



**The Perceptions of Changes in Teaching Practices due to the
Deployment of Virtual Learning Environment Systems in Saudi
Higher Education Institutions from Teaching Academics
Perspective**

**A Thesis Submitted in Partial Fulfilment of the Requirement
for the Degree of Doctor of Philosophy**

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Abstract

Virtual Learning Environment (VLE) systems are among the most deployed e-learning solutions in Higher Education Institutions (HEIs). VLEs are seen as computer-based systems that assess learners' and educators' learning and teaching processes. VLEs in this study are considered systems that complement traditional face-to-face teaching in HEIs. Students and teaching academics are the main users of VLEs. Teaching academics are considered system administrators and users. They create courses and manage them for students to utilize.

This study investigated the perceptions of changes in teaching practices resulting from the deployment of VLE systems in Saudi HEIs from teaching academics' perspectives. The study aimed to explore how teaching academics interact with the system in an attempt to answer this research question: What are the perceptions of academics regarding possible changes in teaching practices resulting from the deployment of VLE at Saudi HEI?

The study adopted an interpretive case study approach. The methodology chosen for the research was qualitative and the data was collected through conducting a series of semi-structured interviews. A total of 21 interviews were conducted and their transcripts were the major source of empirical data for the study. The chosen research context was Omega College, a private women-only HEI in the city of Jeddah, Saudi Arabia.

Applying thematic analysis, it was found that changes in teaching practices had actually occurred in the research context. Several changes in practices were identified and these were found to have been directly influenced by several factors that emerged from the empirical data.

Identified changes in practices were changes in teaching styles and strategies, changes in relationships with students, active involvement with VLE implementation and exploitation and active involvement with other ICTs.

These changes were directly influenced by identified change factors, such as perceived benefits, institutional support, institutional aims & pressures, pressure from the digital generation, perceived challenges and perceived barriers.

The relationship between factors of change and actual changes in teaching practices was presented in a model, which denotes one of the main theoretical contributions of the study to the existing body of knowledge. The study also discovered new forms of use of VLEs, such as the use of the system to hold students accountable and the use of the system during crises to avoid learning disruption.

Study findings also informed different stakeholders, such as students, academics themselves, college principles and system vendors

Dedication

This thesis is lovingly dedicated:

To the one person who I know will pray for me more than I do for myself; my Mother.... ***Faridah Redwan.***

To the source of love and understanding, the person whose words of wisdom I will always savour; my Father..... ***Zuhair Kadi.***

To the person, who, despite of everything; have shared with me more than half of the journey of my PhD; my ex-husband.... ***Turki Edrees.***

To my source of power and optimum happiness, my children:

Ahmed... for his understanding and shiny bright smile.

Awwab... for his witty sense of humour and for simply being Awwab.

For the source of endless support and motivation;

My family, especially my sisters ***Hadeel, Hibah, Hana and Shyma.***

To the one person whose care and help in the last days allowed me to finish my thesis;

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Chapter 1 Introduction

1.1 Background

“In this digital age, students must learn to use tools essential to everyday life and workplace productivity. The way they work and live have been transformed by demographic, economic, political, technological, and informational forces. Students live in a world of almost unlimited streams of information, difficult choices, and enormous opportunity. Unless the gap is bridged between how they learn and how they live, today’s education system will face irrelevance” (Tucker, 2014, p. 167)

To follow the global trend, educational systems need to adapt to changes that cater for the current generation. In fact, these days, Information and Communication Technology (ICT) applications are changing the modes of teaching and learning in Higher Education Institutions (hereafter HEIs).

The great advances in information technology, in addition to the rapid exchange of information and networking played vital roles in encouraging most universities worldwide to deploy ICT solutions in their strategies (Al Hogail & Mirza, 2011). This deployment includes many aspects, such as admission & registration, finance, human resources, purchasing and teaching & learning, which are the core processes in any educational institutions.

This advancement is important to cater for current university students, arguably called *Digital Natives* by Prensky (2001), being, the generation which started university at the beginning of the 21st century, and the first generation who grew up with all those technologies available. According to Pernsky (2001), this generation spent their entire lives surrounded by computers, digital music players, video games and cell phones, in addition to many other games and tools which are based on technology, and so are considered *Digital Natives*: “Our students today are all “native speakers” of the digital language of computers, video games and the

Internet" (Prensky, 2001, p. 1). Prensky's claim, which stated that the whole current generation is considered *Digital Natives*, has been challenged by scholars. Pernsky's claimed that the new group of students attending Universities is fundamentally different from any that educators has taught before. According to Bennett, Maton, & Kervin(2008), the main claims which the debate over digital natives is based upon are: (1) there is a distinct generation of "digital natives" that actually exists; (2) fundamental changes in educational practices need to take place to cater for the needs of these "digital natives". According to them, these claims are based on fundamental assumptions with weak theoretical and empirical foundations. Despite the debate regarding "Digital Natives", the fact remains that this heavy exposure to technology has raised demands and expectations from the current generation; they demand that their educational institutions are digitally mediated. HEIs need to exploit the advancement in ICT solutions to cater for this generation and meet their demands on different levels.

In fact, for the last 2 decades, the impact of ICT solutions deployment in educational and training policy in all sectors has been revolutionary, and based on this; it is safe to predict that ICTs are set to play a significant role in the experience of both formal and informal learning processes. Studying the impacts of ICT solutions in teaching and learning processes on different stakeholders has led to the introduction of the Educational Informatics research field (Levy, et al., 2003).

The notions of virtual learning and e-learning are not new; they have been widely discussed and debated among scholars for nearly two decades.

At the beginning of the twenty-first century, ambitions regarding the creation of virtual HEIs escalated. According to Pollock & Cornford (2002), the application of ICTs in HE at that time, particularly the emergence of on-line or virtual universities, might result in having placeless institutions with the "potential to reshape traditional university geographies, as well as the methods, relationships, and perhaps even the 'ethos', of the academy" (P. 359).

The emergence of e-learning during the same period had impacts on educational institutions as well.

In the literature, the adoption of electronic media in learning scenarios was considered sufficient to constitute e-learning (Tavangarian, Leypold, Nolting, Roser, & Voigt, 2004).

Ambition grew that e-learning was going to change education in general and higher education in particular and that online learning might become the norm. according to McPherson & Nunes (2006), to meet the demands of the Information Society, and due to globalization, which resulted in increased competitiveness across most industrial sectors, including education, an e-learning strategy consultation document to populate a unified national startegy across all educational establishments was issued by the UK government which stated that e-learning had the potential to revolutionize educational processes and had the capabilities to change how tutors taught and how students learnt.

The notion of e-learning was fashionable in the late nineties and throughout the last decade, which made that age a golden age for consultancy companies offering their services to educational institutions, exploiting optimistic studies in how e-learning would benefit them (Tavangarian, Leypold, Nölting, Röser, & Voigt, 2004). As a result, ROI (“Return on Investment”) of e-learning projects was the focus, instead of how these projects might optimise teaching and learning processes (Tavangarian, Leypold, Nölting, Röser, & Voigt, 2004).

One of the e-learning solutions that serve both students and academics is Virtual Learning Environment (hereafter VLE), which is one of the most widely used computer-based technologies for both teaching and learning (Johannesen, 2012), the implementation of which is becoming routine in HEIs around the world. This high level of adoption has been influenced by the widespread introduction of commercially available VLEs (such as Blackboard, Moodle, WebCT, etc.) (Paechter, Brigitte, & Daniel, 2010).

VLE can be defined as “an internet-based system that supports traditional face-to-face teaching (it does not consist of the educationalist being physically located in a different setting from the student) and assists educationalists (including administrators) in developing and managing educational resources for students” (Jackson & Fearon, 2014, p. 245). VLE in general allow instructors and students to

share educational materials, submit and return course assignments, make announcements and communicate online (Lonn & Teasley, 2009).

Through the exploitation of VLE features, classes can be electronically managed and educational materials delivered via electronic means has become possible (Pscharis, Chalatzoglidis, & Kalogiannakis, 2013).

The adoption of such systems has impacted on teaching and learning processes, which are the core processes in any educational establishment. Determining and studying these impacts is vital for HEIs around the world for different stakeholders. The deployment of such systems is costly, therefore decision-makers need to maximize the benefits from their use and ensure returns on investment; academics and students, on the other hand, being the main users of VLE, need to be provided with best practices and use benchmarks, which will maximize their benefits from the system. Therefore, researches that tackle VLE use and exploitation in HEIs are vital.

Universities and Colleges in the Kingdom of Saudi Arabia are no exception to this trend. The Kingdom of Saudi Arabia is a large country with a total surface area of 2206714 Square Meters (UN Data, 2015). Most of the country's population are young people; as of 2013, 29% of the population were children aged 0-14 and less than 6% were over 60 (UN Data, 2015). As a developing country with rich oil resources, it is investing largely in education in general and higher education in particular (. These investments reflect the government vision toward education as a corner stone in the transformation to a society and economy of knowledge. For the current fiscal year, 2015, the government allocated 217 Billion Saudi Riyals for education, which denotes 25% of the general budget of the country (N/A, 2015). Currently, there are 25 public universities, fully funded by the government, and 47 private colleges and universities, all scattered around the countries 13 administrative regions (Ministry of Education, Universities, 2015) (see Figure 1: Saudi Arabia Administrative Divisions).

With the availability of financial resources, in addition to following global trends, very large budgets have been allocated to educational technologies in all universities in the Kingdom, including private and public universities and colleges. Ensuring satisfactory returns on investment is crucial for upper management in

HEIs in Saudi Arabia and will aid in guiding future investments in ICT in education. This study investigated the deployment and impact of Virtual Learning Environment systems on teaching in Saudi Higher Education Institutions, represented by a case study, Omega College, which recently changed its status to that of a university, is a private HEI not financed by the government. Nevertheless, it follows the same trend in investing in technology, in addition to donating large budgets for advancement, as part of the Country's vision. The study aims to investigate how academics interact with the VLE system in an attempt to discover their perceptions of change in teaching practices resulting from the use of the deployed VLE.

On a personal level, my background is technical. I have a Bachelor's degree in Computer Science and I have worked for seven years as an IT technical administrator. During my career I worked as a user support worker, a network administrator and an operation's manager. In 2008, I pursued my Master's degree at Lancaster University, and after working for years in IT, I decided to change career. I studied Information Technology Management and Organizational Change. Part of the degree requirements were a Master's dissertation. I chose to do mine on the deployment and impacts of VLE at Omega College (the chosen research context).

Due to the small scale of a Master's dissertation, the phenomenon was not studied with the depth required; therefore when I decided to pursue my PhD, I chose to continue investigating the phenomenon of VLE from an academic perspective.

I personally have an interest in Information Systems (IS) from a technical perspective, and after the Master's degree, my interests widened in scope as I became more aware of how human interaction shapes IS, therefore I chose to study at the Information School, as it would allow me to study the topic from a social science perspective. In addition, as a Saudi citizen, I am fully aware of how educational technologies, e-learning and distance learning are shaping HEIs in Saudi Arabia. In the current circumstances, HEIs in Saudi Arabia are fertile territory for research in different areas, and educational technologies and e-learning are among of the most important and interesting topics to study.



Figure 1: Saudi Arabia Administrative Divisions (map of saudi arabia (administrative divisions), 2015)

1.2 The Kingdom of Saudi Arabia

The study is conducted in HEIs in Saudi Arabia, more specifically at the city of Jeddah.

The Kingdom of Saudi Arabia is one of the Middle East countries, and a member of the Gulf Cooperation Council (GCC).

The country is located between the Arabian Gulf and the Red Sea. It shares borders with Iraq, Jordan and Kuwait from the north, Yemen to the South, Oman, Qatar and the United Arab Emirates from the east.

The country is the largest country in the Middle East with a land area of about 1.96 million square kilometres, and the capital city is Riyadh (Saudi Arabia, 2015).

According to 2010 census, the population of Saudi Arabia is estimated by 29,195,895 million (Saudi Arabia, 2015) .

Arabic is the official language spoken in Saudi Arabia. English is the second most important language and is the official medium language in a significant number of businesses and educational establishment. Omega College, where this study was

conducted, is adopting English as an official language for study and communication, and students need to achieve a certain TOEFL score to be eligible for academic programs.

Saudi Arabia is the home of the two holy places in Islam, Makkah and Madinah. Millions of Muslims travel to Saudi Arabia around the year to visit the holy places. Once a year during Hajj, Millions are gathered to perform Hajj, which is the fifth pillar of the Islamic faith.

Islam is the official and only religion in the country with 100% of population is Muslims.

Saudi Arabia has an oil-based economy; it possesses around 16% of the world's oil reserve, and is the world's largest exporter of crude oil and petroleum products. The petroleum sector plays vital role in the country's economy, it accounts for around 80% of budget revenues, 90% of export earnings and 45% of GDP. The country is trying to diversify the economy by focusing on sectors such as power generation, natural gas exploration, telecommunication and petrochemical sectors (Forbs, Saudi Arabia, 2015).

1.3 Significance of the Study

This study is concerned with perceptions of change in teaching practices which have resulted from the deployment of VLE from an academic perspective. In the literature, there is a lack of research that tackles the issue of educational technologies, VLE in particular, including their adoption and use from teaching academics' perspectives. A significant amount of research has been conducted exploring the phenomenon from students' perspectives, and most of which have been quantitative (see Chapter 2, Literature Review and Chapter 3, Research Methodology and Design), exploring the academic's perspective in the Saudi context in away which is significant and is considered to be an unexplored area of study.

Teaching academics were chosen as the main stakeholders due to the lack of research investigating their perceptions regarding the use of VLE in teaching

processes, in addition to the fact that their usage and perception directly influences other stakeholders (students).

The study was conducted in Saudi Arabia, and, as has been mentioned, large budgets have been allocated for technological solutions in higher education institutions in Saudi Arabia. Studies concerned with how these systems are being used and utilized are important. They will ensure that resources are being utilized and investments justified.

In addition, according to Jackson & Fearon (2014), great expectations existed for VLE; it was perceived as a system that would improve the quality of learning and teaching, in addition to achieving cost reductions for educational establishments. Managing these expectations is essential for HEIs, and this entails research conducted from different stakeholder perspectives.

1.4 Research Aims

This research aimed to investigate the impact of VLE systems deployment on teaching in Saudi HEIs. The study investigated how academics were interacting with the systems in an attempt to explore if the traditional modes of teaching were affected by the deployment of such systems. This exploration aided in determining the academics' perceptions of change in teaching practices which resulted from the deployment of VLE. The study also investigated whether the current level of use justifies the investments made by the college's Board of Trustees and aimed to establish a new understanding of the usability and practices of VLEs in Saudi HEIs, which is provided in the Discussion chapter.

1.5 Research Question

In order to achieve these aims, the following research question was tackled:

- What are the perceptions of academics in terms of changes in teaching practices resulting from the deployment of VLE at Saudi HEI?

1.6 Research Objectives

From the research questions, the following research objectives emerged and were achieved through conducting the research:

- To determine the expected benefits and facilities offered by the use of commercial VLEs, as reported in the literature;
- To investigate and discuss the VLE facilities most frequently used by academics;
- To investigate the changes and consequences for academics in terms of:
 - Teaching strategies;
 - Economies of effort;
 - Expected learning behaviours;
- To study the impact of VLEs in Saudi HEIs with a focus on women-only institutions;
- To investigate changes in teaching practices as a result of VLE implementation and use.

By conducting an extensive literature review, the researcher will be able to explore the potential benefits and facilities offered by the use of commercial VLEs. In addition, the literature review will aid in exploring previous studies and how they dealt with this issue, either quantitatively or qualitatively. This will help the researcher to evaluate whether previous studies had already identified the most frequently-used features in VLEs in different HEIs worldwide and in women-only HEIs in particular. These factors will aid in constructing informed interview scripts that will answer the proposed research question and will help in achieving research objectives and aims.

The issue of the changes and consequences of VLE deployment on teaching in HEIs is an issue that needs to be conducted in context. Moreover, studying the impact of VLE deployment in Saudi HEIs could not be fulfilled from the literature alone. An empirical study is needed, and as a result, a context-based case study was identified (Omega College, Jeddah).

The study will compare the benefits and facilities claimed for VLE, as reported in the literature, against findings from the empirical study. This comparison will help in achieving the research objectives and in answering the research question.

1.7 Summary of Methodology

The study is an interpretivist case-study. The adopted research strategy is inductive and the chosen research methodology is qualitative.

The lack of relevant research on academics' use of the system in teaching processes has created the need for an inductive approach.

The interpretivist approach is chosen as the researcher tended to investigate the phenomenon being experienced by academics in the case study context, so it is the most appropriate epistemological position for the study.

For data collection, semi-structured interviews were chosen as the main source of data. In terms of data analysis, thematic analysis was chosen as a tool for analysing qualitative data, in the form of interview transcripts. Findings are presented firstly by presenting a list of themes consisting of main themes, sub-themes and codes that emerged from the empirical data. To illustrate relationships between main themes, sub-themes and codes, concept maps have been used.

Narratives of data are presented in the Findings chapter, featuring the proposed model for perceptions of change in teaching practices and how they actually occur, in addition to narratives for all themes and sub-themes and how they are interrelated. Findings then are discussed and the study concluded.

1.8 Thesis Structure

This thesis is comprised of five chapters that explain how the study was conducted and how the results were achieved in details.

Chapter 1 provides a background to the study, in addition to the research aims objectives and research question.

Chapter 2 provides a literature review on the following areas: Classroom Structure and Historical Background; Learning Processes; Learning in Women-only HEIs; Technology and e-learning in Classroom; and VLEs and other Systems in HEIs and VLEs in Saudi Arabia.

The chapter concludes by providing points extracted from the reviewed literature used to inform the development of interview scripts. In addition, the literature review is utilized in the discussion and conclusion chapter, where the researcher compares and contrasts findings from the study against the existing body of knowledge. For this purpose, the literature review was updated to include recent research published in the field.

Chapter 3 explains in detail research methodology and design As presented in 1.7 Summery of Methodology.

Research design is presented in the chapter in details. It explains how the chosen methodology was implemented in the chosen case study context. Information about case study context is given, in addition to details about how data was collected and how participants were identified.

Assessment of the research quality is given, based on trustworthiness, credibility, transferability, dependability and confirmability.

Chapter 4 presents findings from the study. It includes narratives of all themes and sub-themes yielded from data analysis. It features brief details in how analysis was actually conducted, and how findings were generated. A list of generated themes presents, and concept maps that illustrate relationships between themes, sub-themes and codes is used to guide narratives, in addition to the list of themes.

Findings are presented as narratives. These narratives feature quotes from the data with interpretations from the researcher. Narratives guide results from the study and identify contributions to knowledge, both theoretical and practical.

Chapter 5 presents discussions and conclusions.

The chapter features summaries of all conducted research activities. It explains how each activity was involved in answering the research question and achieving its objectives. It includes discussion of the findings in relation to the existing body of knowledge, and features emerging themes and factors from the study that corroborate and contradict the existing body of knowledge.

CHAPTER ONE: INTRODUCTION

The chapter presents contributions of the study to the current literature. In addition, it presents the implications of the study for different stakeholders. It concludes by restating research question and objectives.

The conclusion states that the research question was answered and objectives achieved through the activities conducted. The conclusion presents limitations of the study and opportunities for further researches.

Chapter 2 Literature Review

2.1 Introduction

Chapter 2 reviews the literature on the Virtual Learning Environment system (VLE) in Higher Education Institutions (HEI).

In order to discover how the phenomenon operates in HE, it makes sense to start from the basic concepts of learning and schooling and then move out to include VLEs. In order to achieve this, the review will be divided into six sections.

Section 2.1 provides a historical background on the classroom structure. This background is important as this research is about the use of VLE within the context of the classroom.

Section 2.2 then discusses the learning process and how teaching and learning is conducted in the classroom. The VLE system is promoted as a complete Learning Management System and reviewing the literature of learning processes and teaching styles will aid in formulating questions for the semi-structured interviews (see 3.5.1.3 Preparation of Interview Scripts), which will in turn help answer the research questions.

Section 2.3 then briefly describes learning in women-only HEIs. Despite the fact that the study is not feminist, it is important to briefly review the literature on women-only education because the study is conducted in a women-only HEI.

Section 2.4 then discusses technology and e-learning within the context of the classroom. VLE systems are considered an Information and Communication Technology (ICT) application; thus, reviewing the literature of technology in general, and e-learning in particular, is relevant to this study.

Section 2.5 then discusses VLE systems in detail. It starts by discussing VLEs in general, together with other ICT applications used in HEIs. After this, the basic structure of the system, including its interactive facilities, will be discussed, followed by an example from Blackboard Learn 9.1. A discussion of the system's advantages and disadvantages, in addition to those mentioned in previous studies, will then follow.

Section 2.6 then discusses ICT in Saudi Arabia and provides examples from other Arab countries, due to the lack of research on ICT in Saudi HEIs. Finally, Section 2.7 offers discussion of the chapter and conclusions reached.

2.2 Classroom Structure and Historical Background

The scope of this research is the use of VLE within the classroom and whether VLEs impact on teaching, and as a result, student's learning. In order to achieve this, the structure of the classroom and how teaching is conducted within such settings needs to be defined. It is true, however, that the study is concerned about the use of VLE in HE, nevertheless, as will be discussed, the classroom setting itself bears similarities in both normal schools and HEIs, which justifies discussing classrooms historically.

Setting the scene for VLE usage within the classroom aids in defining its role, and in turn helps the researcher to form relevant questions for the interviews. This section starts by providing a definition of classrooms, followed by a description and brief historical background of the classroom environment.

One definition of a classroom is “a room in a school where lessons take place” (The Free Dictionary by Farflex, 2012). The term ‘classroom’ has several usable synonyms; ‘homeroom’ for example is “a classroom in which all students in a particular grade (or in a division of a grade) meet at certain times under the supervision of a teacher who takes attendance and does other administrative business”, and a ‘study hall’ is “a classroom reserved for study” (Anon, 2012).

