research study is also presented. These findings will be

used to answer the main research question, related sub-questions and the implications of this study, which are presented in the following chapter.

# CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

This chapter concludes the study by providing a holistically overview of the research findings, by answering the sub-questions and the main research question. The chapter also presents the limitations and contributions of the study both to academia and practitioner. Finally, recommendations, future research in this area and the closing remarks are presented.

## 6.1 Conclusion: Research question, sub-questions, and objectives

While LMSs have been used in teaching and learning for the last two decades (Blackboard Learn 1997), Billman (2014) claims that some lecturers are not yet utilising the LMS to its full potential and thus, benefits are not being realised and changing needs of students are not being met. In order to understand the reasons for lack of LMS use, this study investigated *the motivating and hindering factors that affect the lecturers' decisions towards LMS use and non-use in their pedagogical practices.* The UTAUT (Venkatesh, Morris, Davis & Davis 2003) model, which considers PE, EE, SI, and FC was selected as the conceptual framework for this study. Current Reported Use (CRU) was used to report findings for lecturers making of LMS, while Future Envisioned Use (FEU) was used for those lecturers not making use of LMS.

Conclusions in relation to the sub-questions and the main question that provide insight into lecturers' perceptions of LMS at a South African university are presented below.

### 6.1.1 Sub-question 1: What is the regular practice of SMU lectures in terms of LMS use?

Findings for CRU indicate that lecturers are making use of the LMS for communication, uploading content, anytime-anywhere access, monitoring, and assessment. While lecturers reported that they use Online Content Creation (OCC) and Online Content Storage (OCS) for creation and uploading of learning material which enables content being accessible anytime-anywhere; Student Tracking (ST) is being used by lecturers to give feedback to students in order to assist students with their learning as well as for lecturers to manage large classes; Administration Tools (ADMT) is being used mainly to give announcements; and Communication between Students and Lecturers (CSL) is being used to send out communication on assessment guidelines.

### 6.1.2 Sub-question 2: What are SMU lecturers' perceptions regarding the benefits to be gained by making use of the LMS?

The findings suggest that CRU benefits of the LMS are increased and varied forms of communication, ability to upload content, anytime-anywhere teaching and learning, monitoring of students, and ease of assessment. For FEU, lecturers believe that their future use of the LMS will benefit their job performance in terms of improved student-lecturer communication,

greater ability to upload course content, anytime-anywhere learning and access for students, monitoring students' participation and performance, easier and quick assessment, easier management of large classes, possibility of student's managing their own learning, and easier lecture delivery. Watson and Watson (2007) confirm the findings by stating that LMS is mainly for online learning, learning support, facilitating communication between the students and their lecturers, connecting students with respective courses and tracking their performance.

### 6.1.3 Sub-question 3: What are SMU lecturers' reported challenges or hindrances associated with making use of the LMS?

Findings indicate that lecturers are facing a number of challenges in relation to using the LMS. Firstly, training appears to be an issue, although some lecturers initially received training in the LMS, subsequent training has been infrequent, and refresher courses are lacking. Secondly, lack of technical support, low bandwidth, and insufficient resources are also seen as issues by lecturers. Thirdly, the potential of the LMS to create extra work appears to demotivate lecturer when deciding whether to make use of the LMS. Fourthly, students' resistance to using the LMS is also seen as a challenge for lecturers. Fifthly, negative feedback from colleagues using the LMS is also hindering lecturers' use of the LMS. Finally, the biggest challenge reported by SMU lecturers is the internet instability which discourages use.

### 6.1.4 Sub-question 4: What are the motivating factors that SMU lecturers perceive influence the use of the LMS?

Lecturers using the LMS seem to be influenced positively by their colleagues who are currently using the system and appear to be aware of the benefits. The findings also suggest that organisational approach towards LMS use is important and suggest that making it mandatory may motivate lecturers to make increasing use the LMS. Furthermore, students' willingness to make use of the LMS appears to influence lecturers to make use of LMS.

From CRU findings, lecturers seem to be motivated to continue with LMS use as it provides them with an easier way to communicate and also enables them to share learning content with their students, without boundaries of time or distance. Lecturers also reported that they are able to monitor the progress and participation of their students, and at times, they intervene when they suspect a student is at risk academically. In addition, easier and less time-consuming management of large classes and quicker and easier assessment are reported by lecturers using the LMS to be a major motivator. Furthermore, for lecturers who are involved in the block system, using the LMS facilitates ongoing communication and with students and

delivery of lectures even when students are not on campus. Finally, lecturers believe that the ease-of-use of LMS motivates them to make use of the system.

## 6.2 Assessment of objectives

From the conclusions drawn in each research question above, it appears that this study has achieved its initial objectives:

### 6.2.1 Objective 1: To identify lecturers' underlying reasons in relation to the use or non-use of LMS

In this study, an understanding of the reasons lecturers considers when deciding whether or not to make use of LMS has been provided. Lecturers currently using the LMS appear to realise the benefits of using the LMS as well as have been able to identify the challenges that need to be addressed for optimal use to occur. Similarly, FEU lecturers envisage the benefits of using the LMS and foresee challenges that need to be addressed to facilitate use. Lecturers reported reasons for non-use to be student's resistance towards LMS use, shortage of resources and also the lack of access for both students and lecturers.

### 6.2.2 Objective 2: To understand lecturer's reported use of the LMS

Most CRU lecturers indicated that ease-of-use of LMS tools such as OCC, OCS, ST, ADMT, and CSL (section 6.1.1 above) enable them to facilitate teaching and learning effectively and efficiently. Also, for FEU, some lecturers envisage to make use of LMS because their colleagues are already using the system. In addition, those lecturers who received training on LMS they consider to start implementing what they were taught. Furthermore, knowing that there is technical support available motivates others to consider making use of LMS.

### 6.2.3 Objective 3: To identify the challenges and associated reasons hindering lecturers' use of LMS

Lecturers identified challenges hindering their use of LMS as student resistance to using the LMS, low levels of lectturer's training, lack of refresher courses, extra work required to make effective use of the LMS, current limited infrastructure, lack of resources supporting those using the LMS, low bandwidth, and unstable internet access. Lecturers suggest that the institution should address each of these.

### 6.2.4 Objective 4: To identify the motivating factors and associated reasons influencing lecturers to make use of the LMS

Lecturers indicated that they are motivated to use the LMS because there is an increase in communication with their students, content uploaded is easier through anytime-anywhere access, monitoring of the student's performance is effective and also, assessments are easily

managed to even large classes. It appears that lecturers are influenced to make use LMS by their colleagues who are already familiar and using the system. Also, the mandatory approach the organisation implements in terms of using the LMS motivates lecturers to use the LMS. Furthermore, the positive attitude the students have towards LMS use, motivates lecturers.

## 6.3 Limitations

This study made use of self-reported interviews in order to collect data. While the use of self-reporting method to collect data is advantageous as it provides the researcher with the participants' perspectives (Barker, Pistrang & Eliott 2002), this method may lead to dishonesty, since people are not always truthful (Barker et al. 2002). In the context of this study, lecturers were asked to report on their perceptions towards the use of LMS in their pedagogical practices. Participants may not have provided an accurate view of actual or envisaged use of LMS depending on the reality of the fact only known to themselves.