According to Lawn (1999), a classroom is a unit within schools as a part of a building designed for a purpose, and so contains particular forms, spaces, and furniture, which all express intentional use by both teachers and pupils.

The structure of a classroom has been described in the literature in different historical contexts. Classrooms are commonly part of educational institutions or schools; therefore, it makes sense to shed light on the formation of the current schooling system as we know it in order to define the role of the classroom and discover its structure.

The schooling system has gone through different stages. As a principle, schooling can be seen as “the ways that adults organize the lives of the young so that they acquire knowledge and skills deemed essential to communal life” (Cole, 2005, p. 197). In small face-to-face societies where linguistic interaction is mediated by oral language, education and participation are inseparable (Cole, 2005). For example, if a child is to be taught fishing, there will be no sessions and classes to teach him/her; learning occurs in the context where the child observes adults practicing fishing. Regan (2000), as cited in Cole (2005), presented reviews of 76 societies in sub-Saharan Africa which were studied ethnographically; he concluded that in the African setting, education cannot be separated from life itself, which means that enculturation is part of everyday life with no formal schooling needed in such an environment.

Historically, it appears that it is primarily when a society's population becomes numerous and it develops elaborate technologies which allow the accumulation of extensive material goods that the form of enculturation to which the term ‘schooling’ can be applied emerges; the Sumerian schools and classes are relevant examples of such a schooling system (Figure 2).



Figure 2: Sumerian Classroom (Cole, 2005)

According to Cole (2005), Sumerian schools resemble modern schools in many aspects. Their activities, architectures and the reigning ideologies within them were startlingly modern. As shown in Figure 2, the classroom consisted of rows of desks, facing forward to a location where an instructor stood, guiding them in repetitive practice in writing and the operations that accompanied it. For the purpose of writing, classrooms contained bowls from which wet clay could be obtained to refresh current tablets.

The structure of the school building and classroom design and furniture are important elements to study. According to Markus (1996), as cited in Lawn (1999), the material evidence an educational historian should look at in studying schools is as follows:

“It is in the buildings which were adapted or purpose built, the space thus created, and the material contents of this space-furniture and equipment. Above all, it is in the order imposed on the human bodies in this space, down to their tiniest gestures, including the gaze of their eyes”

(Markus, 1996, p. 12 as cited in Lawn, 1999)

It can be observed from Markus' description that the building and design of schools impacted on teaching methods. In the design of Victorian schools, for example, there was an emphasis on the control of movement and visual surveillance as can be seen in Figure 3.



Figure 3: Victorian Classroom (BBC, Primary History, Victorian Britain: Victorian schools, 2012)

In the nineteenth century and during the Industrial Revolution, schools and classes were still structured on the model described above, and with a rigid academic system. The system in these schools was structured according to the mass-production mentality, following a rigid academic system with times allocated for each activity and bells ringing announcing the beginning and end of each activity. The educational system during this time was efficient and measurable and prepared students for the factory jobs available at that time (Anon, 2011).

Even though the Industrial Revolution is a distant memory, the schooling system is still followed, albeit in a less rigid manner. Classrooms where student assemble to listen to the instructor or to conduct group work moderated by a learning facilitator still exist, and this system is being followed in most educational institutions around the world, including HEIs (see Figures 3, 4 and 5).



Figure 4: Classrooms in 1897 at the Francis M. Dre 1



Figure 5: Classroom with an interactive whiteboard



Figure 6: Open classroom in Tanzania

To conclude, classroom characteristics can be extracted from the above, as follows:

- They are rooms within buildings or allocated spaces, and as a result are limited in space and within borders;
- Sessions take place at a precise time, normally called lectures or lessons;
- Sessions require the presence of a learning facilitator who delivers or moderates the sessions, which are mostly synchronous.

Section 2.3, after setting the scene and describing the classroom environment, describes the learning process within the classroom.

2.3 Learning Process

This section explains the learning process and different teaching styles adopted within the context of classrooms in HEIs. Such an explanation is relevant as it will aid in defining the VLE's role in the learning process; in addition, it will aid in discovering whether VLEs have changed/enhanced pedagogy within the classroom environment. It starts with a brief generic explanation of the learning process in the classroom; after that, the focus shifts to learning and teaching styles in HEIs.

Learning can be defined as “the process of becoming capable of doing something (“doing” in the widest sense) as a result of having had certain experiences (of doing something or something happening)” (Marton & Tsui, 2004, p. 4).

In order for the learning to take place in the classroom context, teachers will assume the role of facilitators and knowledge transmitters. In a typical classroom

setting, the teacher controls the classroom environment, and in such a setting, the learning process is designed for knowledge to be transmitted from the instructor to the student. Prior to and during the 1960s, the actual environment of the classroom was conceived by researchers as a ‘black box’, with the focus being on inputs and outputs. Examining what was actually happening in the classroom started during the 1970s, with a series of observational studies in the United States in particular (Anderson, 1987).

In general, students assemble in the classroom and the teacher will stand in the middle and deliver the materials. In most developing countries, students receive textbooks and bring them with them, along with other materials, such as notebooks and other stationery. In addition, education is based on a significant amount of homework which students are required to do on a daily basis. In developed countries, textbooks and other materials such as notebooks are kept at school. Education is based to a great extent on what is given in the classroom with a minimal amount of homework, especially in the primary years. In both developed and developing countries, the teacher is required to prepare the material in advance and distribute it to students when needed.

Traditional HEIs, as learning institutions, are no exception to this model. HEIs around the world are historically traditional establishments, where instructors are at the centre of the learning process.

In fact, HEIs have been known for their solid, traditional approach rather than their innovative power (Westera, 2004), unlike in other industries, such as banking, retailing, construction and manufacturing.

In most cultures, teachers are often at the centre of education. This style is often referred to as a ‘teacher-centred’ or ‘instructor-led’ approach; it entails teachers setting objectives, determining and directing activities designed to help students achieve those objectives, and then assessing their learning (Pedersen & Williams, 2004). This type of learning is mostly “based on the classical tradition of transferring somebody of knowledge in the form of unchangeable and authoritarian ideas, concepts or definitions to the learner.” (Nunes & McPherson, 2006).

In higher education in particular, university life continues to maintain the long-standing educational practice, which includes formal academic programmes taught in formal classrooms (Jamieson, 2009). In most universities, lecturing is the most common form of teaching. Nevertheless, not all lectures are purely didactic, but in general they feature little student activity (Kember, 2009). This model of teaching (which is called ‘behaviourist’) has been challenged in the past two decades. It has been argued that this model, with its emphasis on instructors, failed to recognize practical problem solving and critical thinking (Brown, Collins , & Duguid, 1989).

In addition, excessive lecturing may result in the creation of a passive attitude towards learning, which may lead to creating a student who does not have a true university experience based on independent study, the comparison of sources, problem solving, and the acquisition of professional and academic autonomy (Pedroâ, 2001).

The alternative approach suggested to replace the teacher-centred approach is the student-centred learning approach. ‘Learner-centred’ or ‘student-centred’ learning is referred to in the literature as a model that supports learners in knowledge building by promoting higher order thinking skills, collaboration, product construction and reflection (Kali, Levin-Peled, & Dori, 2009). This model of learning is based on the Constructivist paradigm in teaching. According to Paily (2013), as extracted from learning theories by Dewey, Vygotsky, Piaget, Glaserfeld and Bruner, active construction of new knowledge by the learner based on their experiences is the most essential element of constructivism. This paradigm emphasizes active and personal knowledge construction by the student through his/her social interactions and experience within a learning environment (Bostock, 1998; Heinecke, Dawson, & Willis, 2001)

One of the main characteristics of student-centred learning is that it helps in developing critical thinking skills (McDonald, 2007, as cited in Heise & Himes, 2010). Moreover, it empowers students to take a more active role in the learning process and enables them to choose how and what to learn (Heise & Himes, 2010), unlike the traditional instructor-centred approach, where the instructor decides what and how students learn.

In addition, it has been argued that student-centred learning has the potential to create a more academically diverse student body, which could not be created by the traditional teacher-centred approach (Hockings, 2009). Moreover, the approach arguably balances the power between academics and students, aids in sharing the responsibility of learning between academics and students, involves students in decision-making about what to learn and aids in using students' needs and interests in creating informed course content (Abdelmalak & Trespalacios, 2013).

The traditional instructor-led approach to education has been challenged in the light of recent research into student-centred learning, which suggests that "learning depends wholly on what the student does; (and) only indirectly on what the teacher or university does" (Simon, 2002). Despite all the benefits, the approach has been criticized by scholars. Constructivists have been criticized for propagating approaches that are unproven, purely theoretical and impractical (see Land, 2000; Matthews, 2003). Nevertheless, student-centred learning has arguably remained a trend in higher education, but whether academics are adapting to this change or not is still a debatable issue. There are barriers that may prevent academics from fully accepting student-centred learning as an approach. Academics, for example, perceive themselves as experts in their fields, which could make them reluctant to adopt a model of teaching that incorporates active student engagement, as in student-centred learning (Kember, 2009).

Research on pedagogical issues is vast and still expanding, and falls beyond the scope of this research, which is concerned with the link between technological advancement and changes in pedagogy, and from the literature it is obvious that the interest in student-centred learning has been influenced by the emergence of powerful, user-friendly computer tools and the growth of the Internet and World Wide Web (Fetterman, 1998; Owston, 1997; Shotsberger, 1996 as cited in Hannafin, 2000).

The learning process and teaching styles outlined in this section were described neutrally. However, different groups may receive education differently and in a unique style. In this research, it makes sense to review the literature of women-only HEIs, as the research context is women only. The next section will briefly discuss learning in women-only HEIs.

2.4 Learning in Women-only HEIs

This research was conducted in a women-only HEI in Saudi Arabia. It is true, however, that all HEIs in Saudi Arabia are gender segregated, but what makes the current research context unique is that it has no male branch. It is fully internally operated by females with few exceptions. The Board of Trustees members are males, in addition to a few academics who teach students in separate parts of the building to avoid mixing with other female students and staff. Reviewing the literature of women-only HEIs is important in this research, as it will aid in discovering how the phenomenon of VLE use operates in female-only contexts and how decisions to deploy such systems are taken. This can be achieved by examining the managerial and teaching styles in women-only HEIs worldwide in general, and in the Arab world in particular.

This section reviews the literature of women-only HEIs. It starts by providing a brief review of the literature of single-sex education in general. After this, the background of women in HE is presented, followed by a sub-section on women's education in Saudi Arabia. A brief description of managerial and leadership styles in women-only HEIs then follows.

2.4.1 Single-Sex Education

Single sex higher education has a presence in many countries. Korea, Australia, the USA and many Arab states have single sex HEIs and they are established for different reasons. In Saudi Arabia, for example, education has remained single-sex not because of the influence of Islam *per se*, as expected, but is largely due to the cultural traditions that grew up around it (Al-Rawaf & Simmons, 1991; Waddy, 1980 as cited in Taleb, 2010).

In the USA, there are 48 women-only colleges, distributed across the country (Anon, 2012). The issue of whether single-sex is better than co-educational schooling is a debatable one. According to Jackson and Smith (2000), there is a

common belief that single-sex education is good for boys and bad for girls. This common perception has arisen from research that suggests that, in mixed-sex schools/classes, girls get less attention than boys (Spender, 1989 as cited in Jackson & Smith, 2000); girls tend to take the role of caretakers for boys (Fostre, 1998 as cited in Jackson & Smith, 2000); girls are sexually harassed by boys (Mahoney, 1985; Hughs & Sandler 1988 as cited in Jackson & Smith, 2000); girls learn to defer to boys (Sarah et al., 1980 as cited in Jackson & Smith, 2000), and so on. Nevertheless, other studies have suggested that, when pupil and school background factors are controlled, there are no academic advantages of single-sex schools for girls (Steedman, 1985; Daley, 1994 as cited in Jackson & Smith, 2000).

The next sub-section will briefly present the current situation of women in HE.

2.4.2 Background of Women in HE

“The rational for a need to focus on women’s achievements in higher education is considered a key social development indicator measuring women’s status and conditions in any country.”

(Rashti, 2003, p. 2, as cited in Hamdan, 2005).

Women today are more empowered than they were 50 years ago. In some countries, they are more represented in higher education, with more female graduates than males in recent years. For example, in North America and Western Europe, women have been exceeding male enrolment rates since the 1970s. In Latin America, the Caribbean and Central Asia, the same trend has occurred in the 1990s. Even in the Arab States, as well as in East Asia and the Pacific, they have all begun to reach the parity line after decades of steady growth in female enrolment (Chien, 2014). In South and West Asia and in sub-Saharan Africa, women continue to be disadvantaged. For example, across sub-Saharan Africa, there are 62 females students for every 100 male students. In South and West Asia, there are 74 females enrolled in HE for every 100 male students (Chien, 2014). However, it can be observed that, despite disadvantages for women in the areas mentioned, women

overall are more represented in HE today than they were three decades ago, and Saudi Arabia is no exception. The next sub-section will describe the situation in Saudi Arabia.

2.4.3 Women's Education in Saudi Arabia

In Saudi Arabia, the issue of women's rights and their participation in public life remains a heated topic. In education in particular, women's schooling at all levels has remained under the authority of the Department of Religious Guidance (under the name of the General Presidency for Girls' Education) since its establishment until 2002. This was to ensure that the education of women served its original purpose (according to religious leaders) which was to make women good wives and mothers, in addition to preparing them for 'acceptable' jobs, such as nursing and teaching, that were believed to suit their nature and prevent them from mixing with men (Hamdan, 2005). According to Hamdan (2005), in 2002, the General Presidency for Girl's Education and the Ministry of Education, which was previously only responsible for boy's education, merged.

This amalgamation resulted from requests from both the general public and the government after a fire in March 2002 in an elementary school for girls in Makkah which resulted in the death of 15 young girls. It was reported by the Saudi press, who witnessed the incident, that the presence of the Committee for the Promotion of Virtue and the Prevention of Vice (or religious police) contributed to the death toll, as they prevented the firemen from entering the school due to the girls not wearing the hijab [headscarf], and according to the religious police, approaching them would therefore be sinful. This issue was widely discussed in the Saudi press and foreign press. It raised many questions not only about the role of the religious police, but also about the General Presidency for Girls' Education.

In fact, dissatisfaction with the General Presidency for Girls' Education had been evident before the incident; government budgets for women's education were lower than for their male counterparts. In addition, there was general dissatisfaction with the status of female schools in terms of buildings and safety. At the time of the incident, there were 5,400 rented school buildings with poor safety and security

measures, which suggested that the lack of such measures may have contributed to this tragic incident (Anon , 2002).

The resulting amalgamation has marked a milestone in women's education in Saudi Arabia, which started in the early 1960s when the first public elementary school for girls was established. The case of women's education in Saudi Arabia is a unique one.

According to Smith, a Western feminist, gender inequality is obviously rooted in women's traditional silence and absence from public life. Gender differences were normalized in the curriculum content at all schools for both boys and girls (Hamdan, 2005). Despite the difficulties and gender ideologies, women continued to enrol in HEIs and in 1999, the first private college for women was established in the city of Jeddah. This featured new courses to help equip women with skills that would allow them to compete in the workforce.

According to the Saudi Ministry of Higher Education, women now comprise more than 56.6% of the total number of Saudi University students and more than 20% of overseas scholarship recipients, and the percentage is expected to increase (Anon, 2010). In 2010, the world's largest women-only University, The Princess Noura bint Abdul Rahman University, was opened on the outskirts of the Saudi capital Riyadh with a capacity of 40,000 students. The University features courses in Computer Science and Engineering, Information Systems, Interior and Graphic Design, Business Administration and other specialities that practically aid in equipping young women with skills applicable to the current job market. It is clear that the traditional vision of equipping women only with skills that make them good housewives is shifting toward making them better represented in the workforce and in fields such as computer engineering and networking which have long been dominated by males. The next sub-section will present briefly leadership styles in women-only HEIs.

2.4.4 Leadership Styles in Women-Only HEIs

Studies in management and leadership styles in women-only higher education, which could be beneficial for this research, are lacking in the literature in general, and studies in the Arab world in particular are rare. This sub-section attempts to briefly review the available literature on this subject to aid in answering the research question.

One of the few studies in management and leadership styles in women-only HEIs is Taleb (2010). In her paper, Taleb investigated the relationship between gender and female leadership in a single-sex HEI in Saudi Arabia. The study is interesting because it was conducted in a women-only HEI in Saudi Arabia (Manar College), which is similar to the current research context.

In this qualitative study, the researcher used semi-structured interviews as a major source of data collection. The study concluded that leaders at Manar College adopted a democratic and interpersonally-oriented leadership style; this style is the one adopted by most female leaders in different cultures, which is different from the autocratic and task-oriented styles of leadership usually adopted by male leaders. In addition, female leaders tend to prefer a transformational leadership style, with an emphasis on vision, idealised influences and the deployment of the individual. Findings from this study corroborated Fagenson (1993) who stated that women managers “have a transformational, democratic, and/or “web” rather than a hierarchical style of leadership and more satisfied subordinates than men managers” (Fagenson, 1993, p. 5, as cited in Billing & Alvesson, 2000). Such findings are important as they aid in understanding the rationale behind adopting VLE systems in the current research context.

This section has briefly discussed the issue of women in HE in general and in Saudi Arabia in particular. In addition, it has discussed leadership styles in such contexts. The next section will discuss technology and e-learning in the classroom.

2.5 Technology and E-learning in the Classroom

“Technology refers to the way in which the parts are organized, through the application of knowledge, to realise their particular purposes.”

(Street, 1992, as cited in Lawn, 1999)

Teachers throughout history have used different technologies to aid their teaching. Bijker et al., as cited in Lawn (1999), in a collection of essays on the new sociology of technology, argued that the term ‘technology’ can be used in several ways. It can mean simple artefacts or objects, a process and the tacit knowledge or know-how used in creating the tool or managing the process. Based on this, it can be argued that any tool used by teachers (means) to aid in achieving certain objectives, like delivering lectures (ends) is technology.

Since the mid-nineteenth century, the classroom has become home to a series of technologies (chalkboard, textbooks, radio, television and film) that have been tailored to the dimensions of classroom practice (Cuban, 1986).

Modern societies used to equip their classrooms with the traditional blackboard and chalk, flip charts and later on overhead projectors, where the teacher printed his/her materials onto transparencies and used them in the lecture. Later on, teachers who were technically savvy started using PowerPoint presentations; as a result, HEIs started equipping classrooms with computers and projectors to serve the needs of ‘soft’ presentations.

In fact, the use of Information and Communication Technologies (ICT) in HEIs is becoming more and more common. Probably there is not a single HEI worldwide that does not consider ICT both as a source of opportunity and a source of constant concern (Pedroâ, 2001). Student needs and expectations are increasing; most were born into the information age and they expect their university to be digitally mediated.

Debande and Ottersten (2004) argued that the inclusion of ICT in education can be related to four rationales: i) socially based, which is concerned with the role played by technology in society and the need for education to reflect the concerns of the society; ii) economic or vocational, which is concerned with ensuring that the educational system prepares students for the existing job market, which normally

requires skills in technology; iii) pedagogical, which is concerned with the fact that technology will assist the teaching and learning processes through higher quality pedagogical materials and better communication, which will enhance the teaching of traditional subjects in the curriculum; and iv) catalytic, through external effects on society, which can be achieved through improving the cost-effectiveness of educational services delivery; by facilitating knowledge transmission and the acquisition of skills for disadvantaged communities; and by improving the education system through reshaping the power relationship between teachers and learners.

Based on this, it can be observed that ICT should contribute to enhancing pedagogy and participation in the teaching and learning process. It has been argued that technological advancement has a direct link to (anticipated) pedagogical change and the emergence of a student-centred learning approach. This link has been recognised over the past two decades, with several scholarly articles published discussing this issue (see Hannafin & Land, 1997; Strommen & Lincoln, 1992, Edwards & Bone, 2012).

According to Al Musawi (2011), technology becomes a critical complement to the educational experience, and it is changing the way academics teach and students learn. Moreover, technology, together with knowledge and demographics, were named as the most powerful factors driving change in HEIs (Bowman, 1999 as cited in Craig, 2004). According to Edwards & Bone (2012), the early arrival of eLearning in HEIs was promoted as a student-centered learning enabler, based on constructivist teaching principles.

Based on this, it can be argued that technology is considered a student-centred learning enabler. Engaging students in the learning process is a continuing mission for academics (Revere & Kovach, 2011). In this movement, technology plays a vital role when it is integrated with course content; it enhances education by promoting a student-centred environment through engaging activities. Thus, the focus in student-centred learning should be on interactive and collaborative tools, such as message exchange and discussion boards (Hammoud, Love, Baldwin, & Chen, 2008).

Education supported by ICT has been described using several terms that include ‘e-learning’, ‘Web-based Learning’, ‘Distributed Learning’, ‘Online Learning’ and

‘Technology Mediated Learning’; it is true to say, however, that e-learning is the most commonly used term to describe education that networks with Internet support (McGill & Hobbs, 2008).

The term e- learning is used in the literature to describe any technology-supported education. In fact, the terms ‘E-Learning’ and ‘Distance Education’, for example, are often used interchangeably, although they do embody generic differences. According to Guri-Rosenblat (2005), distance learning is not a new phenomenon, having been in existence since the early half of the nineteenth century. Distance education, unlike in traditional universities where students are assembled in one place (campus), reaches out to students wherever they live or wish to study. E-learning, on the other hand, is a relatively new phenomenon that “relates to the use of electronic media for a variety of learning purposes that range from add-on functions in conventional classrooms to full substitution for the face-to-face meetings by online encounters” (Guri-Rosenblat, 2005, p. 469).

Garrison and Kanula (2004) introduced the concept of ‘Blended Learning’, which aims to blend face-to-face learning with text-based asynchronous Internet-based learning. According to them, in order to achieve a quantum shift in terms of the nature and quality of the educational experience, there needs to be a solid understanding of Internet properties in addition to knowledge of how to integrate the most desirable and most valued face-to-face learning experiences with Internet technology effectively. Such a concept is appropriate to this study as it is concerned about learning within the context of the classroom. One of the most frequently-used educational technologies designed to enhance pedagogy in classrooms and support blended learning is VLE. According to Mogus, Djurdjevic, & Suvak (2012), the blended learning approach, which relies on the support of learning management system (LMS or VLE), is used by most educators these days as a supplement to the traditional classroom-based approach. The next section will elaborate on the VLE systems.