## 6.4 Contributions of the study

### 6.4.1 Contribution to theory

Venter, van Rensburg, and Davis (2012), state that "future research can focus on the determinants of usage behaviour by means of qualitative research in order to develop a deeper understanding of students' usage behaviour with regard to the LMS" (p.195). This study provides an in-depth understanding of lecturers' perspectives on the use or non-use of LMS in their pedagogical practices. While many research studies focus on students' use, this study focused on the lecturer usage of the LMS using a UTAUT framework (Venkatesh et al. 2003). This study has expanded the existing body of knowledge in relation to LMS usage by lecturers within a tertiary education in a South African context. In addition, the study has made use of an adapted UTAUT model in a qualitative manner which has enabled the constructs to be used not as measures but rather as a language of description in order to understand the underlying reasons for use or non-use of the LMS.

### 6.4.2 Contribution to practitioners

For practitioners in the field of Information Systems, when considering the introduction of new features and improvement of current LMS features, this study provides greater insight into the perceptions of lecturers in relation to the LMS. Currently, LMS features that enable easier communication, uploading of content, anytime-anywhere access, monitoring of students' performance, easier and quick assessment, easier management of large classes, and for students to become independent learners are seen as major benefits for lecturers making use of the LMS. This will assist the practitioners to know which features to maintain in the existing LMS and also to explore on those not frequently used for future development and

maintenance. For the university, the study provides evidence as to how their investment in LMS and vision for technology integration is being realised. Findings indicate that there are significant challenges limiting the use of the LMS that need to be addressed. Possible suggestions from the findings include regular training of the lecturers, provision of stable technical infrastructure and support, and also availability of resources and increased lecturer and student access of LMS. For government and policymakers, the study provides insights into how the LMS is currently being used and sheds light on how e-learning programmes need to be tailored so that they are more suited to the South African tertiary educational context.

## 6.5 Recommendations

Based on the findings, recommendations for lecturers in relation to LMS are: firstly, all lecturers not trained should attend more training and those who attended long time ago attend refresher courses to be prepared for the effective use of LMS; and, lastly, all SMU lecturers should start making use of LMS in their pedagogical practices in phases to gain experience in using the most beneficial LMS tools and be comfortable thereof, e.g. giving announcements and creating and uploading learning material, etc.

Based on the findings, recommendations for the university are: firstly, SMU should increase the number of LMS trainers and sessions so that all lecturers are able to receive training; secondly SMU should initiate and enforce refresher training courses whenever a new feature is introduced in the existing LMS so that lecturers are able to make use of the LMS without considerable effort; thirdly SMU should assign adequate numbers of dedicated LMS support staff according the university structure to assist lecturers with LMS issues; fourthly, in consultation with academics and the ICT directorate a standard method of operation should be devised and communicated to all lecturers so that there is a standard LMS approach at SMU; fifthly, SMU should invest in developing and maintaining a state-of-the-art infrastructure at the university in order to support the LMS, and finally, SMU should consider making LMS usage compulsory for both lecturers and students in order to promote university-wide use.

## 6.6 Recommendations for future research

As this study collected data from only one institution, SMU, future research could carry out a similar study at other universities with the similar non-mandated use of LMS.

To understand whether organisational approach influences lecturers use of the LMS, a comparison between universities where the use of LMS is mandated as well as with universities where the use of LMS is voluntary could be carried out.

A study could be conducted on the different ways in which LMS have been implemented in the South African universities and how these influence lecturers' decisions on the use of LMS.

Finally, a study to understand the effectiveness of LMS in LMS-mandated and LMS-optional institutions using academic research studies could also be beneficial.

### 6.5. Afterword

Due to my lecturing position at SMU, when I embarked on my Masters in Information Systems, as our institution encourages lecturers to make use of Blackboard to improve teaching and learning, I wanted to understand LMS use more deeply. I held strong beliefs that lecturers should adopt and make use of the LMS irrespective of the challenges if any and felt that their choices not to adopt technology were unjustified. During this journey, I have come to understand that lecturers have principled reasons for choices made in relation to LMS use. I, therefore, believe that addressing the identified challenges will enable lecturers to reap the benefits associated with LMS use as well as assist other lecturers and me to make better use of LMS in the future.

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# APPENDICES

## Appendix A: Research Instrument: Interview

*Researcher introduces herself and the research phenomenon.*

### Section A: Demographics, teaching experience with or without LMS

In order for the researcher to get the demographics of the participants, the following questions will be asked, or sometimes the observable may be will be captured without asking:

1. Gender.
2. How old are you? In your 20s, 30s, 40s, 50s, or 60s?
3. Do you use the LMS? If yes, please answer the next question.
4. Which of the following tools of LMS have you used before?
    - o Administration tool
    - o Online content creation
    - o Online content storage
    - o Student tracking
    - o Assessments
    - o Communication between students and lecturers
    - o Peer communication
    - o Shared communities
    - o Interactive educational content

### Section B: Has two sets of questions;

- **Set 1 is lecturers using the LMS and**
- **Set 2 is for those lecturers who are not using the LMS.**

### Set 1: for lecturers who use the LMS

The following questions will be asked in order to collect data in relation to the four concepts adapted from modified UTAUT: PE, EE, SI, and FC; which either describe your current or future envisioned the use of the LMS. The participants will only answer questions that apply to them in terms of LMS use.

5. Can you describe how you think using the LMS has improved your teaching? **(PE)**
6. Can you explain how you have found the process involved in learning to use the LMS? **(EE)**
7. Can you please indicate how often and to what extent have you used the LMS tools? **(EE)**
8. How have you found using the LMS tools listed above? **(EE)**
9. Would you please comment on whether you believe that people (colleagues, organisation, and students) influence whether you should or should not use the LMS? **(SI)**
10. Can you detail any positive or negative influences to the university management that you may have experienced due to your use/non-use of LMS? **(SI)**

11. Between mandatory and optional adoption of LMS at SMU, which one do you think the university should implement? **(SI)**
12. Can you detail conditions at SMU that you believe would assist you in using the LMS? **(FC)**
13. Can you comment on whether or not you believe that the university has provided sufficient technical infrastructure and support to ensure that LMS is accessible by lecturers? **(FC)**
14. Have you been trained to make use of LMS? If yes, would you detail the training you have received as well as how this has affected your use of the LMS? **(FC)**

**General question/s:**

15. How do you envision you will use the LMS in the future? **(FEU)**
16. Is there anything else in relation to the use of LMS you wish to add that I did not cover in the previous questions?

## Set 2: for lecturers who do not use the LMS

The following questions will be asked in order to collect data in relation to the four concepts adapted from modified UTAUT: PE, EE, SI, and FC; which either describe your current or future envisioned use of the LMS. The participants will only answer questions that apply to them in terms of LMS use.

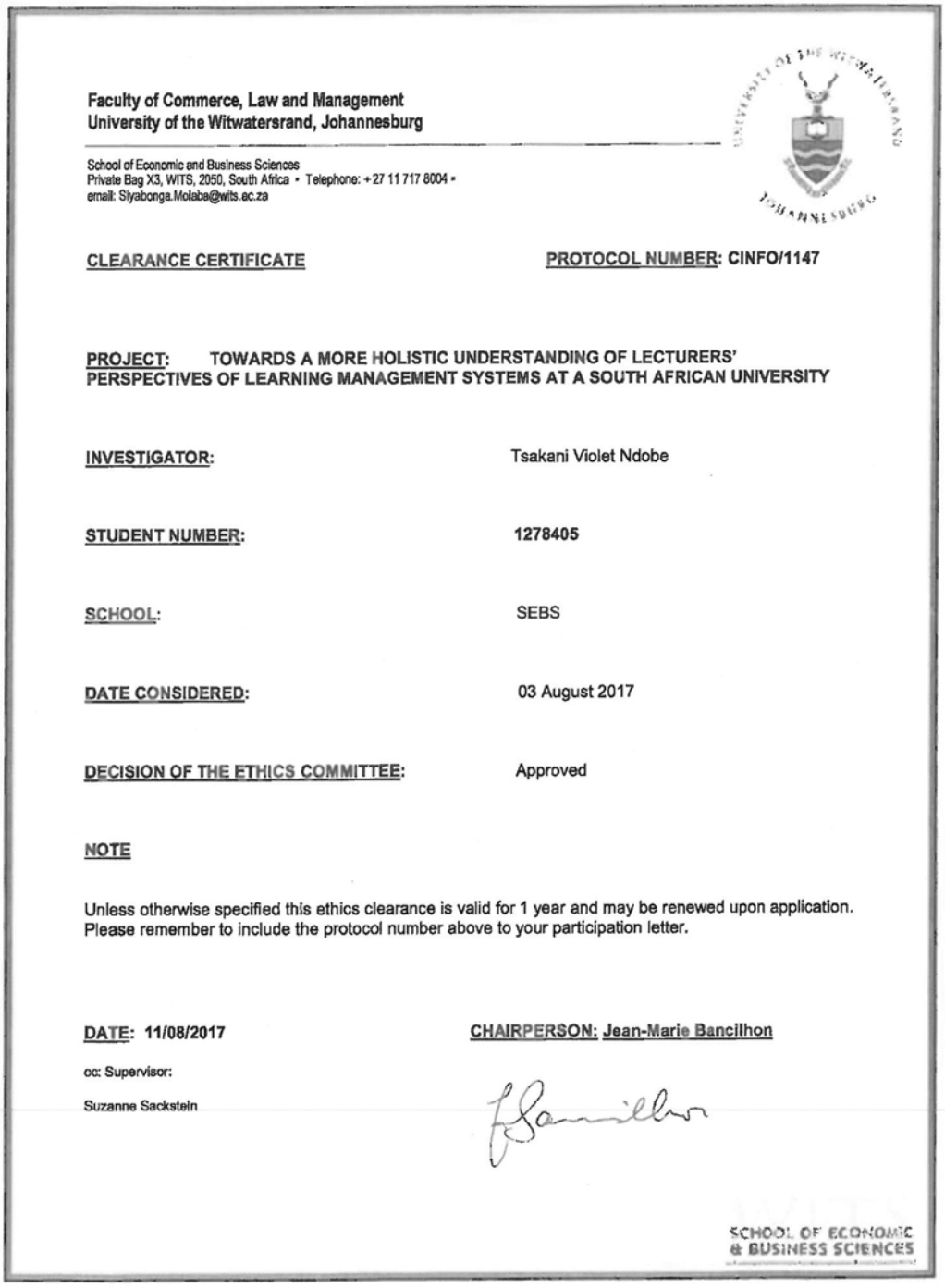
5. Can you describe how you perceive using the LMS will improve your teaching? **(PE)**
6. Can you explain how much effort you think is needed in order to make use the LMS tools? **(EE)**
7. Would you please comment on whether you believe that people (colleagues, organisation, and students) who influence your behaviour think you should or should not use the LMS? **(SI)**
8. Can you detail any positive or negative influences to the university management that you may have experienced due to your use/non-use of LMS? **(SI)**
9. Between mandatory and optional adoption of LMS at SMU, which one do you think the university should implement? **(SI)**
10. Can you detail conditions at SMU that you believe would assist you in using the LMS? **(FC)**
11. Can you comment on whether you believe or not that the university has provided sufficient technical infrastructure and support to ensure that LMS is accessible by lecturers? **(FC)**
12. Have you been trained to make use of LMS? If yes, would you detail the training you have received as well as how this has affected your use of the LMS? **(FC)**

**General question/s:**

13. How do you envision you will be using the LMS in the future? **(FEU)**
14. Is there anything else in relation to the use of LMS you wish to add that I did not cover in the previous questions?

# Appendix B: Ethics Forms

## i. Ethical Clearance Certificate




**Faculty of Commerce, Law and Management**
**University of the Witwatersrand, Johannesburg**

School of Economic and Business Sciences
Private Bag X3, WITS, 2050, South Africa • Telephone: +27 11 717 8004 •
email: Siyabonga.Molabe@wits.ac.za


**CLEARANCE CERTIFICATE** **PROTOCOL NUMBER: CINFO/1147**

**PROJECT: TOWARDS A MORE HOLISTIC UNDERSTANDING OF LECTURERS' PERSPECTIVES OF LEARNING MANAGEMENT SYSTEMS AT A SOUTH AFRICAN UNIVERSITY**

**INVESTIGATOR:** Tsakani Violet Ndobe

**STUDENT NUMBER:** **1278405**

**SCHOOL:** SEBS

**DATE CONSIDERED:** 03 August 2017

**DECISION OF THE ETHICS COMMITTEE:** Approved

**NOTE**

Unless otherwise specified this ethics clearance is valid for 1 year and may be renewed upon application.
Please remember to include the protocol number above to your participation letter.

**DATE: 11/08/2017** **CHAIRPERSON: Jean-Marie Bancilhon**

cc: Supervisor:

Suzanne Sackstein

SCHOOL OF ECONOMIC & BUSINESS SCIENCES

## ii. Permission Letter to Collect Data

Sefako Makgatho Health Sciences University
Research & Postgraduate Studies Directorate
Sefako Makgatho University Research Ethics Committee
(SMUREC)

Molotlegi Street, Ga-Rankuwa 0208
Tel: (012) 521 5617/3698 | fax: (012) 521 3749
Email: lorato.phiri@smu.ac.za
P.O. Box 163 Medunsa 0204

Mrs TV Ndobe
1943 Rosemary Acres
110 Marjoram Avenue
0182

Dear Mrs Ndobe

**RE: LETTER TO REQUEST PERMISSION FOR DATA COLLECTION IN YOUR ORGANISATION**

SMUREC **NOTED** a letter dated 14 August 2017 requesting permission to conduct a study at Sefako Makgatho Health Sciences University (SMU).