2.6 VLEs and Other Systems in HEIs

This section discusses VLE systems as an application to support teaching and learning. It starts by exploring different systems used in HEIs, followed by VLE definition and types.

In HEIs, several systems are used to manage different operations. Admission and registration, for example, are fully automated in most HEIs around the world, in addition to finance, purchasing and other activities. In recent years, the use of ICT has included the processes of teaching and learning as well.

VLEs are now the most frequently-used educational technologies in higher education behind the Internet and common office software; implementing them is becoming routine in HEIs worldwide (West, Waddoups, & Graham, 2007). According to Steventon, Panesar, & Wood (2014), these days, with students exposure to vast range of resources on a permanent basis, there must be very few, if any, courses taught in HE where VLE is not incorporated.

VLEs have been defined differently by scholars.

They can be defined as “software packages that provide Web-based tools, services, and resources to support teaching and learning processes for both online and blended delivery” (McConachie, Danaher, Luck, & Jones, 2005, p. 1); or they can be defined as “interactive learning”, in which the content is available online and provides automatic feedback to the students’ learning activities” (Al-Ajlan & Zedan, 2008, p. 58).

The definition that best fits the nature of this study is the one by Jackson & Fearon (2014) which stated that VLE is “an internet-based system that supports traditional face-to-face teaching (does not consist of the educationalist being physically located in a different setting from the student) and assists educationalists (including administrators) in developing and managing educational resources for students” (P. 245). The scope of this research is the use of VLE in the classroom and how this affects teaching processes; in other words, the focus is on the use of VLE for blended delivery, therefore the definition by Jackson & Fearon (2014) is the most appropriate one.

The system have been referred to in the literature using different terms such as Course Management Systems (CMS) (Bennett & Bennett, 2003; West, et al., 2007; Payne & Reinhart, 2008; Seluakumaran, et al., 2011; Solis & Hampton, 2009); Learning Management Systems (LMS) (see Lonn, et al., 2011 ; White & Ari Larusson, 2010); and Virtual Learning Environment (VLE) (see Ho, et al., 2009; Hsu, 2011; Ogbag, Saul , & Coates , 2012; Stricker, Weibel, & Wissmath, 2011; Costen; 2009;Al-Ajlan & Zedan, 2008). In this study, the term VLE will be used to refer to the system.

It is true that the above mentioned terms are often used interchangeably; however they don't always refer to the same system.

According to Luminita, Bârsan, & Mosteanu (2014), LMS (Learning Management Systems) and CMS (Content Management System) refer to different types of e-learning that are used in HE to improve teaching and learning processes. From their perspective, LMS is considered a platform to manage people. It is seen as a software package located on a server, and intended for the development, management and delivery of courses and training programs. On the other hand, CMS is a software designed to almost fully automate the management of content, especially web sites. As this type of systems focus mainly on content, they are often used for the creation of shared documents. It can be observed that LMS and VLE, bear more similarities with their focus on users interaction, while CMS focus more on content and how to create it, store it and share it. The term CMS itself can create confusion. If it refers to Course Management System, from the given definitions, it can be seen as LMS and VLE with additional components such as communication tools, assessments tools, groupware facilities and instructors facilities.

The difference between systems is blurred and depends on how scholars perceive them. For this study, the researcher chose the term VLE and will use it throughout the study.

The high level of adoption of VLEs has been influenced by the widespread introduction of commercially-available VLE systems, such as Blackboard, Moodle, WebCT, etc. (Paechter et al., 2010). Blackboard Inc., for instance, in 2005 served more than 3,650 institutions in more than 60 countries worldwide (Blackboard, 2005, as cited in Ioannou & Hannafin, 2008). Moreover, recent reports show that about 90% of American universities and colleges (Hawkins & Rudy, 2007 as cited

in Lonn & Teasley, 2009) and 95% of British HEIs (Browne et al., 2006 as cited in Lonn & Teasley, 2009) have implemented one or more VLE-type products for students and academics to use. Currently, Blackboard alone is serving more than 10,000 institutions worldwide with nearly 8.5 million active users (Anon, 2011). These systems allow instructors and students to share educational materials, submit and return course assignments, make announcements and communicate online (Lonn & Teasley, 2009). VLE system marketers promote VLEs as complete learning systems. White and Ari Larusson (2010), in their research bulletin, divided the capabilities of VLEs into three broad categories: transmission, which aids in distributing and accessing course materials; evaluation, which contributes to identifying different learning patterns for educators and learners; and interaction, which establishes unique learning environments for the applied practice of exercises. According to Heemskerk, Kuiper, & Meijer (2014), VLE may support learners learning processes through several means, such as the permanent availability of learning materials. This way, students can look up lessons or other materials on VLE when doing assignments, when studying for exams, or when they are ill. In addition, log files provided by VLE show which students use which lesson materials and at what time; such information might be used for diagnostic purposes.

Another concept related to technology use in teaching and learning is Computer Managed Instruction (CMI), which refers to software that saves student records and manages their progress. In this case, the system builds a complete database record about students from their enrolment until their graduation and produces reports that can be shown to guardians and whoever is concerned (Alareeni, 1988).

Leading companies offer other educational software solutions for HEIs in addition to VLE. Blackboard, for instance, offers seven different integrated platforms: Blackboard Learn, which is the VLE system that is concerned with the teaching and learning processes; Blackboard collaborate, which offers the capabilities of web conferencing, mobile collaboration, enterprise instant messaging and voice authoring; Blackboard connect, which offers an enterprise text messaging solution; Blackboard transact, which provides a complete student management system solution which includes student attendance monitoring and student financial management; Blackboard analytic, which provides statistical information for students and instructors on their own Blackboard learn courses, and in addition

provides statistical information about the overall system usage for staff and leaders, which should aid in decision making; Blackboard mobile, which provides a mobile platform for Blackboard learn and makes it available on mobile devices and smart phones; and Blackboard engage, which offers a communication platform specifically for K12 (Blackboard, 2012). In the next sub-sections, the VLE will be generically described. First a description of different system types will be enlisted; this will be followed by a thorough elaboration in system structure and components. After that, an example from a commercial VLE system will be provided, followed by a description of the perceived advantages and disadvantages of the system from different perspectives.

2.6.1 VLE Types

HEIs mostly purchase and deploy VLEs that are either open source (software delivered with source code) or commercial (without source code). HEIs these days seldom develop their own VLEs due to their high costs and the availability of other cost-effective alternatives. The main concept of open source is the ability to access the source code written in a human readable programming language such as C++ or Java; this source code can then usually be used and/or modified under the terms of the licence agreement (President's Information Technology Advisory Committee, 2000 as cited in Rooij & Williams, 2009). Moodle is the most popular open source software and it is offered to institutions free of charge. In contrast to Moodle, Blackboard is the most commonly-deployed commercial VLE. Blackboard acquired WebCt in 2005, another well-known company that offered VLEs to HEIs for \$180 million and retained the name Blackboard Inc. (Lederman, 2005).

Different factors play different roles when HEIs choose which system to deploy. It depends on their budget, the size of the institution and academics' and students' needs and expectations. It can be argued that the decision to choose and implement VLE is a strategic one, and is part of the overall ICT strategy for HEIs. Morgan (2003) argued that VLEs play a vital role in fulfilling the strategic academic goals of higher education. Nevertheless, implementing such systems is costly and there is no guarantee that they will be used to their fullest potential. According to Selwyn (2007), billions of dollars are invested annually in different aspects of ICT in HEIs worldwide; despite these investments, the fact remains that many students and

faculty make only little formal use of ICT applications (VLE, for instance) in their teaching and learning. Thus, strategy formulation that addresses the use of ICT in general in HEIs is vital, as the lack of such strategies can lead to improper deployment and under-utilization of costly technical solutions. As a result, research that addresses the issue of ICT investment in HEIs is important, as it guides decision makers in taking the decision regarding which system to implement as part of their overall ICT strategy.

Jasinski (2007), as cited in Bhati et al. (2009), in their research presented the most common themes that have emerged from researching issues in the adoption of pedagogical tools, which are time, cost, pedagogical use, technical problems and lack of strategic management initiatives. Such tools maybe used by HEIs decision makers; they can use them as benchmarks and choose the system that fulfils their needs within an agreed timeframe and budget, in addition to their ability to aid in teaching and learning without constant technical problems.

Another study which explores decision making in HEIs regarding purchasing VLE is Ho et al. (2009). This study combines the Analytic Hierarchy Process (AHP) and Quality Function Deployment (QFD) to evaluate and select the most appropriate VLE system. Criteria for evaluation in this model are derived from the requirements of system users. The research used a case study to demonstrate how the proposed model can be utilized. Stakeholder requirements were translated into multiple system features through QFD; AHP was then used to determine the relationship weightings consistently.

Such models may aid decision makers in the pre-implementation phase, but even when deploying the best and most appropriate system according to user's requirements, post- implementation research is vital for assessing the actual usage. In fact, HEIs who deployed VLEs rarely discontinued using them, which justifies the need for more post-implementation studies, either case-based or general. Moreover, it has been argued that even when educational technology projects are described as successful, the lack of explicit design for pedagogical change within these projects results in "no significant difference" being realized on pedagogical outcomes when compared to more traditional teaching and learning approaches

(Reeves, 2005, 2006 as cited in Cochrane, 2012), which also suggests the need for more research that addresses the post-implementation phase.

The next sub-section will elaborate on the VLEs' structure and components.

2.6.2 VLE Structure and Components

Clearly, VLEs are intended to support students in their learning and tutors in their teaching. These two tasks differ in many ways; students, for example, use VLE as end users, both accessing and interacting with the VLE. Tutors, on the other hand, can play dual roles; they first create a course within the VLE then interact with it as users (McGill & Hobbs, 2008).

VLE systems comprise different components that serve both tutors and students differently.

In typical VLE systems, courses are created and then assigned to instructors. Students enrol either automatically, if the system is synchronised with the HEI student information system, or can be added by the system support team. Blackboard's components will be enlisted here as an example. Blackboard consists of several components for both academics and students on the Blackboard Learn platform: Course Management; Grading and Assessment; Collaboration; and Engagement.

Course Documents, which is part of the document management component, is a popular feature among academics and students, which enables the instructor to upload course materials and provide links to external materials. This feature is appreciated by students because of the availability of resources on a permanent basis. According to Crook (2002), students are usually satisfied with services that are not tied to a particular time or space and VLE systems exemplify such services. For academics, uploading course materials in advance simplifies the task of materials distribution and may minimize the need for printed materials.

Grading and Assessment components comprise mainly surveys, assignments uploads and submissions and the grade book. This component use, like the course

management component, differs, depending on the user role. Academics create surveys and then analyse the results, upload assignments with deadlines and assign grades to students based on viewable rubrics available to students. The grade book feature in particular may help by provide real-time grade viewing to students and may aid in minimizing students' visits to academic offices. Arguments from scholars about the use and advantages of such features will be presented in the advantages and disadvantages sub-section.

The next sub-section will discuss VLEs interactive facilities. It will start by describing such facilities, followed by a justification of the distinction between interactive and non-interactive facilities. After that, previous studies conducted on these facilities in particular will be presented.

2.6.3 VLE Interactive Facilities

VLEs in HE are arguably not merely courseware for teaching purposes, but should be seen as comprehensive computer-mediated information systems that can be used for teaching, information search, community communication and providing and receiving services (Lin & Ha, 2009). Therefore, the interactive facilities of VLEs are important and they distinguish VLEs from other document management tools, such as network shared drives.

Commercial and open-source VLEs have different interactive facilities and they serve different purposes. Interactive and communication facilities in VLEs in the classroom context are mainly asynchronous; unlike VLEs for distance education, where instructors communicate with students on a real-time basis (synchronous). Interactive facilities in VLEs include direct messaging, emails, announcements and bulletin boards. Such facilities tend to increase the level of communication among students and academics, which in turn leads to a feeling of being connected to each other. Such a feeling has been referred to as *Social Connectedness*. Social connectedness is defined as “an internal sense of belonging and the subjective awareness of being in close relationship with the social world” (Lee& Robbins, 1998, p. 338 as cited in Costen, 2009).

Interactive facilities in VLEs have received attention from scholars (see Lin & Ha, 2009; Costen, 2009; Payne & Reinhart, 2008; Lonn, et al., 2011 and Schworm & Gruber, 2012). This attention can be attributed to the perceived direct link between VLEs and pedagogy. Traditional pedagogy is based to a great extent on teacher and student interaction in the classroom regardless of the teaching style (constructivist or behaviourist). Without interactive facilities, VLEs will be a document management system only, which may not justify budgets, effort and time invested in them.

According to Schworm & Gruber(2012), the availability of virtual workspace offers a good opportunity to integrate university courses with other cooperative learning tasks. Both synchronous and asynchronous communication tools enable students to communicate and work together regardless of time and space boundaries. Students may exchange documents and they can ask questions which can be answered by peers and teachers. Such benefits distinguish VLE from other document management tools.

Payne and Reinhart (2008) conducted a study to investigate to what extent the VLE system supported constructivist pedagogy and how well it supported conversation. This study is relevant as conversation is a type of communication; in order for conversation to occur, interactive tools are mandatory. This library-based research reviewed the basic pedagogical orientation of VLE, as represented by analysts, while at the same time offering an analysis of the impact of these theoretical positions for learner activity within VLE. It compared VLE structural design, with its ability to support learning that is based on collaboration (learner-centred), to traditional methods based on learner isolation and individualization (teacher-centred). Findings from the study suggested that VLE is more behaviourist than constructivist; this is a surprising finding, as VLEs are promoted with the claim that they support student-centred learning.

Lin & Ha (2009) is one of the few papers that conceptualize VLEs as a computer-mediated Communication Information System (CIS). The focus of their paper was on the factors influencing organizational member's use of Blackboard; the main goal of the study was to demonstrate the role of sub-cultures in shaping technology use in HEIs. The study was conducted at Midwestern State University in the US

with about 2,500 full-time faculty and staff members. The rationale behind choosing this setting was the use of the Blackboard interface for the entire portal of the university's intranet site as well. This usage promoted Blackboard from courseware for teaching purposes only to a comprehensive computer-mediated information system that can be used for information search, teaching, providing and receiving services from the university, and community communication. In such a setting, it was important to group users depending on their tasks; for example, faculty were put in one group, as the main purpose for them using the system was teaching. Administrative staff were put in a different group based on their tasks. The study was conducted, adopting a mix-methods approach, and it concluded that social influence on technology use is related to sub-cultures in organizations.

Another study that investigated the impact of interactive facilities is Costen (2009), which focused on bulletin boards. This study addressed students only and explored to what extent using a VLE, and the discussion board in particular, impacted on student learning in two courses on hospitality, restaurant and tourism management programmes. This study is one of the few studies that have addressed the impact of VLE on students' learning qualitatively, as most studies that addressed the issue were quantitative. For the sake of data collection, the researcher drafted three statements to allow students to share their views about using the VLE. The responses were analysed using qualitative analysis software. The researcher administered the survey to students on two core courses on Hotel, Restaurant and Tourism Management majors at the University of South-eastern US. The study concluded that VLE tools participated in creating an online collaborative learning environment was more student-centred; in addition, students developed a more thorough understanding of course concepts through discussion boards and commenting and reading each other's comments on them; moreover, students engaged more frequently with the material posted on VLE and were comfortable doing so online. Results from this study contradicted Payne and Reinhart (2008) who suggested that VLEs are more behaviourist than constructivist.

Lonn et al. (2011) conducted a comparative study between a large residential university and a small commuter one, and focused specifically on the types of communication that occurred in the VLE systems deployed by both campuses. Furthermore, it explored the differences in use between both campuses. The study

used online surveys and system log data, and concluded that, although all instructors and students rate VLE activities and tools quite highly, statistically significant differences in use exist between campuses. It suggested that further studies in the structure of courses in both campuses may help instructors and learners make use of the VLE system to its fullest potential. This study in particular reflects the need for further studies that address the issue in more depth; in addition, it reflected the importance of interactive tools and their impact on both students and academics.

It can be observed from the studies reviewed that users perceive VLE as a communication enhancing tool. Nevertheless, generalization is not appropriate as all the studies conducted were context-based. In addition, there is no evidence from the literature reviewed that VLEs are either behaviourist or constructivist; it depends on the context and users.

The next section will provide an example of a basic VLE system structure.

2.6.4 VLE Basic Structure Example

For the purpose of writing this section, the researcher acquired access to a full demonstration of Blackboard Learn release 9.1. The demonstration allowed access to both faculty's and student's views.

Faculty View (see Appendix 1(Faculty's View))

As was mentioned, faculty members use the system as end users and creators. Their view allows them to create courses, add documents, create tests and groups and establish discussions. The homepage of the faculty view in Blackboard Learn includes the following items:

Feature		Description
Announcements	Asynchronous	This feature allows instructors to post announcements to be viewed by students. Students receive emails that a new announcement is posted if this feature is chosen by the instructor. Instructors can manage the duration of announcements and their visibility
Tasks	Personal	Tasks is a personal space for an instructor to

		manage his/her own tasks
Calendar	Personal	A space to manage appointments, events and tasks
To Do	Personal	Another space to manage tasks
What's New	Personal	A notifications space
Alerts	Personal	A space to manage personal alerts

The faculty view in Blackboard Learn also includes the following features and tools:

Feature		Description
Build Content	Asynchronous	In this feature, instructors can add files, videos, images, links, modules and the course syllabus. Instructors can also create new pages and folders and add Mashups such as YouTube videos or Flickr photos
Assessments	Asynchronous	In this feature, instructors can create tests, surveys, assignments, self and peer assessments and McGraw-Hill assignments and assign them to students or group of students
Tools	Asynchronous/Synchronous	This tab contains different features either synchronously, such as virtual classrooms and chats, or asynchronously, such as blogs, journals, discussion boards and groups
Grade Centre	Asynchronous	This feature allows instructors to assign grades for each assessment individually to be viewed by students

Instructors can build content and other materials either under Information or under the Contents folder. If the item was created in Information, for example, it will be viewed in the Course Information in the student's view (which will be described below).

Student's view (see Appendix 2 (Student's View))

In VLE, students use the system as end users; they follow instructor's instructions and act according to them.

The student's view in VLE includes the following features and tools:

Feature		Description
Announcements	Asynchronous	In this section, students receive announcements posted by their instructors. They can only view them.
Course Info	Asynchronous	This section includes all items created by instructors in the information section
Course Materials	Asynchronous	This section includes all items created and posted in the contents section by instructors
Course Resources	Asynchronous	This section includes external links and other resources added by course instructors
Discussions	Asynchronous	Includes discussion topics created by instructors
Tools	Asynchronous /synchronous	This section includes most of the features provided by the system, such as announcements, journals, discussion boards, grade centre and other features

The next sub-section will explore the advantages and disadvantages of VLEs from different perspectives and will include results from previous studies.

2.6.5 VLE Advantages, Challenges and Previous Research

As has been mentioned, VLE deployment is now routine in HEIs. In fact, HEIs who deployed VLEs rarely discontinued using them. As a result, discovering advantages and disadvantages will depend to a great extent on real case studies and empirical studies. However, due to the fact that the phenomenon is considered new (VLEs have become popular in the past ten years), studies are still in their infancy. The researcher will attempt to analyse advantages and disadvantages, based on the limited literature available on the subject.

When analysing the advantages and challenges of VLE systems, it makes more sense to argue that system use is the distinguisher. If advantages and challenges are to be analysed from an Information System (IS) viewpoint, they maybe attributed to system success and failure. For this research, analysing advantages and challenges by analysing features is more relevant to the research and will aid in formulating questions in the qualitative part of the study, and so is the main goal of the literature review at this stage.

The main perceived advantage of VLE systems is ease of communication. Communication is an important aspect in teaching and learning processes. According to ABDELAZIZ (2013), throughout the ages, educational practices have been shaped and influenced by dominant forms of communication, and educators of the time experienced great anxiety in the transition from one age to the next (Thornburg, 1996 as cited in ABDELAZIZ, 2013). It is true that communication was an important skill in the industrial age, nevertheless it has become arguably the most important skill during the current digital age (Abdelaziz, 2013). The importance of communication in education is obvious, and educational technology creators have realised this and are promoting their products to cater for it. According to Jusoff and Khodabandelou (2004), blended learning (which is based on VLE use) increases interaction between students and their instructors and decreases the distance. In addition, blended learning that is based on social constructivist theory increases collaborative activities and interaction between students through tasks and activities both in and out of class (Tan et al., 2005 as cited in Jusoff & Khodabandelou, 2009). Bonk and Graham (2006) categorized the advantages of the blended learning system (which VLE is being presented through)

into three categories: flexibility, pedagogic richness and increased cost-effectiveness. Flexibility can be attributed to the availability of the system both on and off-campus. In addition, the fact that academics can post materials in advance and make them available to students could ease the stress of having to printout materials for all students. In addition, instructors can post grades for students as they finish correcting assignments, which eases the stress of having to wait for the instructor to provide grades individually to students. Pedagogic richness is linked to the claim that VLEs support and promote constructivist pedagogy, which in turn supports a student-centred learning approach. Increased cost-effectiveness can be attributed to less paper used for lectures and less office time spent by instructors. Gómez & Rodríguez-Marciel (2012) after reviewing the literature of VLE (Dale, Holland & Matthews, 2006; Dillenbourg, Schneider & Synteta, 2002; Hsiu-Mei, Ulrich & Shu-Sheng, 2010; Kalay, 2004; Piccoli, Ahmad & Ives, 2001; Shih-Wei & Chien-Hung, 2005; VanRaaij & Schepers, 2008) reached a conclusion that corroborate Bonk & Graham (2006) in terms of flexibility.

Authors have also concluded that a large part of VLE success as an educational tool is not only owed to flexibility, interactivity and versatility as well as playing vital roles. Flexibility allows different types of contents to be distributed in many formats, such as text, video, graphics or hypertext, at anytime to any place. Interactivity is based on the fact that they have bidirectional communication channels that allow different types of communication to take place; and on the versatility of their functions in a single learning environment. In this sense, it has a single versatile system where it can act as a single point of communication between academics and students.

For the challenges, Bonk and Graham (2006) categorized the issues and challenges faced by blended learning adopters (VLE users in this case) into six categories:

1. The role of live interaction: it could be challenging to get the student to participate in live discussions through the system unless it is graded.
2. The role of learner choice and self-regulation: learners could feel that they are not obliged to attend sessions, for example, if materials and links are provided in the VLE system.
3. Models for support and training: users can feel less motivated if they have not received sufficient training.

4. Finding a balance between innovation and production: using the system could be time-consuming if users decide to use most of the features offered.
5. Cultural adaptation: decision makers should make sure that the materials provided through the blended approach are applicable to the local culture.
6. Dealing with the digital divide: if such systems are to become mandatory, decision makers should make sure that all users have equal access to the system and try to find solutions for users who find technology use a challenging task, and for users who do not have access to computer facilities outside campus.

Jackson & Fearon (2014) introduced a table that summarized VLE adopting barriers for different stakeholders (see Figure 7: Barriers to VLE Adoption).

These barriers mostly corroborate with Bonk & Graham (2006), who propose new barriers, such as lack of personal interaction with tutor and information overload, from students perspectives, and managerial barriers, such as poor change management and lack of user involvement.

Barrier	Challenge	Citation
Teacher-centred	Not possessing the necessary technological skills/knowledge	Bhati, Mercer, Rankin & Thomas, 2009; Konstantinidis, Tsatsos & Pomportsis, 2009; Lingard, 2007; O'Donoghue, 2006; Sinayigaye, 2010.
	Time/workload constraints	Corral & Keates, 2011; Heaton-Shrestha, Edirisingha, Burke & Linsey, 2005; Kirkup & Kirkwood, 2005; Mihailova, 2006.
Technical-related	Lack of interest	Corral & Keates, 2011; Keller, 2006; Mihailova, 2006; Lingard, 2007.
	Concerns that technology undermines the quality of teaching	Heaton-Shrestha, Edirisingha, Burke & Linsey, 2005; Mihailova, 2006; Sinayigaye, 2010.
Student-related	Interoperability issues	Black, 2008; Corral & Keates, 2011; Harris, 2005; Saumure & Shiri, 2006; Voss & Procter, 2009.
	Reliability of technology	Gray, Plaice & Hadley, 2009; Sidorko, 2009; Warburton, 2009.
Institutional	Problems with systems access—authentication, firewall and security issues	Corral & Keates, 2011; Donaldson, 2010; Greasley, Bennett & Greasley, 2004; Mihailova 2006; Virkus, Alemu, Demissie, Kokolari, Estrada & Yadav, 2009.
	Lack of personal interaction with the tutor	Corral & Keates, 2011; Mihailova, 2006; Sinayigaye, 2010.
Managerial	Information overload	McConnell, 2006.
	Lack of funding/resource constraints	Bhati, Mercer, Rankin & Thomas, 2009; Lingard, 2007; Virkus, Alemu, Demissie, Kokolari, Estrada & Yadav, 2009.
Managerial	Culture and political issues—interdepartmental rivalry, competition, territoriality, resistance to change	Black, 2008; Corral & Keates, 2011; Hall & Zentgraf, 2010.
	Poor change management	Jackson, 2011; Pretorius, 2010; Virkus, Alemu, Demissie, Kokolari, Estrada & Yadav, 2009.
Managerial	Lack of user involvement/communication	Jackson & Philip, 2010; Pretorius, 2010; Voss & Procter, 2009.
	Unplanned/uncoordinated implementation strategies by management and policy makers	Bhati, Mercer, Rankin & Thomas, 2009; Lingard, 2007; Pretorius, 2010.
Managerial	Issues of training	Corral & Keates, 2011.

Figure 7: Barriers to VLE Adoption (Jackson & Fearon, 2014)

Despite the above mentioned advantages and challenges, the fact remains that many academics only use the system for housekeeping activities as mentioned in the VLE Types sub-section. Course document is the most frequently-used feature in VLE systems which may suggest that interactive facilities are not being used as anticipated. The adoption of the new pedagogical methods requires new teaching and learning skills, and it is argued that students and tutors may not be sufficiently prepared to be successful in an e-learning environment (McPherson & Nunes, 2004, as cited in McPherson & Nunes, 2008). Therefore, context- and cultural-based research is vital, which justifies the need for this study.

Many previous studies have been conducted on the phenomenon of VLE in HEIs; most were quantitative and served different objectives.

McGill and Hobbs (2009) and McGill and Klobas (2009) used task-technology fit to assess the use of ICT in HEIs, which can be defined as “the degree to which a technology assists an individual in performing his or her portfolio of tasks” (McGill & Klobas, 2009, p. 216). In the case of VLE, the tasks are teaching for academics and learning for students. McGill and Hobbs (2009) in their study focused on whether students and instructors differed with respect to perceptions of the level of task-technology fit of VLE; while McGill and Klobas (2009) used task-technology fit to assess the success of VLE in enhancing students’ learning. McGill and Klobas (2009) studied targeted students from Australian universities who used WebCT in their courses, and data was collected through online surveys. It was concluded that task-technology fit played a vital role in the utilization and success of VLE.

Likewise, McGill and Hobbs (2009) used the same sample of students and added a sample of instructors from the same university. Their study concluded that while instructors perceived that they had high levels of support in their use of WebCT, they did not perceive the system as being supportive to their teaching activities; this perception contrasted with the students, who believed that the system supported their learning activities. Such studies addressed the main anticipated usage, which is the utilization of these systems in the actual learning process; and while McGill and Hobbs’ (2009) study concluded that students perceived the system as being supportive in their learning, the study cannot be generalized as it is context based, like most VLE studies.

Another study in student’s usage in particular is by Lust et al. (2011). In their study, they investigated whether tool-use differences among students reflected distinct tool-use patterns or user profiles. Their rationale is that contemporary VLE research is mainly focused on students’ use of a specific tool. Thus, it is still unclear how students use different tools simultaneously. Students in the study were expected to fall into one of these categories: non-users, the ones who do not use available tools; incoherent-users, the ones who use face-to-face methods and the VLE tools that have direct links with face-to-face; and intensive-users, the users who use all available tools. The study used a sample of students from a first year undergraduate

science course, and information was extracted from the Blackboard system's log data. It was found that students differed in using the various tools and these differences reflected the three tool-use patterns or user-profiles, mentioned above.

A significant number of studies on the issue of VLE adoption and success have been conducted using the Technology Acceptance Model (TAM) proposed by Fred Davis (Davis, 1989, as cited in Arenas-Gaitán et al., 2011), which has been used in much research in the context of e-learning. The model uses Perceived Usefulness and Perceived Ease of Use to predict user's intentions in technology use and acceptance.

Ngai et al. (2007) extended the TAM model to include technical support as a precursor, after which they investigated the role of the extended model on the adoption and acceptance of WebCT (the VLE in the study). The study aimed to determine the current use of VLE in Hong Kong HEIs, identify factors affecting the acceptance of such systems and to develop a model for the acceptance of VLE in Hong Kong, based on TAM. The study used empirical data collected through a questionnaire survey, and concluded that technical support was found to have a direct effect on perceived usefulness and perceived ease of use.

Sanchez-Franco (2010) in his study incorporated the element of Perceived Affective Quality into the original TAM. His study examined learners' interest in e-learning technologies to determine their acceptance of the system as a mean of class delivery. The VLE investigated in this study is WebCT, which was conducted at the University of Seville, Spain. Methods used, like most studies targeting students, were quantitative, represented by online surveys.

Few studies have addressed the issue of VLE usage from the academics' perspective. Some that have are Kidd (2010), GAO, et al. (2009), Al-Senaidia, et al. (2009) and Jackson & Fearon(2014).

Kidd (2010) has qualitatively explored the lived experiences of faculty who adopted ICT in a higher education setting (University of Georgia) for teaching and learning purposes. In this auto-ethnographical study, participants were asked to answer questions that reflected their actual experience with the system. The study concluded that, in order for faculty to be able to adopt a technology, they need to

familiarize themselves with it, utilize it and incorporate it into their professional practice.

GAO, et al. (2009) conducted research on pre-service teachers in Singapore. While it is true that this research was empirically conducted in a HE setting, reviewing this study is however relevant, as school teachers and academics resemble each other in their work nature. Moreover, this study discussed constructivist pedagogy and student-centred learning and their link to technological advancement, which is a core concern of this research. This mixed-methods study explored a cohort of pre-service teachers' mechanisms of learning to teach with ICT across their teacher preparation programme in Singapore. The study focused on whether pre-service teachers in Singapore used ICT, and why and how they used it. The study contributed to the knowledge base of initial teacher preparation by providing information on how to better prepare pre-service teachers to become technology-competent teachers and change-agents for technology integration.

Al-Senaidia, et al. (2009) is a quantitative study which investigated the perceived barriers to adopting ICT in Omani HE from academics' perspectives. The study was conducted at the College of Applied Sciences in Oman and 100 faculty members participated. From the administered survey, which was developed based on western literature, four factors were extracted: lack of equipment, lack of institutional support, disbelief of ICT benefits and lack of time. This study is significant as it was conducted in the Omani cultural context, which resembles the Saudi context.

Jackson & Fearon (2014) is among one of the few studies that address the issue of VLE adoption qualitatively and from an educators' perspective. It studies the role and influence of expectations management in realising benefit success when adopting a VLE, and resulted in formulating a conceptual expectations management model (see Figure 8). This model, which was based on a discussion of findings from Further and Higher Education Colleges in the UK, was developed to explore the factors influencing the formulation and realisation of expected benefits from a case study of VLE adoption overtime (2003-2012). Researchers offered key lessons learned from the study: avoid unrealistic expectations; stay clear of false expectations; and that managing expectations is an emergent, not a static, process.

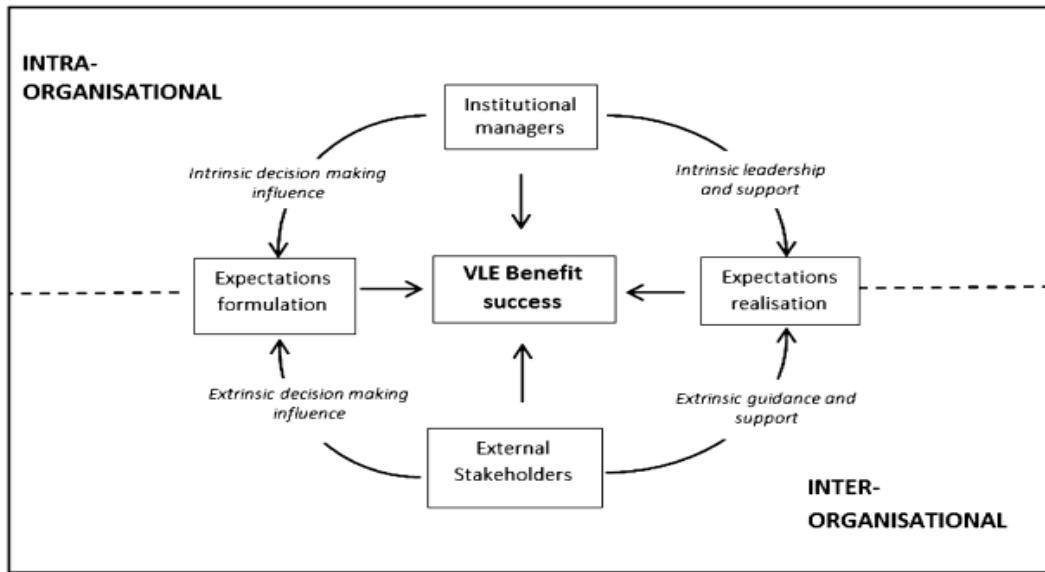


Figure 8: A conceptual expectations management model (adapted from Fearon & Philip, 2005) (Jackson & Fearon, 2014)

This sub-section has discussed perceived VLEs' advantages and disadvantages; in addition, it has presented a number of previous studies on the VLE phenomenon conducted in different contexts. The next section will discuss the VLE phenomenon and its presence in the literature on Saudi Arabia.

2.7 VLEs in Saudi Arabia

This section discusses how e-learning in general, and VLE in particular, are presented in the literature in Saudi Arabia. The section starts by an explanation of how ICT expenditure in Saudi Arabia is important. It is important to provide a generic background of the country to set the scene for the case study, therefore a background was presented at the introduction chapter (see 1.2 **Error! Reference source not found.**) After this, previous studies in the Arab world, in particular on Saudi Arabia, are discussed.

The utilization of ICT in Saudi Arabia has been a priority for decision-makers. In order to be compliant with King Abdullah's decree to establish a national plan for the utilization of IT in all sectors, the National Centre for E-learning and Distance

Education was established. This centre provides technical support as well as the tools and means necessary for the development of e-learning content.

The principal goals of this centre are:

1. To spread e-learning applications and solutions to all higher education institutions in accordance with the best quality standards.
2. To facilitate capacity building for higher education institutions by using learning and applications solutions.
3. To widen technical awareness and e-learning knowledge, which will help build a knowledge-based society.
4. To facilitate conducting and evaluating e-learning projects.
5. To support research and studies in the field of e-learning and distance learning.
6. To set standards for e-learning courseware production and publishing.
7. To provide consultancy in the field of e-learning and distance learning.
8. To build and distribute educational software applications that support educational processes in both the public and private sectors.
9. To encourage best projects on e-learning and distance learning in higher education institutions.
10. To hold seminars, workshops and conference that will add value to e-learning & distance learning.
11. To establish international links with the best leaders in the e-learning field (National Center for E-learning and Distance Education, The Goals, 2012).

It can be observed that the utilization of e-learning in its broadest sense is a goal in the Kingdom of Saudi Arabia; however, in the Kingdom, private and public institutions are different. Public HEIs are funded and operated by the government and students study free of charge, in addition to them receiving monthly allowances. On the other hand, private HEIs are fee-based institutions, and, according to the Ministry of Higher Education (which is the licensing organization), private HEIs should be non-profit making and must be linked to a charitable organization (Ministry of Higher Education, Private Colleges List, 2012);

nevertheless, they are built based on different managerial and educational models. Dar Alhekma College, for example, which was the first private HEI for women, in Jeddah, was built based on the Texas International Education Consortium (TIEC) model (see (Texas International Education Consortium, 2012)), and the College follows the American model in curriculum development and in their educational system. Both private and public institutions share the similarity of being gender segregated (except King Abdullah University of Science and Technology, KAUST). As a result of the generic differences between private and public HEIs, context-based studies that apply to private institutions may not apply to private ones. Therefore, there is a continuous need for context-based research, which the current body of literature lacks.

There are a few studies that address the issue of ICT in general in Arab countries, such as Egypt, Jordan, Kuwait and Bahrain. While Arab countries bear some resemblance to Saudi Arabia in terms of culture, generalization is not relevant. Most HEIs in Arab countries are not gender segregated, unlike Saudi HEIs, where all HEIs are fully segregated. In addition, Gulf countries are categorized as developing countries; but obstacles of integrating ICT in HE that apply to developing countries, such as availability of equipment, sufficient equipment, up-to-date equipment, maintenance of equipment, infrastructure, staff training and development, technical staff support, vision and incentives, time factors and other support issues (Wee & Abu Bakar, 2006), are not applicable to oil-rich Gulf countries. Saudi Arabia, for example, is the world's largest oil exporter and the government allocates large budgets for education in general and HE in particular. It can be said, that budgets and lack of resources are not barriers to ICT exploitation in Saudi HEIs, which opens the door to the argument that cultural and organizational issues are the vital ones.

The area of e-learning in general and VLE in particular in Saudi Arabia can be considered under researched. During my attempts to find studies that adRise the issue in ERIC and Social Science Citation index; I discovered that there is a lack of new insights in the issue in the literature. Moreover, there is little research on the application of e-learning in Arab countries, such as Lebanon, Jordan and Egypt. Abouchedid and Eid (2004) in their study addressed the issue of e-learning

challenges in the Arab world. E-learning in this study refers to distance learning, which is different from blended learning.

One of the few studies that address the issue of VLE perceptions in the Arab world is Al-hawari and Mouakket (2010). This quantitative study used the Technology Acceptance Model (TAM) to highlight the significance of the model's factors on student's e-retention and the mediating role of e-satisfaction within the United Arab Emirates (UAE) e-learning context.

The need for empirical and context-based research is obvious, and due to the nature of the phenomenon and its direct link to pedagogy, qualitative and mixed methods research is needed. Full explanations of the rationale behind choosing qualitative and mixed-methods research will be provided in Chapter 3, the Methodology chapter.

2.8 Chapter Conclusion and Discussion

Chapter 2 has looked at the phenomenon of VLE worldwide. It started by setting the scene for the phenomenon's use by defining classroom structures and discussing different teaching and learning styles within the context of the classroom, followed by discussing teaching and management styles in women-only HEIs. After that, a discussion of the technology role in the learning process and teaching styles was presented. Next, technology usage within classrooms in HEIs in general was discussed, followed by VLE deployment and usage. The chapter ended by discussing ICT in Saudi Arabia, as VLE research is lacking in the literature.

From the reviewed literature, it can be observed that, despite the efforts made to promote commercial VLEs as a student-centred learning enabler, and the context-based studies that seconded that claim, VLE can be seen in practice as a neutral tool, neither behaviourist or constructivist.

From the chapter, the following points can be extracted:

- Classrooms in principle have not changed throughout history;
- Technology use is a trend in HEIs;

- From the literature, the behaviourist teaching style is the dominant one in different educational settings;
- VLE systems are being promoted worldwide as a constructivist tool, but from the previous studies reviewed VLEs in practice are neither constructivist nor behaviourist;
- VLEs' role depends to a great extent on the users' behaviour, and whether VLE promotes/changes pedagogy remains blurred;
- The decision to deploy VLE is a strategic one and models of deployment and system use promotion/enforcement depend on the leadership style in the HEI;
- Most of the studies conducted on the phenomenon were quantitative, which opens the door for more in-depth context-based studies;
- In Saudi Arabia, there is a lack of empirical studies on VLE deployment in HEIs.

Chapter 3 Research Methodology and Design

3.1 Introduction

The current chapter presents and discusses the chosen methodologies for the study.

This study aims to investigate the perceptions of change in teaching practices due to the deployment of VLE systems in Saudi HEIs from academics' perspectives. In order to achieve the research objectives and answer the research questions, an appropriate methodology needed to be adopted.

According to Silverman (2009), 'methodology' refers to choices made by the researcher in terms of cases to study, methods of data gathering, forms of data analysis, etc. in planning and executing a research study.

The chapter is constructed as follows.

Section 3.2 explains how theoretical understanding of the topic was created. Such explanation is important as it will demonstrate how the topic was chosen and how research question was formulated.

Section 3.3 features research philosophical perspectives. Such an approach is important as it guides the research design and determines the researcher's position in the study. The section also features chosen research strategy with justifications.

Section 3.4 explains research methods. It includes descriptions of qualitative research strategy, data collection tool (semi-structured interviews) and data analysis tool (thematic analysis).

Section 3.5 discusses the research design. It includes information about research context, how data was collected and handled and how participants were identified.

Section 3.6 explains ethical issues. It provides information in how this research adhered to the strict ethical considerations imposed by the University of Sheffield.

Finally, section 3.7 features research quality. A chapter summary followed in section 3.8.

3.2 Creation of Theoretical Understanding: Use of Existing Literature

It is important before deciding on a research topic to review the literature on the chosen research field. Such a review equips the researcher with knowledge of the previously conducted research in the field, the different methodological approaches adopted and different stakeholders tackled by research.

The researcher's Master Dissertation, which was done to fulfil the requirements for her Master's degree from Lancaster University Management School, Information Technology Management and Organizational Change course, was about the deployment and impact of VLE systems in the same chosen research context, Omega College. In that study, the researcher examined students' and academics' perspectives to determine the impact of VLE.

Suggested future work from the study included further studies in ICT solutions deployment in Saudi Arabia that tackles different stakeholders and aid in guiding investments. Therefore, when the researcher decided to pursue her PhD studies, she proposed a study that extended the one conducted during her Master's dissertation.

When conducting her Master's dissertation, the researcher reviewed relevant literature in the field, and he accessed further literature when she was preparing her PhD research proposal. For that purpose, the researcher reviewed literature mainly from Social Science Citation Index and ERIC (Education Resources Information Centre). Google scholars were used as well as guidance.

Keywords such as Virtual Learning Environment, VLE, Course Management System, CMS, Learning Management System, LMS, e-learning, and ICT in Education were used.

The researcher identified a gap in studies that tackles academics and students together, as studies mainly tackled students, and were mostly quantitative in approach.

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The original research proposal in her first year at the Information School aimed to investigate the impact of VLE deployment on academics and students; the proposed research strategy was mixed-methods.

The researcher had to change supervisors after one year. Therefore, she started a new research proposal, and, it was agreed with the supervisor that the researcher would tackle perceptions of change of teaching practices due to VLE from academics' perspectives, using a mixed-methods approach.

Based on the reviewed literature, research aims, question and objectives were formulated. After data were collected, it was finally decided that the research would be qualitative only (see 3.4 Research Methods).

Although it was agreed that the study would be inductive, the researcher reviewed the literature presented in Chapter 2. This review was important to equip the researcher with knowledge that will allow her to formulate informed interview scripts (see 3.2 Research Methods). And for that sake, literature in the history of schooling systems, learning styles and strategies, e-learning, technology in education and VLE were reviewed.