SMUREC **NOTED** that the researcher has received approval for the proposal from the University of the Witwatersrand (Wits) Ethics Committee.

| | |
|---|---|
| **Study Title:** | Towards a more holistic understanding of lecturers' perspectives of learning management systems at a South African University |
| **Researcher:** | Mrs TV Ndobe |
| **Supervisor:** | S Sackstein |
| **University:** | Wits, School Economic and Business Sciences |
| **Protocol Number:** | CINFO/1147 |

SMUREC **NOTED** and **GRANTED** the researcher permission to conduct the above mentioned study at SMU

Yours Sincerely,

**PROF C BAKER**
**DEPUTY CHAIRPERSON SMUREC**

07 September 2017

SEFAKO MAKGATHO
HEALTH SCIENCES UNIVERSITY
SMU Research Ethics Committee
Chairperson
Date: 07/09/2017

## iii. Lecturer Information Participation Letter

Date: Sept/Oct 2017

Dear Lecturer,

I, Tsakani Violet Ndobe, am a student from the School of Economic and Business Sciences at the University of the Witwatersrand (Wits). I am currently completing my Master's Degree in Information Systems and presently focused on the utilisation of LMS from a lecturers' perspective. The use of LMS, Blackboard at SMU for teaching and learning practices has presented an opportunity to carry out academic research to investigate **towards a more holistic understanding of lecturers' perspectives of learning management systems at a South African university.** The research holds no preconceived notions as to whether lecturers should or should not use LMS (Blackboard) in their classroom but rather aims to understand reasons and factors that may affect use or non-use of LMS. Aside from its academic value, the study results may inform educational institutions as to lecturers' perspectives regarding LMS utilisation and may also inform professionals about the issues related to technology use from a lecturer's perspective.

As a lecturer at SMU, you are being invited to take part in this research study in order to capture your perspectives about the use or non-use of LMS (Blackboard) as part of your pedagogical practice. Your participation is entirely voluntarily and involves no risk, penalty, or loss of benefits whether or not you choose to participate. You may withdraw from the interview at any time, and you may refuse to answer any question you are not comfortable with during the interview. Your honest answers are important, and there are no right or wrong answers.

If you agree to participate in the interview which will take approximately 1 hour, arrangements will be made for a time and place that is suitable to you. With your permission, the interview will be recorded (and transcribed verbatim), and notes will be taken. No one other than the researcher will have access to the recordings or notes taken. To ensure confidentiality, your name and your personal details will be kept confidential and will not be written on the interview notes and transcripts; code names will be used instead. However, SMU will be identified as the university studied. The recording, the notes, and the findings will be kept until no longer needed for producing publications; after that, they will be destroyed.

There will be no direct benefit to you from the research, but a report back on the research's findings will be made available to you and the institution.

The ethics for conducting this research was approved unconditionally by the Wits University Human Research Ethics Committee (Non-Medical), Protocol Number: CINFO/1147.

Thank you for considering participation. Should you have any questions, or you wish to obtain a copy of the results of the interview, please contact me at 012-521-3672 or 082 478 1851 or email tsakani.ndobe@smu.ac.za or my supervisor Suzanne Sackstein on 011-717-8158 or suzanne.sackstein@wits.ac.za.

Kind regards

Tsakani Violet Ndobe

Computer Science Department

Sefako Makgatho Health Sciences University, Pretoria

## iv. Lecturer Consent Form

## Interview & audio recording

**Title of Project: Towards a more holistic understanding of lecturers' perspectives of learning management systems at a South African university**

**Researcher: Tsakani Violet Ndobe**

I have read the problem and purpose statements of the proposal. To the best of my knowledge, I understood that this study intends to understand the lecturers' perspectives regarding the use and non-use of Blackboard at SMU, and therefore, I volunteer to participate in the study.

As a lecturer at SMU, I understand that I am being invited to take part in an interview. I understand that in agreeing to participate:

- My participation is voluntarily, and I will not be paid for my participation.
- The interview will last approximately 1 hour. Notes will be written during the interview and/or audio taped. I can decline to be recorded.
- I understand that if I feel uncomfortable in any way during the interview, I have the right to decline to answer any question or to leave the interview session.
- I understand that the researcher will not identify me by name in any reports using the information obtained from the interview. My confidentiality as a participant will remain secure. Subsequent uses of recordings and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.
- Administrative and other teaching staff at SMU, besides the researcher, will neither be present during the interview, not have access to fresh notes or transcripts of either the interview. This precaution will prevent any of the findings having personal negative repercussions for me.
- If I choose to be interviewed, I have the right to view and comment on the transcribed interview data before the findings are analysed.
- I have read and understood the participant information sheet provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.
- I have been given a copy of this consent form.

I hereby agree / disagree (circle the applicable option) to participate in the **interview** for this study.

I hereby agree / disagree (circle the applicable option) to the **audio recording of my interview** for this study.

Name _____

Signature _____

Date _____

# Appendix C: Sample Transcription

## i. Lecturers Using LMS (Set 1)

**Pseudonym: Venus**

NB: The highlighted statements were used in chapter 4 for data analysis

**Section A**

Q1. Interviewer noted **Gender**: Female

Q2. Interviewer: *ok thank you so much for availing yourself that I come and interview you.* **How old are you?** In your 20s, 30s, *please do not give me the specific year?*

Interviewee: 30s

Interviewer: Thank you

Q3. Interviewer**: Do you use LMS (Blackboard)? If yes, please answer the next question**

Interviewee: Yes

Q4. Interviewer: **Which of the following tools of LMS have you used before*?***

- Administration tool - No (the students comes ready from the administrators of Blackboard)
- Online content creation - Yes
- Online content storage - Yes
- Student tracking - Yes
- Assessments - Yes
- Communication between students and lecturers - Yes (email, blogs, discussions). The only thing that I have not used here was [pause] but I'm going to use it next year for my research group is the [pause] I can't remember the name, the platform where they get to edit and summarise

Interviewer: blog/no not a blog, wiki

Interviewee: the wikis, yah I will get the research group to use wikis next year

- Peer communication - no
- Shared communities - no (no like I have used Blackboard collaborate at UP but I haven't used it here because there is no Blackboard collaborate in this institution)
- Interactive educational content - Yes

Interviewee: And also with the Assessments, the problem is we also don't have eh [pause] what's that interface? Now I can't think of all those things [laughs] there is that interface where you can create different types of questions and eh, I'll tell you now but when I remember. Eh the respondents, the problem is we don't have respondents here so we can't attempt to create other forms of questions except for the set ones that are on Blackboard/ok. So it becomes a challenge/limited so to say. Yah the tools that we have here, and now that they've also taken out Turnitin and Turnitin as a separate entity on its own it's not linked in Blackboard now. They do have a license but it's not linked/to Blackboard? It's no longer linked this year on to Blackboard, so when I did Turnitin assignments for the students; they had to go and login separately on Turnitin/ah. And I had to go and upload all the assignments. So it was, it's no longer linked but they say they will link it for next year.

Interviewer: So am I right if I say for that process it's now time/it's double, yah has double the work

Interviewee: As opposed to yah/as opposed to; you set the assignment to Blackboard and expect them to go login and again on a separate entity to then submit the assignments; whereas if they had left the link but it's due to the logistics of the divorce/hm and all of that/ok so if they link it back on to Blackboard they need to rework much better.

Interviewer: Ok alright, no I hear you

**Section B**

Q5. Interviewer: Can you describe how you think using the LMS has improved your teaching? (PE)

Interviewee: Well, I guess one of the problems here is the students, **I mean if you tell them they are going to use Blackboard it becomes like seriously you are going to complicate my life**/hm. But at the end of the day they don't realise that it's actually a simpler way of trying to have that interaction and also teaching them in a different way as opposed to being in class/ok. And also with the age of, if they do have a chance of Blackboard collaborate it will also help now seeing that also the basic conditions of the employment has been improved. In terms of, **I can still work from home and still give class from home and have the students sit in their rooms and we have like a tutorial or whatever/ok. At whatever time that's convenient for them**/hm. Eh I mean I do know the benefits of learning management systems is just that the limitations here.