Keywords such as technology and pedagogy, e-learning, student-centred learning, blended learning, ICT in education were used to search within ERIC and Social Science Citation Index. Search included, but was not limited to the mentioned keywords, and results yielded were chained bearing in mind that studies need to be current. The researcher used older studies in teaching and learning styles in order to compare and contrast different learning styles and strategies before and after ICT in education. The researcher chained specific journals within databases that are directly related to the use of technology in education, and she only stopped searching when same results started yielding with the use of different keywords. At that point, she started the writing up of literature review.

Another round of literature review was carried out in order to update Chapter 5, Discussion and Conclusion. This round was also used to update the current literature review presented in Chapter 2.

3.3 Research Approach

3.3.1 Philosophical Considerations

According to Creswell (2009), when a researcher is planning a project, s/he needs to think through the philosophical world-view assumptions that they bring to the study. These assumptions are encompassed by two widely used terms, epistemology and ontology.

According to Bryman (2008), an epistemological issue concerns an enquiry into what is regarded as acceptable knowledge in a discipline. In other words, epistemological assumptions are concerned with what types of knowledge are possible, in addition to the criteria for deciding when knowledge is both legitimate and adequate (Blaikie, 2000). On the other hand, ontological assumptions are concerned with the nature of social reality and about what kinds of social phenomenon do or can exist, the conditions of their existence and their relationships with each other (Blaikie, 2000).

According to Bryman (2008), social scientists can take either interpretivist or positivist epistemological positions, and either objectivist or constructionist ontological positions.

Positivism is an epistemological position that “advocates the application of the methods of natural sciences to the study of social reality and beyond” (Bryman, 2008, P. 13), while interpretivism is “a term that usually denotes an alternative to the positivist orthodoxy” that has held sway for decades.

It is predicated upon the view that a strategy is required that respects the differences between people and the objects of natural sciences, and therefore requires the social scientist to grasp the subjective meaning of social action” (Bryman, 2008 , P. 16).

In this research, the objective is to study the perceptions of change in teaching practices resulting from the deployment of VLE systems through the examination of the lived experiences of academics; and, as such, examination is not achievable through the methods of the pure natural sciences, so the researcher will therefore adopt the interpretive approach.

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According to Lee (1991), the interpretive school of thought believes that people, and the social and physical artefacts that they create, are radically different from the physical reality examined by natural science. Therefore, the same human action, the same physical artefact or the same institution can have different meanings for different human subjects; and the same applies to the observing social scientist.

Social scientists in the interpretive school of thought should bear in mind that a deep understanding of subjective meanings for human behaviours is crucial for gaining insight and being able to produce reliable observational findings.

According to Orlikowski and Baroudi (1991), the interpretive approach “motivates investigations into how humans enact a shared social reality through understanding human behaviour from the point of view and intentions of the human actors themselves” (p. 18).

Based on this, the epistemological position that best fits the research is interpretivism.

With regard to ontological positions, constructionism is the approach that best fits the study.

According to Bryman (2008), constructionism is an “ontological position that asserts that social phenomenon and their meanings are continually being accomplished by social actors” (p. 19).

Thus, the researcher in this study adopts the interpretive approach and constructionism will be considered from the interviewee’s perspective.

In other words, the researcher will prepare questions based on the interpretive epistemological position, and during interviews the researcher will bear in mind the constructionist ontological position from the interviewees’ perspective, if possible.

This approach better fits the study than the objectivist approach. An objectivist ontological position is “an ontological position that asserts that social phenomenon and their meanings have an existence that is independent of social actors. It implies that social phenomenon and the categories that we use in everyday discourse have an existence that is independent or separate from actors” (Bryman, 2008 , P. 19).

This concept is not relevant to this research due to the nature of the research described above.

3.3.2 Research Strategy

The study aims to investigate the phenomenon of VLEs in Saudi HEIs. Although the issue of VLE deployment and usage has been discussed by scholars both quantitatively (see Arenas-Gaitán, et al., 2011; Lust, et al., 2011; Lonn & Teasley, 2009; Ngai, et al., 2007; Sanchez-Franco, 2010; Gong, et al., 2004; Ndubisi, 2006; Al-hawari & Mouakket, 2010; Mun & Yujong, 2003) and less frequently qualitatively (see Kidd, 2010 and Gao, et al., 2009), nevertheless, there is a lack of research that discusses the issue of VLE deployment and impact on Arab HEIs in general and in Saudi Arabia in particular.

In fact, Saudi HEIs are different in nature. They are all gender segregated and there are differences between public (free, government run) and private HEIs.

As a result, generating a theory from the literature and testing it in Saudi HEIs may not be relevant.

In order for the researcher to try and adopt a research strategy that best fits the research and would aid in answering the research questions, she attempted to examine different possible research strategies to choose the one that best fit the study.

According to Blaikie (2000), the choice of research strategy can be perceived as one of the most important research design decisions. According to him, knowledge can be advanced in the social sciences only by using one or a combination of four research strategies: the inductive, deductive, retroductive, and abductive (see

Table 1: Logics of four research strategies (Blaikie, 2000, p. 84)).

After examining different strategies, it was discovered that the strategy that best fit the research is inductive. In fact, it is the strategy that best fits the interpretivist school of thought adopted for this research.

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Deductive strategy does not fit the study, as has been mentioned, generating a theory from the literature and testing it in Saudi HEIs is not relevant due to the novelty of the phenomenon in this context.

A retroductive approach, which is “suited to finding theoretical patterns, or deep structures, if valid will help in conceptualizing the empirical and deductive patterns that are observed in a single case” (Saether , 1998, p. 246). This strategy combines both inductive and deductive, and in this case this strategy is not relevant as it is not possible to generate a theory from the literature to test out in the first instance.

Abductive, or in other words, Systematic Combining, “is a process where a theoretical framework, empirical fieldwork, and case analysis evolve simultaneously, and it is particularly useful for the development of new theories” (Dubois & Gadde, 2002, p. 554), which is not relevant either. It is true that the study will adopt a case study approach; nevertheless it is not relevant to base the study on a theoretical framework, due to the novelty of the phenomenon in Saudi HEIs, as mentioned previously.

In conclusion, the strategy that best fits the research is inductive.

	Inductive	Deductive	Retroductive	Abductive
Aim	To establish descriptions of the characteristics and patterns	To test theories, to eliminate false ones and to corroborate the survivors	To discover underlying mechanisms to explain observed regularities	To describe and understand social life in terms of social actors' meanings and motives
Ontology	Cautious, depth or subtle realist	Cautious or subtle realist	Depth or subtle realist	Idealist or subtle realist
Epistemology	Conventionalism	Falsificationism; Conventionalism	Neo-realism	Constructionism
Start	Collect data on characteristics	Identify a regularity that	Document and model	Discover everyday laid

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	and/or patterns. Produce descriptions.	needs to be explained. Construct a theory and deduce hypotheses.	regularity and motives. Describe the context and possible mechanism.	concepts and meanings. Produce a technical account from lay accounts.
Finish	Relate these to research questions	Test hypotheses by matching them with data explanations in the context	Establish which mechanism(s) provide(s) the best results	Develop a theory and elaborate it iteratively

Table 1: Logics of four research strategies (Blaikie, 2000, p. 84)

3.4 Research Methods

After deciding that this study is going to adopt an inductive research strategy, several methodologies were examined to decide on which one to adopt in order to respond to the research questions and achieve the research objectives.

Methodology can be seen as a systematic way to solve research problems, or in other words, to answer the research questions and achieve the objectives.

It is worth mentioning that the methodology chosen needs to take into consideration the research approach, which is inductive in this study, and the research design on which it will be applied (3.5.1 Case Study,).

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For this research, a case study design is adopted and the chosen research context is Omega College (see 3.5.1.1 Description of Case Study).

According to Bryman (2008), there are three main methodologies to tackle research in social science: qualitative, quantitative and mixed methods.

Quantitative research can be described as follows:

“Entailing the collection of numerical data, as exhibiting a view of the relationship between theory and research as deductive and a predilection for a natural science approach (and of positivism in particular), and as having an objectivist conception of social reality” (Bryman, 2008 , p. 140).

For data collection, quantitative approaches rely on methods such as structured interviews and self-administered surveys for data collection

Based on Bryman’s definition of quantitative research methods, it can be said that conducting this research quantitatively will not aid in answering research question and achieving research objectives. As mentioned, the chosen research strategy is inductive, and the chosen approach is interpretivism. Therefore, choosing a methodology that is based on testing pre-existing theories deductively will not aid in achieving this study’s research objectives. Therefore, quantitative methods do not fit this research.

On the other hand, qualitative research can be defined as;

“A situated activity that locates the observer in the world, it consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their

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natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them." (Denzin & Lincoln, 2005, p. 3)

Based on Denzin & Lincoln's (2005) definition of qualitative research, it can be said that a qualitative method fits this research and will aid in answering the research questions and achieving research objectives. To investigate the perceptions of change in teaching practices at Omega College, the researcher needed to study how academics used the system and interacted with it in order allow the researcher to interpret their accounts of system use in a way that would allow her to answer the research question.

The term 'mixed-methods research' refers to research that combines methods from the two main research strategies: qualitative and quantitative. Tashakkori and Teddlie (1998), as cited in Tashakkori and Teddlie (2003), defined mixed-methods research as follows:

"Mixed methods studies are those that combine the qualitative and quantitative approaches into the research methodology of a single study or multiphased study" (pp. 17-18).

Mixed-methods were considered for this research. In fact, the student submitted her PhD transfer report proposing that this study be conducted thus. However, after the researcher prepared her interview scripts and collected data from the research context and started analysing it, it was discovered that the 21 conducted interviews bore many similarities and that the researcher have achieved saturation in many categories.

It is true that the data analysis tool used was thematic analysis, which does not require data saturation to be achieved in all categories, unlike Grounded Theory. However, based on the interviews, it was realised that conducting the quantitative study would corroborate the theory generated from the qualitative study; therefore there was no actual need to conduct it, as the results from it were known in advance. It was then decided that the strategy followed in this study was going to be qualitative only.

3.4.1 Qualitative Research Strategy

This sub-section presents data collection methods followed by data analysis.

Data is the main element in any research. Accordingly, types of data and collection methods are two of the major decisions in any research. Methods of data collection need to be inline with the chosen research strategy, and should aim to answer the research question.

In qualitative research, there are several methods that can be used to serve the purpose of data collection, as follows:

- Ethnography/participant observation, where the researcher is immersed in a social setting for sometime in an attempt to listen to, observe and appreciate the culture of a social group.
- Qualitative interviewing, which refers to different kinds of interviews, such as semi-structured, where the interviewer has a series of questions that are in the general form of an interview schedule but which is flexible and usually the interviewer is able to re-order questions and ask follow-up ones; and unstructured interviews, where the interviewer has only a list of topics or issues.
- Focus groups refer to a specific type of interview where interviewees discuss issues in groups.
- Language-based approaches to the collection of qualitative data, such as discourse and conversation analysis, treats language as a central focal point.
- The collection and qualitative analysis of texts and documents (Bryman, 2008).

Interviews in the case of Omega College (case study research context) are more appropriate than the other data collection methods.

The study is a PhD project and is limited in time and resources; therefore ethnography is not applicable as it entails spending a significant amount of time at the research setting, which is not feasible in this study.

Focus groups are not relevant either, as the College is a diverse learning environment and academics vary in age and academic rank. In such an environment in the Arab world, people usually tend to prefer to be interviewed alone rather than being interviewed in groups. Thus, other forms of interviews, such as open-end and semi-structured, encourage participants to communicate and express themselves more freely.

In addition, conducting conversation analysis, which is “the fine-grained analysis of talk as it occurs in interaction in naturally occurring situations” (Bryman, , P. 494), would not aid in answering the research questions, as it is time-consuming and entails open conversations. Moreover, the reliance on text and document analysis as a source of data is not relevant, as the research aims to investigate the phenomenon as it is being experienced by participants; therefore, methods that are based on secondary sources may not be beneficial in this research.

Based on this, it can be observed that the semi-structured interview is the most appropriate method for collecting data in this study.

The following sub-sections will elaborate by explaining semi-structured interviews as a data collection tool; after that an explanation of data analysis techniques will be given, followed by the expected outcomes.

3.4.1.1 Data Collection Tool (Semi-Structured Interviews)

“An interview is a conversation that has a structure and a purpose, it goes beyond the spontaneous exchange of views in everyday conversations, and becomes a careful questioning and listening approach with the purpose of obtaining thoroughly tested knowledge.”

(Kvale & Brinkmann, 2009, p. 3)

For this study, the researcher chose semi-structured interviews for data collection.

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Interviews in social science research have existed for nearly a century, but have only become a general issue for methodological discussions in the last few decades (Kvale & Brinkmann, 2009), as shown in Table 3: Twelve Aspects of Qualitative Research Interviews (Kale & Brinkman, 2009, p. 28).

Generally, in qualitative studies, researchers tend to collect data in the field at the site where research participants experience the issue under investigation (Creswell W. J., 2009), which contrasts to quantitative research, where researchers can use electronic and other means to distribute questionnaires (as an example).

In addition, the research focuses on the perceptions of change in teaching practices due to the deployment of VLE systems in Saudi HEIs, and in order to achieve this, needs to achieve an in-depth understanding and detailed description of faculty's experience with the system, as described by (Yates, 2004).

This requires the researcher's presence at the case study site, either in person or through telephone and video conferencing facilities.

According to Kvale and Brinkmann (2009), semi-structured interviews, from the subject's perspective, seek to understand themes of the lived everyday world.

This kind of interview attempts to obtain descriptions of the interviewees' lived world with respect to interpretation of the meaning of the described phenomenon. It bears resemblance to everyday conversation, but serves the purpose of being used as a data source, and involves a specific approach and technique. This kind of interview falls between an open, everyday conversation and a closed questionnaire; it is conducted based on an interview guide that focuses on certain themes and that could include suggested questions (see

Table 2: Typology of interview strategies (Silverman, 2009, p. 110)).

According to Yates (2004), in interviews, researchers and participants develop a shared understanding of the topic under discussion, which is important in this study and should aid in answering the research question. The researcher will ask questions and record interviewees' answers, and if she needs clarification, she will ask follow up questions to ensure that shared understanding is achieved.

Qualitative interviews are different from interviewing in quantitative research, or in other words, structured interviewing (see

Table 2: Typology of interview strategies (Silverman, 2009, p. 110)). Qualitative interviews place emphasis on the interviewee's perspectives and viewpoints, unlike quantitative interviews, where the emphasis is placed on the researcher's concerns.

Moreover, in qualitative interviewing, the researcher seeks rich, detailed answers, unlike in structured interviewing, where the interview is supposed to generate answers that can be coded and processed quickly (Bryman, 2008).

In the light of this, and bearing in mind the case study approach and the research participants (academics and upper management), semi-structured interview transcriptions will be used as a primary and sole source of data.

When the researcher submitted her transfer report, she suggested conducting the interviews via telephone or video conferencing tools like Skype, in case she was not able to travel back to Saudi Arabia to conduct face-to-face interviews. This was due to the fact that the researcher was restricted by term dates as she had school-age children and may not have been able to travel during term times. As a result, the researcher reviewed the literature on phone and video conferencing interviews. This review was important to check the validity and reliability of such tools in case she used them as data collection tools.

Phone Interviews

According to Block and Erskine (2012), conducting telephone interviews is becoming a popular data collection method; however, it has been criticized by scholars as not being well-suited to the task of qualitative interviewing (e.g. Gillham, 2005; Legard et al., 2003; Rubin and Rubin, 1995 as cited in Irvine, et al., 2012). The lack of face-to face contact, in particular, is claimed to restrict the development of rapport and feelings of a 'natural' encounter (Shuy, 2003, as cited in Irvine, et al., 2012). However, using the telephone in research interviews potentially has advantages. For instance, it could aid in saving time and travel costs, estimated at 50-75% of face-to-face interviews (Marcus & Crane, 1986; Worth & Tierney, 1993, as cited in Block & Erskine, 2012). In addition, the level of

anonymity would be greater in relation to sensitive topics (Chapple, 1999; Kavanaugh & Ayres, 1998; Sturges & Hanrahan, 2004 as cited in Irvine, et al., 2012). As a result, finding qualitative studies in various disciplines that have conducted some or all of the interviews by telephone is not uncommon. Also, it has been argued that telephone interviewing is more efficient in terms of time (Block & Erskine, 2012).

Groves and Kahn (1979) as cited in Block and Erskine (2012), discovered that telephone interviews across their surveys took an average of 30 minutes, while face-to-face ones took an average of 50 minutes, which constitutes a time saving of close to 50%. In addition, telephone interviews have smaller personnel needs (Miller & Salkind, 2003, as cited in Block & Erskine, 2012), and as a result, there is an increase in efficiency in the time spent interviewing.

The researcher conducted one Skype interview, which was a benchmark for her. After she transcribed it, she realised the limitations of it and decided to overcome them on her following interviews. For example, after transcription, she discovered that she had asked follow up questions that did not serve her research objectives, so then she decided that she would precisely follow the scripts and leave the room open for follow up questions that served them, instead.

Although telephone and videoconferencing interviews were considered, the researcher did not use them, except for the first conducted interview.

Actual Interviews

During July/August 2013, the researcher returned to Saudi Arabia and aimed to conduct the rest of the interviews during that time. The challenge was that at that time, academics were on holiday, as they enjoy two months official holiday during July and August, therefore the student tried to contact them personally in an attempt to conduct the interviews at their convenience (sampling methods will be discussed in the next sub-section). The researcher was able to arrange 4 interviews during the academic's summer breaks, then she had to wait for them to return to work in the first week of September to carry out the rest.

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She then managed to conduct the rest of her interviews, totalling 21 in 5 days. as in the interview conducted through Skype, the student tried to precisely follow the interview script but kept room for emerging points that could aid in answering the research questions (see 3.5.1.3 Preparation of Interview Scripts). For example, the student in the original interview scripts did not include questions about the nature of VLE, such as whether it is a storage tool, a teaching and learning tool or an accountability tool, but after the third interview, when interviewees mentioned these aspects, she decided to add the question.

Type of interview	Required skills
Structured interview	Neutrality; no prompting; no improvisation; training to ensure consistency
Semi-structured interview	Some probing; rapport with interviewee; understanding the aims of the project
Open-ended interview	Flexibility; rapport with interviewee; active listening
Focus Group	Facilitation skills; flexibility; ability to stand back from the discussion so that group dynamics can emerge

Table 2: Typology of interview strategies (Silverman, 2009, p. 110)

Life World. The topic of qualitative interviews is the everyday lived worlds of the interviewee and his/her relation to it.
Meaning. The interview seeks to interpret the meaning of central themes in the life world of the subject. The interviewer registers and interprets the meaning of what is said, as well as how it is said.
Qualitative. The interview seeks qualitative knowledge expressed in normal language; it does not aim at quantification.

Descriptive. The interview attempts to obtain open, nuanced descriptions of different aspects of the subject's life worlds.
Specificity. Descriptions of specific situations and action sequences are elicited, not general opinions.
Deliberate Naivety. The interviewer exhibits openness to new and unexpected phenomenon, rather than having ready-made categories and schemes of interpretation.
Focused. The interview is focused on particular themes; it is neither strictly structured with standardized questions nor completely 'non-directive'.
Ambiguity. Interviewees' statements can sometimes be ambiguous, reflecting contradictions in the world.
Change. The process of being interviewed may produce new insights and awareness, and the subject may in the course of the interview come to change his or her descriptions or meanings of a theme.
Sensitivity. Different interviewers can produce different statements on the same themes, depending on their sensitivity to and knowledge of the interview topic.
Interpersonal Situation. The knowledge obtained is produced through the interpersonal interaction in the interview.
Positive Experience. A well conducted piece of research can be a rare and enriching experience for the interviewee, who may obtain new insight into his or her life situation.

Table 3: Twelve Aspects of Qualitative Research Interviews (Kale & Brinkman, 2009, p. 28)

3.4.1.2 *Data Analysis*

As mentioned above, the semi-structured interview is the data collection tool used for this research, and in order to make sense of collected data, an analysis method needs to be carefully chosen.

According to Bryman (2008), qualitative research rapidly generates a large, cumbersome database as a result of its reliance on text in the form of media such as interview transcripts, field notes or documents. The large amount of fragmented data generated is one of the main challenges of qualitative research, which suggests that careful planning of data analysis is required in order to make sense of this data.

For this research, Thematic Analysis was chosen as a tool for data analysis, which is one of the most commonly-used techniques for analysing qualitative data (Bryman, 2008).

Thematic analysis can be defined as “a qualitative analytic method for identifying, analysing and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 79).

It can be seen as a form of pattern recognition within the data, where categories for analysis are the emerging themes from such recognition (Fereday & Muir-Cochrane, 2006).

According to Boyatzis (1998), Thematic Analysis is a process to be used with qualitative information. However, it is not just another qualitative method; it is a process that can be used with most qualitative methods that allows for the translation of qualitative information into quantitative data.

According to Bryman (2008), thematic analysis is not an analysis approach that has an identifiable heritage or has clear clusters of techniques, unlike grounded theory and critical discourse analysis.

Thematic analysis is a process for encoding qualitative information. The encoding process requires the formulation of explicit ‘codes’; these could be a list of themes, indicators and qualifications that are causally related. A theme can be described as a pattern found in the information that at minimum describes and organizes the

possible observations and at the maximum interprets aspects of the phenomenon. Themes may either be generated inductively from the raw data or deductively from theory and prior research. At the end of the coding process, a codebook should be created; this consists of the compilation of a number of the codes used in the study (Boyatzis, 1998).

Richards (2005) encompassed the purposes of qualitative coding in the following points:

- “To reflect on what the coded segments tell you about the category, and its meaning in the project;
 - To ask questions about how the category relates to other ideas from the data, and construct theories about those relations;
 - To gather all material about a case, from different sources, so you can apply the information about that person or site to everything from there, and compare cases on their attitudes, experiences, etc. ;
 - To make further, finer categories, from finding different dimensions in the data gathered by the first coding;
 - To search for blends or combinations of categories, to find patterns in attitudes on this subject, for example by gender, or to compare text at different categories, seeing the category from a different view point;
 - To compare how different researchers interpret data.”
- (Richards, 2005, p. 95)

The study, as mentioned, is inductive. Literature was reviewed for the sake of formulating informed interview scripts, in addition to aiding the research in the discussion part, at a later stage. Moreover, no theoretical models that pre-existed in the literature were used; therefore, the researcher was informed only by raw data. As a result, the researcher needed to read data and search for possible themes. The search for theme entailed looking for keywords, trends or ideas in the data before any narratives could be done.

Thematic analysis was used for several reasons;

- The study is concerned with academics' perceptions of changes in teaching practices resulting from the use of deployed VLE. Such a study entails examining how academics interact with the system in their daily routines. Using thematic analysis aided the researcher in the depth needed for such investigation. The researcher moved beyond words and codes into identifying ideas and extracting meanings;
- The study was conducted by the researcher in order to achieve a PhD degree, and due to the limited resources in terms of time and funding, researcher and supervisor decided that thematic analysis was the most appropriate data analysis method; it provides needed depth to the study, in addition to involving straightforward application that does not entail prior experience.

Data analysis for this research took the following steps, based on Braun & Clarke (2006);

3.4.1.2.1 Abbreviation and naming of conventions for participants

To adhere with promised anonymity and ensure the concealing all participants' identities, the convention used in this research was I X, with I standing for (interviewee) and X being a random number for participants. All participants were promised that their identities would be concealed throughout the study, and the researcher pledged that anonymity would be preserved, therefore the convention I X was chosen without any reference to the participant's position or rank.

3.4.1.2.2 Data transcription and familiarization

In order for audio data to be dealt with, it needs to be transformed into written format. All audio recordings were transcribed, with each interview saved in a separate audio text document. For this study, and to aid in data handling, Nvivo software was used. All transcriptions were transferred to Nvivo as source files.

In this research, the researcher conducted one interview via Skype prior to conducting the rest of the interviews, which was transcribed and discussed with the supervisor. The first interview was used as an opportunity to train the researcher in how to conduct interviews. Moreover, by attempting to relate interview questions and answers to research questions and objectives, the researcher and supervisor did require amendments to the scripts and the researcher was informed how to formulate follow-up questions, in addition to keeping the focus on research question and objectives.

The researcher had to familiarize herself with data, and so strove to actively listen to audio and then transcribe. Active listening made the researcher aware of hidden meanings and patterns in audio material, which could then be transferred into the transcripts.

After this, the researcher started reading and coding data.

3.4.1.2.3 Codes Generation

The researcher started coding as she was reading. The software Nvivo was used to aid in data handling. It is true, however, that Nvivo software aided only in organizing and handling data, and that it had no analysis capabilities. Nevertheless, the researcher found it useful as she preferred to work fully on the computer rather than working manually.

The first step in coding was flat coding. The researcher started creating separate nodes for each emerging code. The researcher did not wait for all transcriptions to be done to start coding; on the contrary, she transcribed 2 interviews and coded them, and then transcribed the other 2 interviews and coded them.

The codes of the 2 first interviews were used as a benchmark for the rest of interviews. Codes started to repeat themselves from the second coded interview, therefore the researcher decided to use these codes as a base. At the same time, the researcher seized opportunities in each interview to develop the emerging of new codes and ideas that were in line with the research objectives and questions. Likewise, codes and ideas that were not relevant were discarded.

The procedure of coding and re-coding was to ensure that generated codes were in line with research questions and objectives, and as the coding process continued, codes started to repeat themselves and overlap. To ensure that codes are actually repetitive, the researcher revisited quotes for codes to make sure that the code marked ‘repetitive’ bore the same meaning, and then she would delete the code accordingly. If quotes associated with a code marked ‘repetitive’ bore different meanings, the researcher re-named them accordingly, in order to distinguish it from the other code.

The researcher continued coding and recoding until she finally produced a list of 114 flat codes.

3.4.1.2.4 Searching for Possible Themes

Throughout the coding process, the researcher realised relationships between codes, using the feature ‘memos’ in Nvivo to record possible relationships between codes. After coding was finished, the researcher started integrating codes under possible themes. It is worth mentioning that the researcher relied only on emerging themes from data. The study is inductive; therefore, no previous theoretical resources based on the use of ICT in education were used.

At this stage, several supervisory meetings took place to have another insight in the coding process and the initial emerging themes. Student and supervisor examined how emerging codes were related; bearing in mind that the research aims was to investigate the change in teaching practices which occurred as a result of VLE deployment.

After several meetings and after approaching codes from different viewpoints, for example, the factor time appeared in different contexts. Once interviewees mentioned time in the context of “time saving”, which is a result of exploitation of several VLE features. And with other instincts, interviewees mentioned time in the context of “lack of time” which is a challenge perceived from VLE use.

At this stage, the researcher started categorising codes according to how they were related. For example, communication was mentioned as being enhanced by the exploitation of several features, therefore communication was created as a theme,

and under this theme, codes such as “use of announcement feature” and “use of materials upload” were created.

At this stage, the researcher started realising that most codes were related to a cause-and-effect model. Another example that demonstrates this is the relationship between “paper saving” and “materials upload feature”. The exploitation of the materials upload feature resulted in saving paper, which is a perceived benefits realized from the use of VLE . This benefit resulted in saving time in classrooms and thus enabled more discussions, which is a change in teaching practice.

The researcher maintained a document and spreadsheet that monitor the progress of codes generation and the development of themes. In these documents, she entered codes definitions and quotes to help in thesis writing up after the analysis process is finished (see Appendix 3 (codes definitions and quotes tables)). She has also used nodes descriptions as demonstrated in the findings chapter (see 4.1.2.1 Initial coding).

It was clear at this stage that the two main themes that underpinned the study were “factors of change in teaching practices due to VLE” which caused “perceptions of change in teaching practices”.

3.4.1.2.5 Reviewing and finalizing themes

As the researcher was using Nvivo to help her organize and handle data, she used nodes hierarchy to demonstrate relationships identified in 3.4.1.2.4. At this stage, themes and sub-themes were finalized. Eight factors were identified as factors that led to changes in teaching practices, perceived benefits, institutional support, aims & pressure, pressure from the digital generation, perceived challenges and perceived barriers.

Six changes in teaching practices from academics perceptions were identified; changes in teaching styles & strategies, active involvement with VLE implementation and exploitation and active involvement with other ICTs.

A full list of themes is provided at the appendices (see Appendix 4 (List of Themes)

3.4.1.2.6 Data Reporting

Data are written up and presented in Chapter 4. Several supervisory meetings took place to finalize the structure of the chapter. It was agreed that discussions of findings would be based on the emergent two themes that construct the study; the factors of change in teaching practices due to VLE and perceived changes in teaching practices due to VLE. In addition, it was agreed that findings will be presented by providing list of identified themes, and after that concept maps that identify relationships between themes, sub-themes and codes, and then narratives that describe and interpret themes, sub-themes and codes and how they are related. This will lead to answering the research question.

3.4.1.3 *Alternative Analysis Tools*

In qualitative research, there are many analytical tools and approaches that can be used to for qualitative data. Thematic analysis was used in this research as it is the most appropriate method identified after carefully assessing the nature of the research. Other alternative approaches are listed below with the rationale behind not using them.

3.4.1.3.1 Grounded Theory

Grounded theory is a methodological approach that moves beyond the description of individual actions and stories, like thematic analysis, and focus on generating or discovering theory (Creswell J. W., 2013). In grounded theory studies, participants would all have experienced the process, and the process of theory development might aid in explaining practice or providing framework for further research. Theory in this case is “grounded” in data from participants who have experienced the process (Starus & Corbin, 1998 as cited in Creswell, J. W., 2013). According to

Creswell (2013), the definition of grounded theory is “a qualitative research design in which the inquirer generates a general explanation (a theory) of a process, an action, or an interaction shaped by the views of a large number of participants” (P. 83). Based on this definition of the approach, it can be concluded that it is not relevant to the current research.

The research aims to discover the perceptions of change on teaching practices resulting from the use of VLE in the research context; therefore, the study will take into account all perspectives regardless of the number of their occurrences. Moreover, the study does not aim to develop a framework and the researcher understands that the results from the study are not to be generalized.

3.4.1.3.2 Phenomenology

This approach describes and reports the common meaning for several individuals of their lived experience of a phenomenon or concept. The main focus for phenomenologists is to describe what all research participants have in common as they experience phenomenon (Creswell J. W., 2013) .

Based on this definition, it can be said that this approach is not relevant to the current research. Although the study aims to grasp the lived experience of individuals using VLE at Omega College, nevertheless it focuses on individual's experience and aims to report all experiences whether shared among all participants or not. It is true, however, that the number of occurrences of a certain experience aided in the study's theory developed and in generating recommendations, but all experiences were reported and taken into account.

3.4.1.3.3 Ethnography

This approach refers to the “study of cultures and groups:- of the participants' lifestyles, understandings and beliefs. In doing so, ethnography tends to emphasize the importance of understanding things from the point of view of those involved. Rather than explaining things from the outsider's point of view, there is a concern to see things as those involved see things” (Denscombe, 2003, p. 85).

And to conduct such studies, ethnographers reside at research settings and order them to understand these lifestyles and how they interact with the phenomenon under investigation, which is not relevant for this study. As mentioned, the study is a PhD project and is limited in time and resources, time consuming and lengthy procedures are not relevant.

3.4.1.3.4 Action Research

According to Denscombe (2003), action research is driven by the need to solve real-world, practical issues and problems. Somekh (1995), as cited in Denscombe (2003), reported that “Action research rejects the concept of a two-stage process in which research is carried out first by researchers and then in a separate second stage the knowledge generated from the research is applied by practitioners. Instead, the two processes of research and action are integrated” (P. 34).

Based on this, action research is not relevant to the study. The researcher was an outsider and has only been granted approval to interview participants for the sake of data collection, and any attempt to change this would not have been permitted. The researcher will hand in a copy of her thesis to the college when finished and, they will decide whether to apply any of the recommendations provided.

It can be concluded that thematic analysis which will be reported through narration in the analysis chapter, is the most appropriate method for this research.

3.5 Research Design

“A research design is an integrated statement of and justification for the technical decisions involved in planning a research project” (Blaikie, 2000, p. 15)

After choosing an inductive approach as a research strategy (see 3.3.2 Research Strategy) and deciding to conduct the research qualitatively (see 3.4.1 Qualitative Research Strategy), this section will explain how the chosen strategy was be

implemented. Moreover, it will explain how chosen data collection methods were empirically implemented. Explaining the research design will demonstrate how the research questions were to be answered and objectives achieved.

The following diagram explains how the research was implemented:

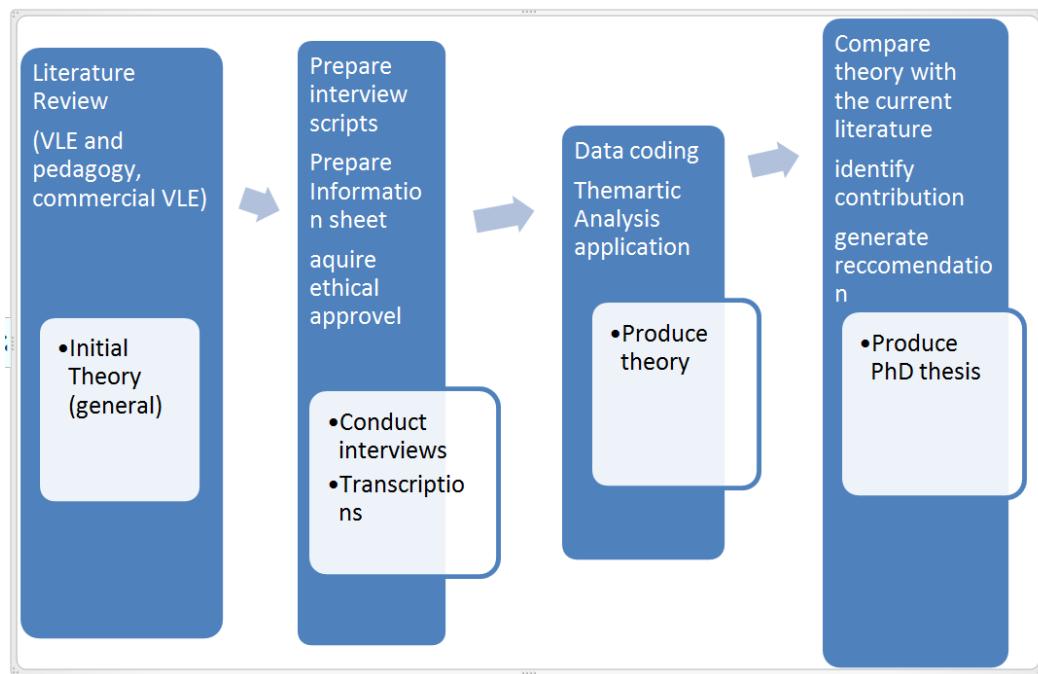


Figure 9: Research Design

The diagram simply demonstrates how different research activities are connected. It is worth mentioning at this stage that a case study design is the chosen design for the study.

3.5.1 Case Study

According to Gillham (2000), a case study is a one to investigate individuals; a group like a family or a class; an institution like a school or factory; or a community like a town or a profession. This investigation aims to answer specific research question/s, and to achieve this will seek a range of evidence of different kinds in the case setting, and collect and abstract to get the best possible results. for Gillham (2000), a case can be single, on which the researcher will investigate a single case,

like individual or single groups, or it can be multiple cases, like investigating multiple individuals or multiple groups (i.e. multiple families or multiple parents).

In this research, the researcher decided to adopt the case study approach and intended to investigate a single case (Omega College).

According to Bryman (2008), a case study entails the intensive and detailed analysis of a single case; and based on this, by concentrating on a single research context, the researcher will be able to manage the research and able to finish within the acceptable PhD timeframe at the University, which is 4 years.

There are different types of cases, such as *critical cases*, *extreme cases*, *typical cases*, *the revelatory case*, and *the longitudinal case*. The type of case in this study is *typical* or *representative*. With this kind of case, “the objective is to capture the circumstances and conditions of an everyday or commonplace situation” (Yin 2003, p. 41, as cited in Bryman 2008).

In this study, the researcher aimed to study participants’ interactions with the system at the research context in an attempt to answer the research questions, which makes it a *typical* case.

The researcher aimed to choose a context that is both accessible to the researcher and rich in data. As a result, Omega College was chosen. The researcher worked there for seven years and negotiated her access to conduct the study before she started her research.

3.5.1.1 *Description of Case Study*

This section presents case study context. It is important to present background of the case study context in order to set the scene for the phenomenon. This will aid in understanding cultural background and will aid in the data sense making processes.

Firstly, a brief description of Omega College “research context” will be given, after that, information about VLE deployment will be presented.

3.5.1.1.1 Omega College

Omega University¹ is a leading HEI for girls at the Kingdom of Saudi Arabia. Located in the city of Jeddah, the main sea port at the Kingdom, it was first established in September 1999 as a College to serve the educational needs of young ambitious women in the community who aspired to high quality education and challenging careers in pioneering fields.

The University is a non-profit higher educational institution for women in the Kingdom of Saudi Arabia, and the first of its kind; before its establishment, the only option for girls was public Universities and Colleges, and elite students used to travel abroad to seek higher education in specialisms not offered through public institutions, Omega University (College during that time), aimed to cater for these students by offering undergraduate programs that were not offered by public institutions in Jeddah, such as Interior Design, Graphic Design and Special Education.

Planning and implementation of the college took nearly 4 years of ongoing work, in which, by 1999, Omega University (College during that time), garnered 120 candidates in its first year. Enrolees poured in to the three majors offered during that time: Management Information Systems, Interior Design and Special Education.

Omega underwent a major facility expansion in 2003 after receiving financial support from a major businessman in the Kingdom, after whom one of the buildings was named. Academic programs at the college were developed by the Texas International Education Consortium (TIEC). Developing curriculums was part of a larger contract to design the complete blue-print for the various divisions at the college. For the sake of developing academic programs, 140 experts were recruited to complete the task of developing the overall curriculum, the detailed course description and course syllabus as well as information on the laboratory component and text books, etc. Documents resulting from teamwork were reviewed and approved by the academic committee appointed by the founding committee and the

¹ In this research, the university was referred to as the college; this is due to this fact that the study started when the establishment was still a college. The researcher uses 'college' in this study to refer to Omega University.

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final program was submitted for approval to the Ministry of Higher Education. This step was important as it assured national accreditation.

The standards used in developing academic programs closely followed the requirements of the Middle States Association in the United States, which will facilitate international accreditation. At the time of writing, the University offered Master's programs under the School of Business and Law, which started in 2014, in addition to four-year Bachelor's degree programs in ten majors with up to 142 credit hours. The University currently comprises three main schools:

The School of Business and Law, which it offered the following Bachelor degrees:

- Bachelor of Science in Business Administration / Banking and Finance
- Bachelor of Science in Business Administration / Management System
- Bachelor of Science in Business Administration / Marketing
- Bachelor of Science in Business Administration / Human Resource Management
- Bachelor of Law
- Master of Business Administration
- Master of International Relations

The School of Education and Applied Sciences which it offered the following bachelor degrees:

- Bachelor of Science in Special Education
- Bachelor of Science in Speech, Language and Hearing Sciences

School of Design and Architecture

- Bachelor of Arts in Fashion Design
- Bachelor of Arts in Interior Design
- Bachelor of Arts Visual Communication
- Bachelor of Architecture

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From the summer of 2008, Omega began its pursuit of university status. It was a long quest, but the college witnessed a steady increase in its student population, year-in and year-out, and this was the predominant incentive in its plans to rapidly grow the infrastructure from a single building to multi-building campus. The college established four pillars of excellence; teaching, learning, operational, and strategic excellence. The main objective behind such a strategy is to graduate future generations that exhibit independent learning, analytical and critical thinking, and high levels of culture based on research and exploration, distinctive ability in problem solving with a creative look on community service.

Omega College was awarded university status in January 16, 2014 through the consent of the Custodian of the Two Holy Mosques, at that time, King Abdullah bin Abdulaziz; and with the continuous support and encouragement from the Minister of Higher Education, Dr. Khalid Al-Angari.

The University is currently considered an elite HEI. According to Killgore (2009), the admissions policy of such elite colleges can be described as being concerned with the merit of the whole person, thus as one that takes into account an applicant's academic and non-academic achievement. The University is a small HEI with a maximum capacity of approximately 1500 students, and the total number of employees is 390 (see Figure 2&3). The University is a diverse learning environment, and the fact that the courses offered are mostly unique in the city of Jeddah and only offered through very few HEIs plays role in this diversity. This uniqueness resulted in the need to employ academics from different parts of the world, such as the US, India, Canada, Pakistan and the Arab States (see Figure 10). The rationale for offering unique courses, apart from the university's desire to thrive for excellence and be a pioneer in education, is to equip girls for the current competitive job market, especially in the private sector, which, until now, does not employ sufficient numbers of women.

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Human Resources	
Employees & Students' Nationalities	
Fall 2014-2015	
Algeria	Jordan
America	Kenya
Bangladesh	Latvia
Great Britain	Lebanon
Canada	Malaysia
Chad	Pakistan
Dutch - Netherlands	Palestine
Egyptian	Poland
UAE	Qatar
Eritrea	Russia
Ethiopia	Saudi
Philippines	Somali
Finland	Sudan
France	Syria
Germany	Tunisia
India	Turkey
Indonesia	Yemen
Iraq	

The University has a total of 35 nationalities among its employees and Students in Fall 14-15 with decreasing by 3% from the previous year (36 Nationalities).

Figure 10: (Omega KPI, 2015)

Omega College, by offering programmes such as Graphic Design, Interior Design, Management Information Systems, Special Education, Banking and Finance, Law and Nursing, aims to provide qualified female graduates who can be recruited by Saudi companies, and take their rightful place in the workforce, in areas dominated by men or foreign workers.

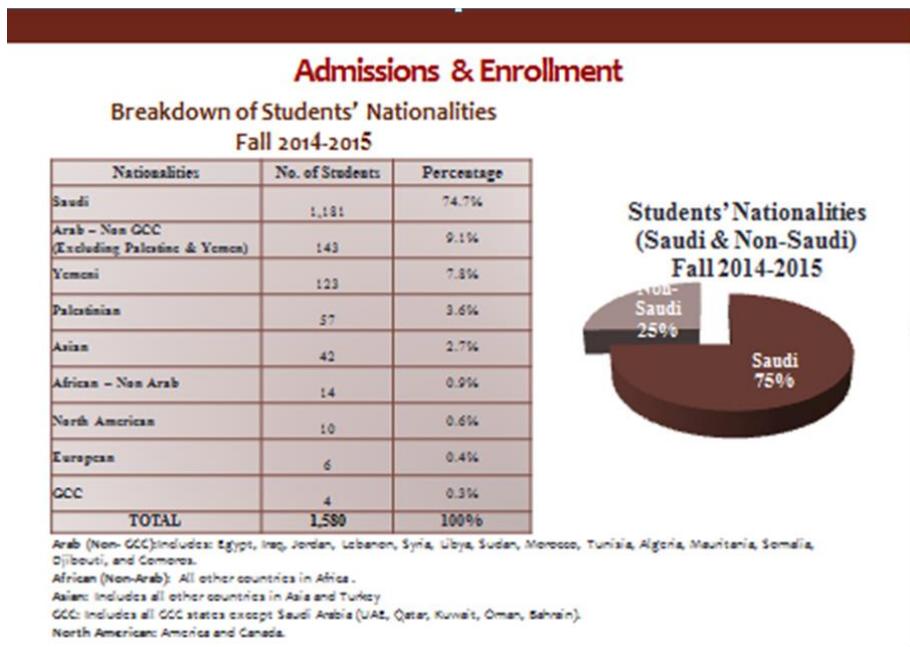


Figure 11: (Omega KPI, 2015)

According to Kadi (2009), the problem of expatriate workers is widespread in the Saudi private sector. According to Al-Dosary (2004), the representation of Saudi nationals among the workforce is low within the private sector for several reasons, one being the shortage of Saudi graduates with the required scientific or technical background necessary to meet private sector demands. Another is the lack or low level technical or vocational training for jobs for Saudis in the private sector. Additionally, long working hours and the short weekend system followed in most private sector organisations makes them unattractive, and there is a substantial influence within Saudi families on their members to prefer working for the government rather than the private sector, as the latter is viewed as providing private services while the government provides public services. Essentially, it is the inclination of the majority of the private sector employees to move to the public sector as it offers better working conditions, specifically long weekends, reasonable working hours, a more lenient appraisal system, and most importantly, job security. Through its use of English as the medium of instruction and its provision of unique courses, providing graduates who are highly sought after in the private and public sectors, Omega College is trying to participate in the Saudiisation process, which has been ongoing for many years now. The college aims to provide its graduates

with the required skills that will help in bridging the gap between what education institutions normally produce, and the demands of the job market.