Interviewer: Ok

Interviewee: But I do try, **they do complain because no one has ever used it** but then we encourage .../ok; as much as they do have the passwords, but eventually **when they get used to it then they get to see that there is no need for them to keep on knocking on my door, I mean we could just chat using the discussion panels use the blogs and all of that depending on whatever that we need to communicate**/yes or whatever that I need to clarify for them.

Q6. Interviewer: Can you explain how you have found the process involved in learning to use the LMS? (EE)

Interviewee: Well I'm 30 [laughs] so **it can be such a problem**/ok. Like I'm in my 30s; like anything that has to do with gadgets well bring it...yah/so it's your language/yah [laughs]

Q7. Interviewer: And this is also tapping up to what you have answered on number on the first question but it says;

Can you please indicate how often and to what extent have you used the LMS tools? (EE).

Interviewee: Well, with all my modules/ok. **I use it, for everything that I need to do for the module I do it in class and I still paste it on Blackboard**/hm.

Q8. Interviewer: How have you have found using the LMS tools listed above? (EE)

Interviewee: The students are not very receptive; like I said because I don't think it's consistent across the whole university. There's no consistency so it feels like/oh there is more work

Interviewer: because it's still eh not mandatory

Interviewee: but apart for it being mandatory I mean for us to move towards the tech-era and all those within I mean they expect lecturers to use 'loop' and to put all their modules on to loop it becomes a problem. It's one of those where People are moving out of people's so but if you want to move in that direction and it also I mean there's a whole lot of different platforms that are attached to Blackboard and where students get access to e-books.

Interviewer: Oh yes

Interviewee: But then if you are not going that route [pause] /you are missing out. I mean how can our students are missing out on all this things so they'll still use; we are still stuck on spoon-feeding them/hm and I mean they could go out there, I mean I use it myself as a student at another university

Interviewer: Yes

Interviewee: And like everything just opens up given also the tools that they have. So **we've got limited tools here and platforms**; and then but like I'm saying the consistency/hm throughout the university would actually make it worth-while/yah. Actually **it will also help with motivation of trying to get a Blackboard collaborate and I mean if I can work from home if I'm allowed to work from home can still do the tutoring from home**

Interviewer: Exactly

Interviewee: And like **I could have banks and banks and banks of quizzes/yes for me to be able to give to the students on test or whatever and they could have it in their own time**/yes. Cause for example that I gave them this year instead of me doing quizzes during class time I told them is open for three days; and you only have one chance once you open it you must finish because is a quiz you were supposed to do it in anyway in class.

Interviewer: Ok

Interviewee: **And also the Wi-Fi infrastructure here becomes a problem because it hangs; [pause] and it's on today it's off the internet** I don't know what happens; and there's others that manage to finish if they use their own phones and data but for that rely on the Wi-Fi system here it is on and off at the res. So they come back and we did not finish and now you need to reopen it again for them and they go do it very quickly cause they have done/maybe they've seen it/no you do it ones/ok because it was a bank of questions so tough luck you couldn't do the others, you might get the difficult ones.

Q9. Interviewer: Would you please comment on whether you believe that people (colleagues, family, and friends) influence whether you should or should not use the LMS? (SI)

Interviewee: No, I don't think it …, **I told them for all my modules I don't care whether you are in first year, fourth year or third year; you must use it and, I've said this in our staff meetings and well [pause] why should I be influenced otherwise/ok it's there it needs to be used**

Interviewer: Ok even if other staff members are not using it

Interviewee: I don't care, **one day they will come back/ok for a crash-courses** [laughs] I'm serious

Q10. Interviewer: Can you detail conditions at SMU that you believe would assist you in using the LMS? (FC)

Interviewee: I don't… it's everywhere, it's like giving government officials computers and they are so used to writing [pause] so I don't, people need to see that when you have everything there it makes your life so easy, until such time they realise it makes it easy; and what's the use of [pause] you email the students one-by-one and it keeps on kicking back and now you must re-email again and keeps on coming back and now students must come in and tell you the way that their email was an 'o' not a zero and how the email was not correctly entered so it keeps on kicking back but it's there. **If they've got access to Blackboard it's there you don't have to email and re-email they go and download it you don't know how many times they want. It makes your life easy in terms of communication also with the students; because you also track who opens the emails/yes, who hasn't, if you set it. You track who's been there or who's not been there**. So even they come and they say but I opened I did not go when you full-track shows that it was opened or it was never opened

Interviewer: Yes

Interviewee: You understand so the monitoring system also that comes with Blackboard; people get to understand that you cannot be a police to say how do you prove that an email have been opened/even when you see it

Interviewer: Yes I was about to say that

Interviewee: Because I do cancel it from my side to say don't show them that I've opened it/yes even though I did

Interviewer: Or when you opened it does not mean you have read

Interviewee: Yah I could just open it and close it again so but with this it tracks and all of that...I don't know... [laughs]

Interviewer: is one of those things

Q11. Interviewer: Can you comment on whether or not you believe that the University has provided sufficient technical infrastructure and support to ensure that LMS is accessible by lecturers? (FC)

Interviewee: technical in terms of computers?

Interviewer: Yes

Interviewee: I mean **most of the staff members have a desktop and a laptop** so, you just need to send them an email; **there's always someone on the other side who response very quickly/ok from the e-learning people at this university. So in terms of technical infrastructure we are there, I mean internet will hop on and off everywhere/yah but we do have everything that we need to use with LMS**

Interviewer: Ok, alright. And for support it could be human support

Interviewee: **We do have support from the e-learning guys; I mean it does not necessarily have to come from the e-learning guys and I'm sure each department has one person that likes using Blackboard. So the support just goes beyond the e-learning department to even colleagues, I mean colleague-on-colleague**

Interviewer: Mentoring each other

Interviewee: Yah and helping and supporting each other but I think given I mean given the staff compliment that we have but those guys are always ready to help you with whatever at the e-learning department. In as much as there's not much of them, but they are willing

Q12. Interviewer: Have you been trained to make use of LMS? If yes, would you detail the training you have received as well as how this has affected your use of the LMS? (FC)

Interviewee: Yah **I've trained here and even did that emailing module at UP/ok it was a three-month course like one of those short courses**.

Interviewer: How has affected your use of the LMS?