HUMAN RESOURCES

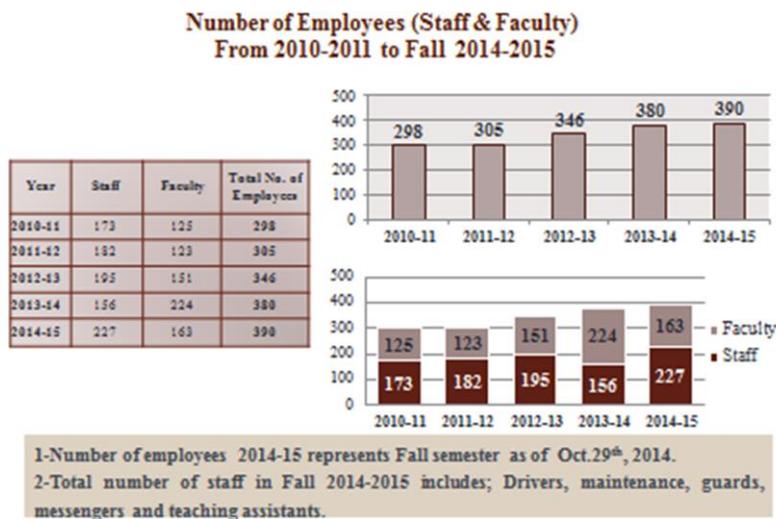


Figure 12: (Omega KPI, 2015)

3.5.1.1.2 VLE Deployment

The VLE system was first purchased in 2007, and was introduced to academics in 2008. According to I26, the chosen system, after evaluating several proposed systems, was Blackboard. This is due to its popularity, functionality, ease of use and the fact that it is not open source. The rationale behind choosing non-open source was “*To have a good support, to have new features in the future, fast support. Most important is the new features, so great new features*” I26. Before it was officially launched, 10 academics were trained in using Blackboard, and then it was introduced in spring 2008.

The 10 academics who attended the training were not nominated. The IT department sent an email to all academics informing them about the system and the opportunity to train, with certification, and the 10 academics expressed an interest

and attended the session. After the training was finished, these academics used the system for a semester as a pilot. During that semester, they started interacting with other academics and encouraged them to use the system. Even during staff and academic meetings, the system was talked about in an attempt to informally introduce the system to academics.

The system was officially introduced to the whole college as a choice in the next semester, and regular training sessions were conducted on a semester basis. In 2012 it was decided that the system would become mandatory for all academics, and use would be part of academics' annual performance evaluation.

The system was mostly used by Management Information System (MIS) and Interior Design academics, and after it was mandated, it was used by all academics with no exception. Training sessions are being held every semester, totalling 12 training sessions per semester. Sessions are categorized by functionality, thus delivering basic general training and then training at a grade centre, collaborative tools and assessment tools. IT asked each department to nominate any other feature in which they require to be trained, and said IT would organize it. The mandated features are course syllabus, grade centre, materials upload and assignments.

It is worth mentioning that the diversity of Omega College plays a vital role in making it an interesting research context to investigate. Academics are employed from different parts of the world due to the uniqueness of the courses offered. Moreover, the nature of the college as small elite HEI makes it possible to propagate decisions like VLE system mandate to all academics (see 4.2.1.2 Institutional Support). The researcher was tempted to widen the scope of the research to include multiple HEIs in Saudi Arabia, but after studying the current situation and timeframe, it was decided that a single research context was relevant, given the time and geographical constraints.

3.5.1.2 Access to Case Study Context

As it was decided by the researcher beforehand that her PhD was going to be done on VLE, she negotiated her access directly after she got admission at the University

Of Sheffield Information School, and she was granted an initial verbal agreement for access.

When the researcher was ready for data collection, she obtained ethical approval from the University of Sheffield, and then contacted Omega College officially to negotiate her access.

Access negotiation was conducted as follows:

- The researcher contacted the Vice Dean of institutional Advancement, as they are responsible for research and development;
- She was referred to the head of research centre, and then she was provided with a research proposal form, ethical approval and a consent forms;
- The researcher filled the forms, then she got them signed by the supervisor and sent them back to the head of research centre, she has also sent the ethical approval gained from the University of Sheffield's Information School.
- After reviewing her request, the head of research centre sent her official approval for access by email. The condition was that the name of the College should be concealed, and she suggested the name 'Omega College'.

3.5.1.3 Preparation of Interview Scripts

As has been described in the data collection section (see 3.4.1.1 Data Collection Tool (Semi-Structured Interviews)), all interviews except one were conducted face-to-face at the research context. Before she conducted interviews, interview scripts were prepared in two versions, for academics and for upper management (Appendix 5 (Academics Interview Script) Appendix 6 (Principles Interview Scripts)).

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The researcher interviewed an IT personnel when then need emerged, the script was not prepared with the other two scripts. It was prepared based on emerging findings from the data and based on research question and objectives.

As has been described in 3.3.2 Research Strategy, the study is inductive. Nevertheless, the researcher conducted a literature review for the sake of preparing informed interview scripts (see Chapter 2 Literature Review). Scripts were prepared as follows:

- Review relevant literature. The researcher conducted a literature review that covered aspects such as classroom structure, learning styles and strategies and literature that covered the phenomenon of VLE. Such a review aided in equipping the researcher with knowledge that allowed her to construct an interview script that aimed to answer the research question.
- The researcher prepared an initial interview script and tested it with a colleague at the Information School, transcripts from the interview were not analysed and they were only used to test scripts validity and quality;
- Based on the responses, the researcher and the supervisor identified the limitations which were as follows: the lack of ice-breaking questions; the lack of a clear structure that responded to research objectives, such as questions about teaching styles, which were asked before questions about the system's general use and features exploitation. Changes were undertaken accordingly.
- The researcher prepared another interview script and it was agreed on. After this, the first interview via Skype was conducted, as described in 3.4.1.1, Data Collection Tool (Semi-Structured Interviews);

- Further amendments were made to the script after the first interview. Main questions remained the same and the researcher added follow-up questions.

3.5.1.4 Information Sheets and Consent Forms Preparation

To adhere with the University of Sheffield ethical rules, a comprehensive information sheet was prepared and sent to the participants to be read before the actual interview commenced. This included information about the researcher, the educational establishment, a brief about the research and its objectives, possible questions and what exactly was expected from the participant (see Appendix 7 (Information Sheet)).

In addition to the information sheet, a consent form was given to the participant for them to sign. It included brief about the research and all ethical considerations regarding participants' identities and how data in the form of voice recordings and transcriptions would be handled. Participants were asked to sign the consent form before interview commenced. In the case of Skype interview, the consent form was sent to the participant by email and verbal consent was given before the interview was conducted (Appendix 7 (Information Sheet)).

3.5.1.5 Pre-Interview Preparation

Prior to conducting interviews, and bearing in mind that multiple interviews were going to be conducted on the same day, the researcher prepared the following;

- Interview scripts sheets to be prepared and have enough space for notes-taking;
- Sufficient copies of information sheets and consent forms to be printed;
- Made sure that the 2 I-phones used for interview recording were charged;
- Tried to arrange interview times in advance as much as possible.

The researcher tried to be as flexible as possible, although participants were contacted by email to arrange appointments, nevertheless the researcher had to remain open to changes and she tried to interview whoever was available within her

sample if they were interested, even if they had not been previously contacted. She would just ask them if they wanted to participate, hand them the information sheet and ask them for an appointment.

3.5.1.6 *The Process of Interview*

Interviews were conducted as follows;

- The researcher handed out a copy of the information sheet even if the participant had received it by email; she also handed in the consent form for signature;
- The researcher gave participants time to read the information sheet and consent form;
- Before the interview commenced, the researcher took verbal consent from the interviewee;
- Interviews were started with ice-breaking questions, followed by the rest of questions;
- Occasionally, if the researcher realised that the interviewee was not comfortable, she offered to stop the recording and reassured the interviewee that the study was not judgemental, that she was only collecting data and that all identities were concealed.

3.5.1.7 *Bias in Qualitative Research*

In this research, qualitative interviews were the sole mean of data collection. It is true however, that qualitative interviewing is a well-known data collection tool exploited in most qualitative research in different disciplines. Nevertheless bias could be an issue in such studies. Avoiding issues like favouritism, partiality or prejudice is crucial in qualitative studies at all stages, including choice of participants, conducting interviews, and analysing data to ensure research validity (Kvale & Brinkmann, 2009). In order for the researcher to mitigate the issue of bias in her research, she tried to include participants from different disciplines in her sampling, as will be explained in the next sub-section, in order to ensure that most viewpoints were considered. She also tried to avoid pre-conceived ideas she had

formulated throughout her employment at the research context in her coding, and in the discussion chapter the researcher will present her new findings and contributions which emerged entirely from the data she collected. She also tries to consider all different viewpoints presented by interviewees, as presented in Findings. In fact, this aided in creating debates and discussions. To avoid bias in interview questions, the researcher had lengthy discussions with the supervisor and was given guidelines regarding how to avoid asking leading questions or questions that might trigger specific answers from participants. She produced different versions of the interview scripts until she and the supervisor were satisfied that leading and ambiguous questions were not present. He also advised that some interviewees might not be very responsive, and that in such cases the researcher might be tempted to ask leading questions, giving the researcher clear guidelines on how to deal with such interviewees. For example, if the researcher asked the interviewee “What is your relationship with technology overall?” and she replied “good”, the researcher would encourage her to elaborate with follow-up questions such as “So in which aspect in your life has it helped you the most?”, instead of leading questions, like “So you think technology is good in education?”.

3.5.1.8 *Sampling Methods*

Choosing the research sample is an important step in any research. According to Blaikie (2000), there are many sampling methods for researchers to choose from. Some methods (the ones generally regarded as ideal), aim to represent the population from which the sample is drawn, while other methods have to compromise on that aspect. The chosen method is based to a great extent on the nature of research, the availability of information and cost. Sampling methods have been divided into two dimensions, probability versus non-probability; and single-stage versus multi-stage. To choose participants for interviews, the researcher followed a single-stage non-probability sampling method (Blaikie, 2000). As in qualitative studies, the sample needs to be fairly small, as qualitative studies are usually resource-intensive (Blaikie, 2000). As the case study context is relatively small, the researcher planned to interview people whom she perceived would help in answering the research questions, based on her seven years’ experience of the context,. Therefore, the researcher used purposive sampling. According to Blaikie

(2000), this kind of sampling commonly uses non-probability methods, and is commonly used to deal with situations where it is not possible or very costly to identify a particular population. Another use of this type of sampling is for selecting some cases of a particular type, which is relevant for this study. The sampling method chosen is a single-stage, as interviewees have no dependence in this study. For example, if an academic in the Graphic Design department was interviewed, the researcher would not need to interview the department director or secretary. Participants were chosen based on the following criteria, bearing in mind the purposive sampling method:

1. Academics who had been using the system since it was in the pilot phase;
2. Academics who started using the system after its use was included in faculty annual evaluation;
3. Members of the upper management who were considered decision makers (Vice-dean of Finance and Administration; Vice-dean of Academic Affairs).

In addition, after data were collected, the researcher decided to interview an IT staff member, preferably in a management position. Originally, this was not planned. After the researcher started coding the interview transcripts, she realized that factual information from IT was required to make sense of some of the information communicated by interviewees.

For instance, when the researcher asked the Vice Dean of Finance and Administration about the rationale behind choosing the system brand, she replied that the IT department shortlisted different systems and they recommended Blackboard. It was then decided that interviewing an IT person was important. By understanding the rationale behind choosing the system brand, the researcher equipped herself with information that would aid in understanding how decisions in new IT projects were made and on what basis, which would bring greater understanding of the upper management perspective in relation to the new project and the drivers of capital expenditure.

The researcher conducted the interview with the IT director in April 2014. It is true, however, that the initial plan was for data collection to be a single stage, nevertheless the initial codes generated the need for this interview, in which the researcher ensured rich data and responded to emerging requirements in this inductive study, such as the gap the researcher found in responses to questions

regarding training. In addition, the researcher needed information about the system deployment history, to which only an IT person could respond.

Choosing participants based on the criteria described is justifiable. Interviewing academics before and after use of the system was made compulsory was important. Exploring academics' different motivations helped in answering the research questions and in exploring the participants' perceptions of the system.

This proved to be significant, since after coding, for example, it was discovered that making the system mandatory, although it imposed the system on academics, nevertheless it was reported that they started realizing the perceived benefits from use and used it because of this. On the contrary, academics who had started using the system previously were motivated by pre-conceived benefits and by their original interest in technology, so these points aided in theory formulation and in better understanding academics' motivations. Upper management needed to be interviewed because it was important to explore their interpretations of the system's success and compare it with the academics' use patterns.

This helped provide recommendations on how to best utilize the system's features. To arrange interviews for the study, the researcher coordinated with the Chair of Research at Omega College. She has already been contacted after the researcher submitted her transfer report, and data was collected after ethical approval was obtained from the ethical committee at the University of Sheffield. The researcher, upon receiving ethical approval, directly contacted participants after they had been identified and sent them the research abstract and consent forms by email, while some were handed information sheets and consent forms before interview commencement. The researcher tried to cover all academic fields at the college. Though the study is not a comparative study, nevertheless choosing participants from different academic fields ensured that most viewpoints were covered. For example, it is usually known that academics who teach Information Systems courses are normally interested in ICT and IS. On the other hand, academics who teach, for example, graphic design courses might not share the same attitude toward IS, therefore interviewing academics from different fields enriched the study. The following table summarizes the interviewees' demographic. It doesn't include

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gender because it is an all-female college for girls only, and while there were male instructors, they were employed on a course-by-course basis.

The abbreviation FT/PT refers to full time and part time.

Participant	Rank	Years of experience at College	Usage before/after VLE
I1	Academic	8 FT	Before and after
I2	Academic	4 years FT/11 PT	Before and after
I3	Academic	13 FT	Before and after
I4	Academic	3 years FT	After
I5	Academic	7 years FT	Before and after
I6	Academic	3 years FT	After
I24	Vice Dean/decision maker	12 years FT	Before and after
I7	Academic/ once appointed to promote VLE	12 years FT	Before and after
I25	Former vice Dean/Current Academic	7 years FT/ 2 years vice dean	Before and after
I8	Academic/Program Director	5 years FT	Before and after
I9	Academic	7 years FT	Before and After
I10	Academic	8 years FT/ 1 year PT	Before and after
I11	Academic	4 years FT	Before and

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			after	
I12	Program Director/Academic	3 years FT	After	
I13	Academic	15 years FT	Before	and After
I14	Academic	9 years FT	Before	and After
I15	Academic	7 years FT	Before	and After
I17	Academic	13 years FT	Before	and After
I18	Academic	7 years FT	Before	and After
I26	Director of former Database Administrator (DBA)	13 year FT	Non user	
I20	Academic	12 years FT	Before	and After
I21	Academic	10 years FT	Before	and After

Table 4: Interviewees

All participants re referred to as I X to serve the purpose of concealing their identity when cited in the Findings chapter.

3.6 Ethical Issues

“Ethics say that while truth is good, respect for human dignity is better, even if,

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in the extreme case, the respect of human dignity leaves one ignorant of human nature” (Bulmer, 2001, p. 45).

As was described, interview transcripts were the main source of data for this study. According to Kvale and Brinkmann (2009), interview research is full of ethical and moral issues. The human interaction that takes place in an interview affects interviewees, in addition to the fact that the knowledge produced by an interview inquiry affects our understanding of the human condition. Therefore, ethical issues in qualitative types of research need to be carefully considered. This study has received ethical approval from the Ethical Team of the Information School of the University of Sheffield (see

Appendix 8 (Ethical Approval)).

During interviews, and ,as described in the case study section (see 3.5.1.5 Pre-Interview Preparation3.5.1.6 The Process of Interview), the researcher ensured that she obtained informed consent from all participants, and reminded them that participation was voluntary and that they could withdraw at anytime without any negative consequences. In addition, during some interviews, she had to stop the recording at the participant's request and she refrained from using any part of an interview which participants verbally asked not to be included.

During the findings writing up, when the researcher was using quotes from interview transcripts, she refrained as much as she could from using any abbreviation or descriptions that could lead to the identification of any participant.

3.7 Research Quality

“The value of scientific research is partially dependent on the ability of individual researchers to demonstrate the credibility of their findings. Regardless of the discipline or the methods used for data collection and analysis, all scientific ways of knowing strive for authentic results” (LeCompte & Goetz , 1982, p. 31)

In quantitative research, assessing the quality of findings is achievable through the assessment of reliability and validity. Reliability can be defined as “The extent to which results are consistent overtime and an accurate representation of the total population understudy is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable” (Joppe ,2000, P. 1, as cited in Golafshani, 2003), while validity can be defind as “determining whether the research truly measures that which it was intended to measure or how truthful the research results are. In other words, does the research instrument allow you to hit "the bull’s eye" of your research object?

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Researchers generally determine validity by asking a series of questions, and will often look for the answers in the research of others." (Joppe ,2000, P. 1, as cited in Golafshani, 2003).

For positivist researchers, assessing reliability can be achieved through testing whether the results are replicable; and with regard to validity, it can be achieved through testing whether the means of measurement are accurate in addition to whether they are actually measuring what they are intended to measure (Golafshani , 2003).

The challenge in assessing reliability and validity in qualitative researches is that measurement is not a major preoccupation, therefore the issue of validity seems to have little or no bearing on such studies, unlike quantitative ones (Bryman, 2008). As a result, scholars in the field have attempted to introduce validity and reliability in qualitative research through changing their meanings without playing down the salience of measurement issues (Bryman, 2008).

LeCompte & Goetz (1982) introduced the following terms to asses reliability and validity in qualitative research:

- External Reliability, on which the researcher enhances the external reliability of their data by the recognition and handling of five problems: researcher status position, social situations and conditions, informant choices, analytic constructs and premises, and methods of data collection and analysis. Assessing these factors should determine the degree to which the conducted study can be replicated. Since this is a difficult criterion to achieve in qualitative research, LeCompte & Goetz (1982) suggest that qualitative researcher needs to adopt a similar social role to that of the original researcher.
- Internal Relabilit is concerned that, where there is more than one researcher, members of the research team agree with each other about what they see and hear. This is not applicable to single researcher studies.

- Internal Validity, which is concerned with whether researchers actually measure and observe what they think they are measuring and observing, in other words, whether there is a match between the researcher's observations and the ideas they develop (Bryman, 2008).
- External Validity is concerned with the ability to generalize findings across social settings.

Other scholars have suggested that qualitative researches should be assessed using different criteria than quantitative researches. Lincoln and Guba (1985) and Guba and Lincoln (1994), as cited in Bryman (2008), proposed two different criteria for assessing qualitative research; Trustworthiness and Authenticity. And for this study, the researcher will use Trustworthiness to assess the quality of the research. Authenticity, which is concerned with assessing fairness, ontological authenticity, educative authenticity, catalytic authenticity and tactical authenticity, is not relevant for this study. Assessing authenticity arguably fits more into action research types or studies (Bryman, 2008).

3.7.1 Trustworthiness

The notion of Trustworthiness comprises four different criteria:

- Credibility, which is equivalent to internal validity
- Transferability, which is equivalent to external validity
- Dependability, which is equivalent to reliability
- Confirmability, which is equivalent to objectivity

Each criterion will be used to assess the quality of this research.

3.7.1.1 *Creditability*

According to Bryman (2008), “The establishment of the credibility of findings entails both ensuring that research is carried out according to the canons of good practice and submitting research findings to the members of the social world who were studied for confirmation that the investigator has correctly understood that social world” (P. 377). Based on this, and to ensure that the findings of this research are credible, the researcher provided details in the methodology chapter that demonstrated how the research was conducted, in terms of sampling methods, interview preparation and commencement; how data was handled; and how participant’s identities were concealed (see 3.4.1, Qualitative Research Strategy, and 3.4.1.2, Data Analysis).

The researcher has also provided quotations from interview transcripts without any change. All records and transcripts are still kept. When the researcher is awarded a PhD, a copy of thesis will be sent to the research context for their validation.

3.7.1.2 *Transferability*

Qualitative research is mostly context-based. The conducted study is a typical case study; accordingly, findings of the study are contextual, which makes generalization a challenge.

The study proposed a model that suggests that, in order for changes in teaching practices to occur, several factors needs to be present (see Chapter 4, Findings). This model, though context-based, is transferable. The model can be tested in other HEIs in Saudi Arabia or even the Middle East and in other parts of the world. The model can also be extended and factors and changes in practice can differ, depending on cases researched.

3.7.1.3 *Dependability*

To ensure dependability, the researcher should adopt an “auditing” approach. Complete records of all research activities should be kept in an accessible form

throughout the process. In this research, the researcher kept all interview records, transcripts and interview scripts in different versions, namely as Nvivo codes & nodes and ethical records. All documents are available if requested.

3.7.1.4 *Confirmability*

Confirmability is concerned about ensuring that the researcher can demonstrate that she or he acted in good faith. It should be shown that they have not deliberately allowed personal values or backgrounds to affect research results.

In this research, and to ensure conformability, the researcher tried as far as possible to interview academics from different disciplines (see 3.5.1.8, Sampling Methods). During analysis, the researcher tried to report accounts of participants as they were, in order to follow the inductive approach, and all emerged themes were derived purely from data. All evidence can be provided, if requested, from Nvivo.