Interviewee: Initially **I used to use Blackboard as a student and then when I came here I'd use it on the other side the instructor side** but then after the short course I mean I've got to learn about half of those all those other things that you can use either tools that you can use as well as the whole Blackboard collaborate thing and [pause] all the other tools like it was a full e-learning short course

Q13. Interviewer: Can you detail any positive or negative influences to the university management that you may have experienced due to your use/non-use of LMS? (FC)

Interviewee: Like I said um, **we do have the basics but it could help to have all the other platforms**/ok **and licences like Blackboard collaborate, like linking Turnitin to Blackboard** and the responders for creating the contacts of questions. I mean also the fact that I mean you cannot have all this fancy tools and give it an option [pause] why should people be given option

Interviewer: to use or not to use

Interviewee: it feels like ok for Blackboard is a choice that you need to use or not to use it but then for loop it seems like it's compulsory because they want to create this whole curriculum for all the courses that are offered at this university so loop becomes compulsory as opposed to using Blackboard being compulsory too the same way loop is. **So can we then make it compulsory for everyone to use even if just for people to go and stick all their PowerPoint that they use and all the notes that they give to their students via email**/yah. Everyone must just go and put all those things, the same way they want for loop. You must

just put your module up there and then every year needs to be updated as you update so the same thing with Blackboard; can we just go and load our PowerPoint slides and keep them there for the year

Interviewer: Then that's a starting point/everyone

Interviewee: **Everyone must just go and upload/ok; because the first module of the training is building content**/yes, yah and Items and what not; so can everyone now go logon as a lecturer, login and put in their PowerPoint slides; the ones that they share with students

Interviewer: ok, step number one/yah then move on

Interviewee: And for some of us that are advanced then... can we get/the rights all those other tools which are not [laughs] because we have gone beyond that [laughs]

Interviewer: Can we have more please then we can move on

Interviewee: It feels good; like its exams, **I can sit at home and I can do a tutorial from home for those that are interested**/yah; and **I don't have to drive all the way from Johannesburg to come here**, I mean it's so quiet/yah so can we do it

Interviewer: Or sometimes they don't even come

Interviewee: They don't, but its they say its compulsory then they will sit in their rooms and open the laptops/yes; others will go to computer labs/yes; I mean we can even book an e-learning for them to go and have that tutorial for that are interested. It's just that the facilities we have them for training but we don't use them for students most of the times. I mean it will come with time but can we start somewhere

Q14. Interviewer: How do you envision you will use the LMS in the future? (FEU)

Interviewee: **If we have all the other tools then it will be very great**

Interviewer: The sky is the limit

Interviewee: mm [laughs] there's no other way

Q15. Interviewer: Is there anything else in relation to the use of LMS you wish to add that I did not cover in the previous questions?

Interviewee: Like I said **we have to start somewhere**/ok; until such time [pause] eh is just the basic thing is going to be one of those white elephants/mm and it becomes ...some of us who use it its either the necessity of using it/yes but then if something is not compulsory at all then...but we will still use it ....we hope to get more

Interviewer: Ok, no thank you so much for your time and that brings us to the end of the interview

End of Set 1.

## ii. Lecturers not making use of the LMS (Set 2)

**Pseudonym: Lutendo**

NB: The highlighted statements were used in the chapter 4 for data analysis

**Section A**

Q1: Interviewer noted Gender: Female

Q2. Interviewer: OK thank you so much mam for availing yourself for me to interview you on my study. How old are you?

Interviewee: I'm 26.

Interviewer: Actually it's like in your 20s or 30s.

Interviewee: Oh is it?

Interviewer: yes, not the,

Interviewee: Obviously it should be in the brackets 20s [laughs]

Interviewer: We don't want to be specific;

Interviewee: Alright

Interviewer: So you are in your 20s, thank you.

Q3. Interviewer: Do you use LMS? Blackboard, for example?

Interviewee: **I used to; in ... 2014, eh but what happened is, during the phase 2015, 2016 and 2017 every time I was trying to use it, my students were not uploaded on the Blackboard system; so I stopped.**

Interviewer: So currently it's a no?

Interviewee: Yes.

Q4. N/A

Interviewer: Ok, so on that note then I would have to further asks you some questions.

Interviewee: Alright.

**Section B**

Q5. Interviewer: [pause] Ok. Can you describe how you perceive using the Blackboard will improve your teaching?

Interviewee: Yeah considering that I'm teaching first-year**, I think the classes are relatively**

**big and if I had Blackboard as a form of [pause] usage or a form, a platform where I could communicate with the students it would be easier. Eh, also in terms of these minor tests that I...want to give them I can't because I always have to mark them manually, 'whereas' if I had Blackboard I would be able to set online tests which will close at a particular time even with assignments and children would be, would have the liberty to do the work at home instead of being formally in the class to write a particular test or to submit the assignment.**

Q6. Interviewer: Ok, and can you explain for me how much effort you think is needed in order to make use of this LMS tools?

Interviewee: eh maybe let me ask effort in what sense?

Interviewer: From your side, usually at the moment you're going to class you've got maybe slides, you've got your material ready prepared on your computer and you know your print or you send them however you communicate with them, so if you were now to use or you were told from next week we have to use Blackboard for our teaching and learning, what effort do you think will be needed for you to convert from that manual to the use of LMS?

Interviewee: Uh, I don't think it will be a lot, it's just a matter of familiarising myself with the new system.

Interviewer: Ok

Interviewee: of, that is customised to SMU.

Interviewer: OK.

Interviewee: Yah

Q7. Interviewer: Will you please comment on whether you believe that people who are close to you either colleagues' family friends who influence your behaviour think you should or should not use them LMS.

Interviewee: Nooo [laughs] **I don't think any of them would have any type of influence**. I don't think they would I don't even think they know what LMS is.

Interviewer: For example, if it's your staff members?

Interviewee: **Maybe my colleagues**

Interviewer: Yes, they're using it and you not using it, do you think they can influence you to use it?

Interviewee: They haven't tried. **They're using it but they haven't tried** [laughs].

Interviewer: So no pressure there.

Interviewee: No

Interviewer: Ok.

Q8. Interviewer: And can you detail conditions at SMU that you believe would assist you in

using the LMS?

Interviewee: Assist is it only the fact of assist or are they... like... I don't think ok, I don't know how but at this place there are more limitations than assistances

Interviewer: OK

Interviewee: yah

Interviewer: If you can, if I can ask an example or to explain further

Interviewee: Eh, well **most of time the system is not hundred percent up and active**,

Interviewer: Ok

Interviewee: And **internet connectivity is not always at its optimum**. So you find that you as the lecturer is frustrated then what would happen to the student if he you as a lecturer you frustrated about accessing a particular thing. So, sometimes I feel like not using it is also better because if I were to say to set a test online and I put a time frame sometimes these laboratories don't have the internet and the kids would not be able to submit a particular time which will cause me to fail them even though it's not their fault.

Interviewer: OK

Interviewee: Yah

Q9. Interviewer: and that seem to have answered my next question which is saying "Would you comment please on whether you believe or not that the university has provided sufficient technical infrastructure and the Support to ensure that LMS is accessible to the lecturers.

Interviewee: Also, to further answer the question is the fact that **there's only one LMS trainer on the campus which is really [pause] Not feasible for him to teach each and every one of us including the students about the LMS system that we use here**.

Q10. Interviewer: OK I hear you. Wow, "have you been trained to make the use of the LMS?

Interviewee: No actually I was, **I didn't even attend any of his courses but I went**, I familiarise myself with the system when by myself when I used it in 2014. Then recently, I just didn't because it wasn't gonna be useful in any way

Interviewer: So it was self-trained?

Interviewee: Yes

Interviewer: Wow OK that is interesting

Interviewee: [laughs] that's why I'm saying in my previous comment that the fact that there's only one person, you find that when he schedules his or orientation or his courses to teach you he already committed in class or you already have other stuff that you need to deal with instead of going to his courses.

Interviewer: So does this mean you could, if you were to suggest would you say am I right if I say that you would be suggesting that they can increase the number of people/yes who can

have, who can function fully

Interviewee: **that would by highly appreciated because as much as support is needed for the students, support is also needed for the staff members**. And one class or one week class is not necessary enough/true; because if you go for one week training; it doesn't necessarily warrant that you will know something that you will need two or three weeks down the line/ok, do you understand? So if is someone there some people readily available you can call and as per/need arise... exactly

Interviewer: OK.

Interviewee: Instead of just having one big class and he teaches you everything which/you might not need/use...you see so in the coming two months, so, just a basic a course/true to introduce you to the system then then every other thing must be, you call actually... to come and teach whatever it is that you need at that particular time.

Interviewer: OK.

Yah

Interviewer: Now I understand/yah

Q11. Interviewer: Can you detail any positive or negative influences to the university management that you may have experienced due to your use or non-use of the LMS? Any positive or negative consequence?

Interviewee: Eh, I don't, I have a

Interviewer: Was it a threat, was it incentives so to say?

Interviewee: Where management is concerned I don't think it was a threat in any way

Interviewer: OK.

Interviewee: but…yah, No, I think generally, using, using the Blackboard was, much simpler

Interviewer: Ok

Interviewee: In the sense that when you.... Let me speak at this, **where the protection of the university or the management at large is better when you're using the LMS because when we using these emails chances are students will say they don't receive a particular particular**/hm information/hm; but if using LMS the anticipation is that the school of the or the university would have created it an email that the students should use as their own email. Then when you upload any information or students in that particular class registered for the class would receive that information.

Interviewer: Ok

Interviewee: **So I think the implications would be more positive than negative because they are protected by a system that's used within the university**.

Interviewer: Ok

Interviewee: I think I hope I have answered properly [pause]

Interviewer: Nah you have/that is your [laughs]

Interviewee: that it makes sense; that's why I'm saying just hope it makes sense.

Interviewer: it does, it does

Q12. Interviewer: And then do you envision you will be using the LMS in the future?

Interviewee: I hope I can **I really hope I can I think they should, Like the LMS system should be in touch with the with the registration process.**

Interviewer: Ok

Interviewee: so that no student is alienated from it, you see. It doesn't mean because you are a first you should struggle and not get what the 2nd years and 3rd years are getting

Interviewer: OK

Interviewee: **So I am hoping that in the next year that whoever is in charge of this LMS system will make sure that all students are on it; and we will try and prioritise teaching all the lectures how to use it**. Yah, the basic instructions basically so that we all move to it, I think it will be better for the university if we all move to using Blackboard instead of these emails that we always using

Interviewer: so in a way saying that they should try to inforce it [pause]

Interviewee: Yes/gradually, **gradually yes they** should/not; **shouldn't be**

Interviewer: not completely moving over and cutting the other...

Interviewee: No, no, cutting for some people cutting you know when you cut it, it creates a whole lot of fear, if it's a **gradual introduction I think it will be better**.

Interviewer: Ok

Interviewee: Where [pause] yah, a gradual one where they specify a time frame that by this time all the lectures should be using Blackboard. So that people are clematises and get used to it first.

Interviewer: Ok

Q13. Interviewer: Now is there anything else in relation to use of LMS you wish to add that I did not cover in the previous questions.

Interviewee: Eh

Interviewer: From before from you deciding not to use the it and then now experiencing the challenges that you have raised and to you envisioning using it in the future; if you were to think probably I'm not directing you but you will add; think even in the space of your office like your department. If it will bring any light and how would you like to go with it; I'm not directing you but I'm just saying trying to think outside the box anything in any angle that you can think

of [laughs], be it be it yourself be it the departmental the school the university.

Interviewee: [pause] Ok wait now I got lost somewhere in the question [laughs]

Interviewer: Anything that I did not cover

Interviewee: anything that you did not cover?

Interviewer: yes be it in the use of LMS, which you wish to add

Interviewee: ah well, from the questions that I answered I think or that you asked me I think you've covered base.

Interviewer: Ok

Interviewee: On what needs to be discussed about the system that we have here/ok. I think so I hope so but I think so actually… [laughs]

Interviewer" Ok/yes; I'm happy/right, and thank you for, again availing yourself, this was a nice and short interview [laughs]

Interviewee: Thank you [laughs]

Interviewer: And thank you very much, as you have read the documents/yes that the results are anonymous, like I identity is hidden hence I did not even mention your name at once. And if at the end of the results and analysis, and everything, the report will be available on request.

Interviewee: Ah, ok **there's one thing that I like to add or suggest/ok; if it's possible can the results be discussed with ICT from SMU. So that they look at how or the outlook, they receive the outlook of how people perceive the LMS system...**

Interviewer: Ok

Interviewee: **And also to see some of the suggestions that some of your interviewees will have, in terms of how to use it in terms of the availability of it and in terms of how to get workshopped on it or to get courses on it**.

Interviewer: Ok, thank you that's nice suggestion, I will note it

Interviewee: Thank you

Interviewer: And you may enjoy your day further

Interviewee: Thank you so much

End of Set 2.

### iii. A priori coding Template: Codes from the conceptual framework

*Table 6: A priori coding Template: Codes from the conceptual framework*

| Concept | Conceptual Definition | Coding Definition | Codes/Sub-codes |
|---|---|---|---|
| **Performance Expectancy (PE)** | "The degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh et al. 2003, p.447). | PE refers to whether the lecturers think that using the LMS will improve their performance. | Performance Expectancy (PE) |
| **Effort Expectancy (EE)** | "The degree of ease associated with the use of the system" (Venkatesh et al. 2003, p.450). | EE refers to how much effort lecturers believe is needed in order to make effective use of the LMS in their teaching. | Effort Expectancy (EE) |
| **Social Influence (SI)** | "The extent to which an individual perceives that significant others believe he or she should use the new system" (Venkatesh et al. 2003, p.451). | SI refers to the manner in which a lecturer perceives others' influence affects their use of LMS. | Social Influence (SI) |
| **Facilitating Conditions (FC)** | "The degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system" (Venkatesh et al. 2003, p.453). | FC refers to the lecturers' perceptions of the technical infrastructure and support needed to use the LMS. | Facilitating Conditions (FC) |
| **Reasons for Current Reported Use / Future Envisaged Use** | CRU, adapted from behavioural intention to use the system, "refers to people's perception of the ease or difficulty of performing the behaviour of interest" (Ajzen 1991, p.183). | Usage will be referred to CRU and future envisaged use in relation to whether or not lecturers are making use or envisage that they will make use of the LMS in the future. | (CRU/ FEU) |

*Note: Terms CRU and FEU will be used in the report to convey reason for CRU and FEU.*

### iv. Transcript data analysis of 'PE' for Users of LMS (Set 1)

Question 5. Set No.1: Can you describe how you think using the LMS has improved your teaching?

*Table 7: Transcript data analysis of 'PE' for Users of LMS*

| USERS OF LMS | | | | | |
|---|---|---|---|---|---|
| **Alice** | **Venus** | **Jacob** | **Lorraine** | **Vuyelwa** | **Mazwi** |
| Nothing...Unfortunately/if you can, my students never used it, it was one a way direction, one way...They were not responsive, nobody used it, I had to resend it via email...They say they don't get access to Blackboard, it was internet connection and some of them their technology was too old, ...That's what I said/hm they are very old computers/ok alright, the laptops were in a bad shape | Well, I guess one of the problems here is the students, I mean if you tell them they are going to use Blackboard it becomes like seriously you are going to complicate my life/hm. But at the end of the day they don't realise that it's actually a simpler way of trying to have that interaction and also teaching them in a different way as opposed to being in class/ok. And also with the age of, if they do have a chance of Blackboard collaborate it will also help now seeing that also the basic conditions of the employment has been improved. In terms of, I can still work from home and still give class from home and have the students sit in their rooms and we have like a tutorial or whatever/ok. At whatever time that's convenient for them/hm. Eh I mean I do know the benefits of learning management systems is just that the limitations here....But I do try, they do complain because no one has ever used it but then we encourage .../ok; as much as they do have the passwords, but eventually when they get used to it then they get to see that there is no need for them to keep on knocking on my door, I mean we could just chat using the discussion panels use the blogs and all of that depending on whatever that we need to communicate/yes or whatever that I need to clarify for them. | Eh it has enables the students to do revision, and it has enabled me to distribute slides series and photographs to the students | To be completely honest, it makes no difference/mm. Nah if the internet is off I just email them, I've got their emails electronically; and like I said I use Blackboard for communication with the students which I do with emails in any way and sending the lectures. Yes it makes it easy because I can upload the lectures either in lecturer format, PowerPoint or pdf. If I email it to them it's only pdf. That's the only limitation that it brings to me. But like I said Blackboard for me I use it for communication with the students/ok; and not anything else | It has improved because I can communicate with my students, we can review even an assignments on Blackboard, they can actually get feedback from me because after marking say you've marked an essay you can't give individual feedback and because of time you can't also do it in class because you are rushing to finish the syllabus but then my feedback I do it online where I give general feedback; except in situation where I need to speak to a student personally but I can just list where they went wrong wat was supposed to be done what was expected, so I can from if an it's an essay question I can start from interpreting the question why is it that the question required breaking down the question and then looking at what many students did the mistakes they made and what should have been done so the feedback in that way actually helps the students rather than me doing it in class so it saves time... | Ah [pause] I think what is important with the Blackboard is, it make the assessment much easier, and then it also allows you to know which student is a using or exploring the technology or not. And then also eh [pause] another good think about is eh, it also shows you the time the student have logged in more especially when they are writing the test then you can check on whether maybe a group of students have been using eh or answering the test at the same time or it was an individual effort/ok. |

*Note: The highlighted statements were used in chapter 4 for data analysis*

## v. Transcript data analysis of 'PE' for Non-Users of LMS (Set 2)

Question 5. Set No.2: Can you describe how you perceive using the LMS will improve your teaching?

*Table 8: Transcript data analysis of 'PE' for Non-Users of LMS*

| NON-USERS OF LMS | | | | | |
|---|---|---|---|---|---|
| **Lutendo** | **Lerato** | **Elias** | **Amos** | **Ayanda** | **Amukelani** |
| Yeah considering that I'm teaching first-year, I think the classes are relatively big and if I had blackboard as a form of [pause] usage or a form, a platform where I could communicate with the students it would be easier. Eh, also in terms of these minor tests that I...want to give them I can't because I always have to mark them manually, 'whereas' if I had blackboard I would be able to set online tests which will close at a particular time even with assignments and children would be, would have the liberty to do the work at home instead of being formally in the class to write a particular test or to submit the assignment | The problem with Blackboard or why I'm not using it neh is that eh I think I've tried I've attended several courses on it I think twice I went for the training/ok. But it's like it's too much to do and sometimes the network is not there, it's I don't know I just didn't find it user-friendly even getting to it was a hustle/ok then I ended up not using at all. I didn't feel like it improved my teaching in any way. Because even if I had used it, it was just to download the notes like to put the notes there for them/ok, which I still give them/in other means; to the students yah through emails to the class rep which they always say that they have received through the group, I think the group also is taking over from this Blackboard [laughs] but personally I didn't see the significance of Blackboard or how it would improve my teaching | I think it's a very important tool, though I haven't used it, I'm saying this because I've been trained, number one, and at least I've used a similar version before…In North West University we called it Ifundi, and even before there's another University where I've trained and they were using WebCT, they are almost the same/ok/yah. And then ah I think it's very good tool and I think it's convenient, it helps lecturers especially if you have too many students and then it's able to help you give as much assessment as possible and in that way ensure that your students have had you know time to interact with content | Yah I think due to the large number of students we have that could be something else that will really help but because of our course that we are doing is just not simple to do it cause it involves many things structures and what so ever, so it's not easy like you can use unless it's improved somewhere I don't know how but it's one of those things that we treat it difficult but it was possible it was going to make our life easier, cause now our numbers have increased and that's how I feel I know Blackboard they taught us, I know how to use but is just not easy...Yes it is the structure of our course that makes it difficult...Yah plus our things is more of an applications and everything so is not just like a multiple choice like where is easy for the other courses person but we use so many things structures and applications and whatsoever everything so for us to develop a multiple choice for the course I don't think our students would be able to love the course. So I'm saying in our case if we had it if was possible like be able to upload our things in the structures and everything, it was just going to be possible... So that is why I'm saying and I'm telling you it was going to be so fruitful, and even our workload it will be reduced/ok. Imagine me having to mark 280 students scripts/for one assessment/yes, and you can imagine like our questions is more application and we need students to you know give their input, we want our students to explain to apply, imagine if you to read two hundred and eighty something, I mean really honestly speaking is just not easy/ok | Shooo, look I've just registered/ok, and I'm now busy still with loading the stuff, my stuff on it. Eh we know that these days technology is the thing; these students are so inclined to their cell phones their computers. So it will be better to get you know things on something that they already are interested in and its accessible I think. So for that but beyond that I've seen the little that I have seen I think once I get into Blackboard and become a user, I think there will be more that I find out that it can do but the little that I have seen so far really holds promise for the kind of education that we want to have you know moving forward. So it's got a lot of functions that you can use and especially the fact that you can interact with your students on a constant basis I think that for me is critical. Especially given that our students the structure of the programme it's got it's on a block system where they go on a clinical placement for a period of time and I mean they are back on campus for a period of time. So that time of absence sometimes you find students turn to relax, so if you are on Blackboard you can actually be able to interact/and track/yes and the fact that you can see who is participating or who is not communicating; it going to improve even the management of their learning better. So as far as I have seen it holds promise. | Well I think to be honest it will facilitate the workload, it will improve ease of lecture delivery so and the students will be able to work remotely and it will promote independent learning self-study and things like that. And it's easier communication because the students can also access it on their mobile phones and there's Wi-Fi on the campus, and for me it's just is a tool that I know the students will follow as opposed to say, go the library do this and that cause technology has evolved so when you say I have posted this on Blackboard please go look at it and there's a link of this particular article it's easier for the students to follow that ...Yes, it's, I mean they are on internet all the time they use technology they have internet access there's no excuse that they have to buy data because on the campus there is Wi-Fi. So for me I found it easier even not with Blackboard as such but for them when we do lectures and I would say eh let's look at this particular article check it on your phones it's quite easy but even when you give them a task to say eh I've posted this discussion eh can we please have a your inputs and also for me to also monitor if they are taking part which is quite good and efficient...Because I used it at UP as a student |

*Note: The highlighted statements were used in chapter 4 for data analysis*

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## Appendix D –Turnitin Report

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