3.8 Summary

This chapter has presented the research methodology and design chosen for the study in a manner that answers research questions and achieves research objectives. It started by explaining how theoretical understanding of the research topic was created. This was followed by explaining the researcher's philosophical perspective. It was explained that the chosen epistemological position is interpretivist. The decision was based on the fact that the researcher aimed to examine the phenomenon of VLE deployment as it is being experienced by academics. This examination is the key to answering the research questions, which are concerned with academics' perceptions of change in teaching practices brought about through the adoption of VLE.

After this, it was explained that the adopted research strategy for the study would be inductive. It was explained that this strategy was adopted due to the lack of similar research in the field. A full explanation of research methodology then followed. It was explained that this study was going to be conducted qualitatively. In fact,

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inductive strategy fits better with qualitative research, and this combination best fits the current research.

Data collection methods were explained. It was mentioned that semi-structured interviews were the chosen data collection method for the study, and that, after examining different approaches, such as Grounded Theory and Phenomenology, it was decided that the chosen data analysis tool would be Thematic Analysis. A full explanation of thematic analysis, based on Braun & Clarke (2006), was then presented.

After this, research design was explained. The case study was presented, featuring information about the research context and information about VLE deployment. It also featured practical information about how interview transcripts were prepared, how interviews were conducted and how data was handled afterwards.

This was followed by a consideration of research ethics and how this study adhered to the strict ethical requirements followed at the Information School.

At the end of the chapter, the student discussed research quality and how to ensure that the conducted study would be perceived as high quality research. The next chapter will present and discuss the findings of the study.

Chapter 4 Findings

4.1 Introduction

This chapter will present findings from the study resulting from the data analysis. The findings chapter is one of the most important parts of any research; it explains results from the research and shows how research questions were answered and research objectives were achieved. Moreover, findings lead discussion and identify contributions of the study to the current existing body of knowledge, which is a core part of any research.

The chapter is constructed as follows;

Section 4.1.1 provides description of the thematic analysis and how themes and sub-themes were identified.

After that, section 4.1.2 briefly explains practical data analysis, followed by presenting a list of themes and sub-themes featuring the first level of sub-themes, a full list of themes, and sub-themes and codes will be presented in the appendices (see Appendix 4 (List of Themes)). This will be followed by the main concept map, which describes relationships between themes, sub-themes and codes. Only the main concept map will be included, which visually represents the relationships between the first level list of themes; all other concept maps that visually represent relationships between all themes, sub-themes and codes will be presented individually with findings narratives. In fact, the presented concept map represents a model that represents relationships between perceived and changes in teaching practices and factors that lead to such changes. More information about the model and how it contributed to the existing body of knowledge will be presented at the discussions and conclusions chapter (see Chapter 5 Discussion and Conclusion).

Section 4.2 presents narratives for each theme, sub-themes and codes. These narratives include quotes from data and interpretation. The chapter will then conclude by presenting a summary of findings.

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Data analysis took the following stages to yield findings presented in this chapter;

4.1.1 Interviews and transcriptions

As has been described in the methodology chapter, semi-structured interviews are the main source of data in this study. After interviews were conducted, transcriptions were made and all audio recordings were transferred into texts, and each interview saved in a different text document. After that, texts documents were transferred to Nvivo software for coding and analysis. Figure 13 Sample of interviews in Nvivo' presents a sample of interviews as they are stored in Nvivo. Although documents are named after interviewees, the reference to them in the findings is anonymised; they are kept here for the researcher to identify them. The researcher in reporting findings referenced all interviewees using (IX) to ensure complete anonymity, which complies with research ethics. A full list of interviewees is provided in the methodology chapter (see Table 4: Interviewees).

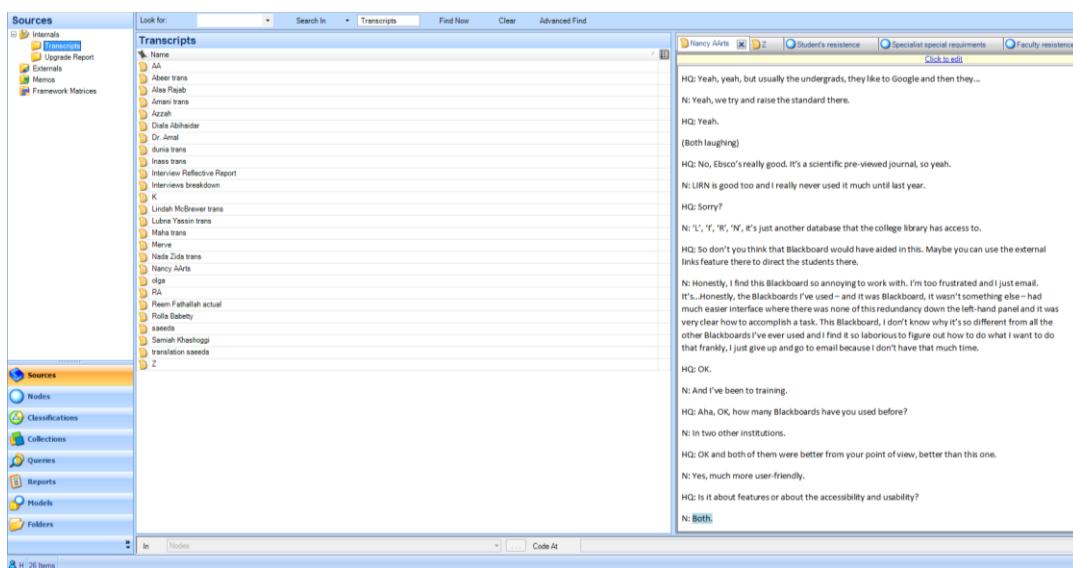


Figure 13 Sample of interviews in Nvivo

4.1.2 Data Analysis

It is worth mentioning that the process of data analysis was described in details in the methodology chapter (see 3.4.1.2 Data Analysis), this section presents brief practical steps of data analysis for the purposes of setting the scene for narratives.

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After interviews were transferred to Nvivo, the researcher started reading and coding data. In thematic analysis, the first step is to familiarize oneself with the data through reading and initial coding; the following steps explain more how analysis was conducted.

4.1.2.1 *Initial coding*

From Nvivo, the researcher started actively reading interviews; she started flat coding as she was reading. This was done through creating separate nodes in Nvivo for each identified code. The researcher aimed to clearly describe each code to help identifying important ones and consolidate repetitive ones at later stages (see Figure 14 Node Description Sample). As initial coding developed, the researcher started realising that codes were becoming repetitive. For example, there were several codes for “time”, and several codes for “communication”. At that stage, she started consolidating codes and identifying initial themes.

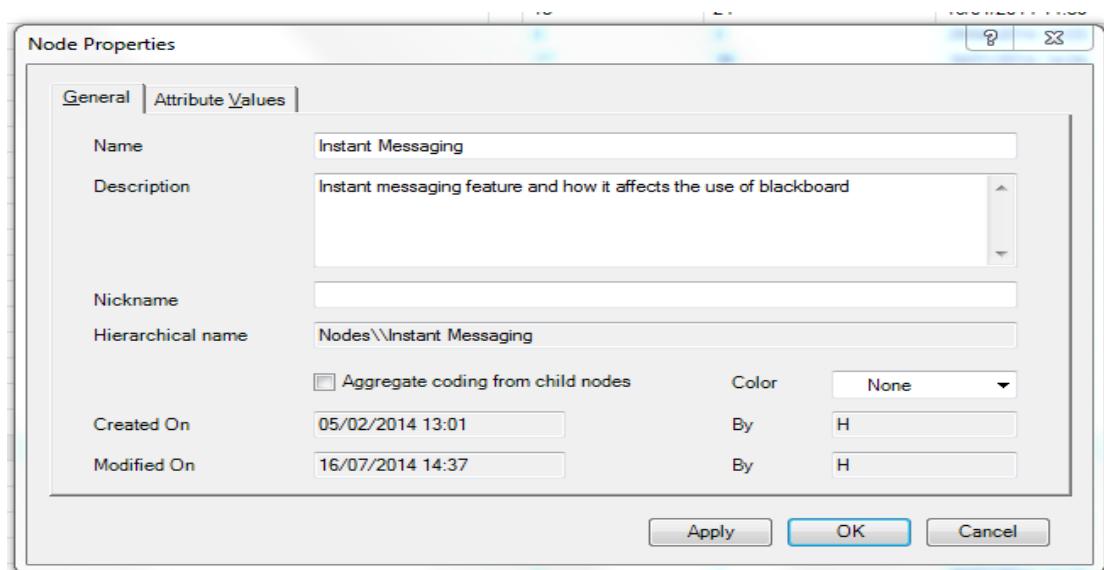


Figure 14 Node Description Sample

4.1.2.2 *Identifying initial themes*

As the researcher was coding data, she tried to identify patterns in the data that would aid the process of answering the research question. This study aims to discover the perceptions of change in teaching practices resulting from the deployment of VLE at Omega College; therefore, the researcher focused on finding

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patterns related to this question that achieve research objectives. After coding several interviews, the researcher started realizing patterns and, as a result, tried to label similar codes, so that the number of codes would be reduced, in an attempt to start identifying themes. The researcher started identifying initial themes: for example, after coding several interviews, it was discovered that academics perceived paper-saving, time-saving and 24/7 materials availability as VLE benefits, therefore these three items were coded flatly, and a node named benefits was created, which they were added to in a hierarchy (see Figure 15 Node Hierarchy).

Name	Sources	References	Created On	Created By	Modified On	Modified By
Benefits	13	33	14/01/2014 14:47	H	15/07/2014 14:36	H
Accountability	21	74	16/01/2014 13:07	H	16/07/2014 14:37	H
Blackboard as a course management system	4	7	11/02/2014 13:38	H	16/07/2014 14:37	H
Blackboard as a storage tool	9	12	16/01/2014 14:53	H	16/07/2014 14:37	H
Blackboard flexibility and availability	14	30	22/01/2014 13:26	H	16/07/2014 14:37	H
cater for larg classes	1	1	11/07/2014 14:31	H	11/07/2014 14:31	H
cater for shy students	1	1	11/07/2014 14:29	H	11/07/2014 14:29	H
Communication	19	79	14/01/2014 14:31	H	16/07/2014 14:37	H
Documentation	3	4	30/01/2014 14:08	H	04/07/2014 13:25	H
Handouts Printing	8	14	27/01/2014 12:04	H	04/07/2014 13:25	H
Igama and visa and other crisis	3	4	17/01/2014 15:13	H	12/07/2014 13:44	H
New Generation and technology	10	20	17/01/2014 12:30	H	16/07/2014 11:26	H
Office visits	17	37	16/01/2014 14:41	H	19/12/2014 11:56	H
Paper saving	8	24	16/01/2014 14:35	H	04/07/2014 13:25	H
Time Factor	15	42	14/01/2014 14:30	H	16/07/2014 14:37	H
Time management	9	14	27/01/2014 12:03	H	04/07/2014 13:25	H
Transparency	1	3	10/07/2014 17:17	H	16/07/2014 12:37	H
Use of Blackboard to collaborate with students from other institutions	2	7	27/03/2014 11:27	H	04/07/2014 13:25	H

Figure 15 Node Hierarchy

4.1.2.3 Reviewing and finalizing themes

As coding and identifying initial themes developed, patterns of data on higher levels started to emerge to reveal that in order for changes to occur in teaching practices at Omega College, there needed to be factors that lead to such changes. It was discovered, for example, that academics embraced new teaching styles like student-

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centred learning as a result of benefits perceived from the system, like improved communication and the ability to discuss topics through discussion boards. At this stage, the researcher named the main 2 themes and the main sub-themes of this study.

4.1.2.4 *List of Themes*

- Factors of Change in Practice due to VLE
 - Perceived Benefits;
 - Institutional Support;
 - Institutional Pressure;
 - Institutional Aims;
 - Pressure from Digital Generation;
 - Perceived Barriers in VLE usage;
 - Perceived Challenges in VLE Usage
- Perceptions of Change in Teaching Practices due to VLE
 - Changes in Teaching Styles;
 - Changes in Teaching Strategies;
 - Active Involvement with VLE Implementation and Exploitation;
 - Active Involvement with other ICTs;
 - Relationships with Students

Each sub-theme yielded several other sub-themes and codes. For example, the sub-theme Perceived Benefits yielded 8 sub-themes, which are as follows: Improved Communication; Paper Saving; Time Saving; Increased Availability; Ability to collaborate with other Institutions; Aid to Business Continuity during Crises; Enriching Classroom Experience; and Holding Students more Accountable. Some of these sub-themes yielded codes, for example improved communication occurred as a result of the use of Discussion Boards, Announcements and Material Sharing. A full list of themes is available at Appendix 1.

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4.1.2.5 *Concept Maps*

Concept maps are concerned with visually presenting relationships between concepts. In this research, themes and sub-themes are considered concepts; in which concept maps will aid in visualizing relationships between them. Figure 16 presents the main concept map, which visually represents relationships between the 2 main themes that drive the study, along with relationships between sub-themes. The concept map shows that, in order for changes to occur in teaching practices at Omega College, several factors play roles that allow such changes, such as perceived benefits and institutional support, which have led to perceived changes in teaching practices for academics at Omega College. Changes in teaching styles and strategies were reported from the data to have resulted from the same factors. All concept maps that explain relationships between theme, sub-themes and codes can be found in findings narratives (see Appendix 9 (Concept Maps Sample)).

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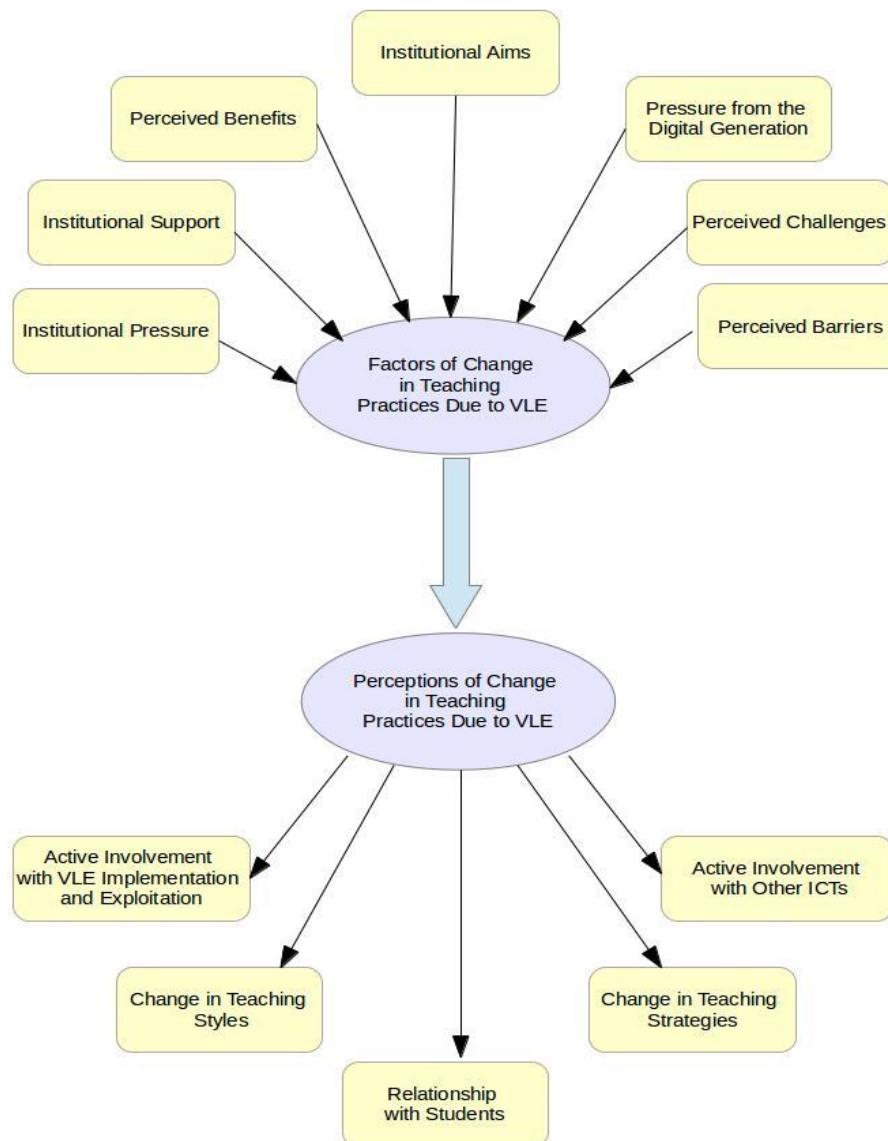


Figure 16 Main Concept Map

A full explanation of factors and how they lead to changes will be presented through findings narratives, in the next section.

4.2 Findings Narratives

4.2.1 Factors of Changes in Teaching Practices due to VLE

As has been mentioned in the introduction, the analysis process yielded to the identification of two main themes that construct the study; the factors of change in teaching practices and the changes in practices resulted from the presence of these factors. During the data collection process, the researcher aimed to interview academics from different disciplines whom either had started their teaching careers with VLE or whom had been teaching before the system was deployed, as discussed in Methodology Chapter.

The factors of changes were realized from academics answers to interview questions. For instance, when they were asked how they used the VLE, their responses included statements like "*I always post the marks on time, so the students will know on which status there are in A or B or C or F sometimes*" I2,. In this quote, the academic was describing her use of the grades feature and directly indicated how this benefitted her students. This benefit influenced her usage and led to more transparency with students, which is a change in teaching practices. In terms of I5, when she was asked about how she use the system replied "*I use it to post, of course, my syllabus, my grades, any announcements, any communication with students as the whole class*". Thus she perceived posting materials as a form of communication with the whole class, which indicates that she realized the benefit of communication which will influence her usage. In terms of I6, when she was asked about her overall opinion of the system, she replied "*Good, but can be improved.*" Her response indicates active involvement with the system which resulted in her suggesting improvements, including "*More lively interaction, better look*". These quotes show that the system look and interface was acting as a barrier in her usage, this factor leading to her active engagement with it. The previous quotes indicate that constructing the study in the current two way relationship is relevant. As mentioned in the introduction, concept maps were created from themes and codes identified. There is a main concept map that includes the first level of themes and codes (see Figure 16).

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For the Factors of Change in Teaching Practices Due to VLE: the following concept map visualizes how the main theme and sub-themes are related (Figure 17 Factors of Change in Teaching Practices due to VLE):

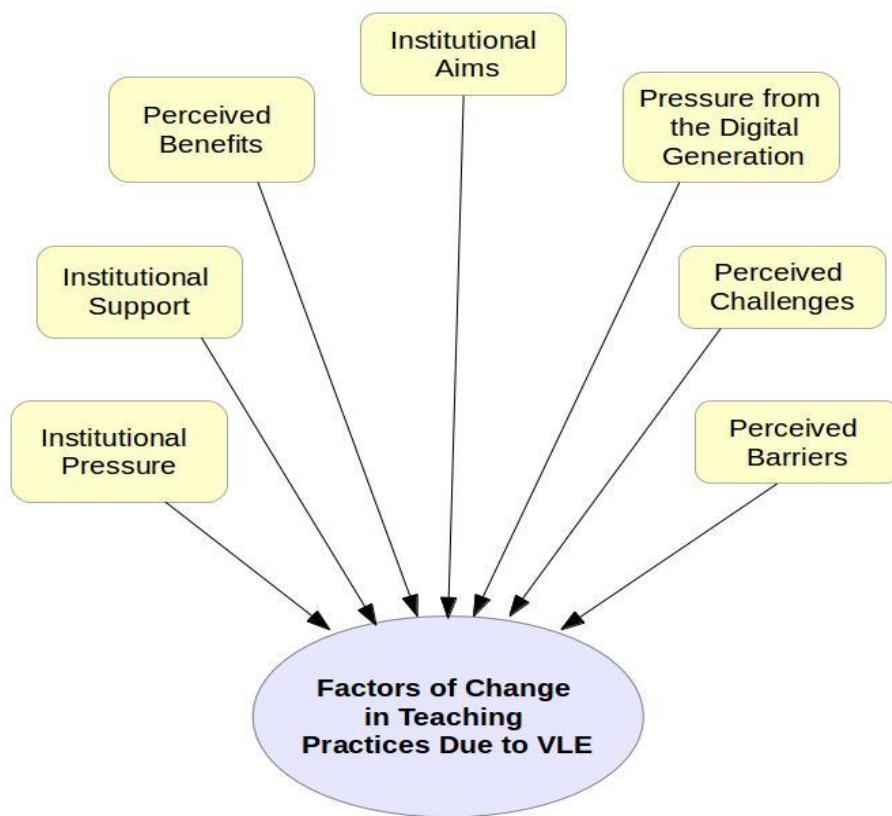


Figure 17 Factors of Change in Teaching Practices due to VLE

During analysis, it has been realized that the factors that shaped the changes in teaching practices at Omega College were:

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- Perceived Benefits;
- Institutional Aims;
- Institutional Pressure;
- Institutional Support;
- Pressure from the Digital Generation;
- Perceived Challenges;
- Perceived Barriers.

A detailed discussion of each sub theme will be presented.

4.2.1.1 *Perceived Benefits*

The study aims to capture the changes in teaching practices along with factors that influence such change, as perceived by academics that used VLE deployed at Omega College. Therefore, academics were asked about their system usage and how they benefitted from it. Inquiring into the system's benefits was relevant. By understanding how academics perceive systems as beneficial, researcher will understand how changes in teaching practices have occurred and on what bases. Benefits were realized by analysing and interpreting the meaning of academic's quot., For instance, when I6 was asked if VLE was an enabler or barrier in her teaching, she answered that it was an enabler, stating "*It enables me just not to care about printing out the slides and the handouts for the students are just posted there*", which indicates that not printing materials is a benefit she realized from system usage, and as such paper saving is identified as a benefit. The following concept map visually represents the nine main system benefits from this academic's perspective (Figure 18):

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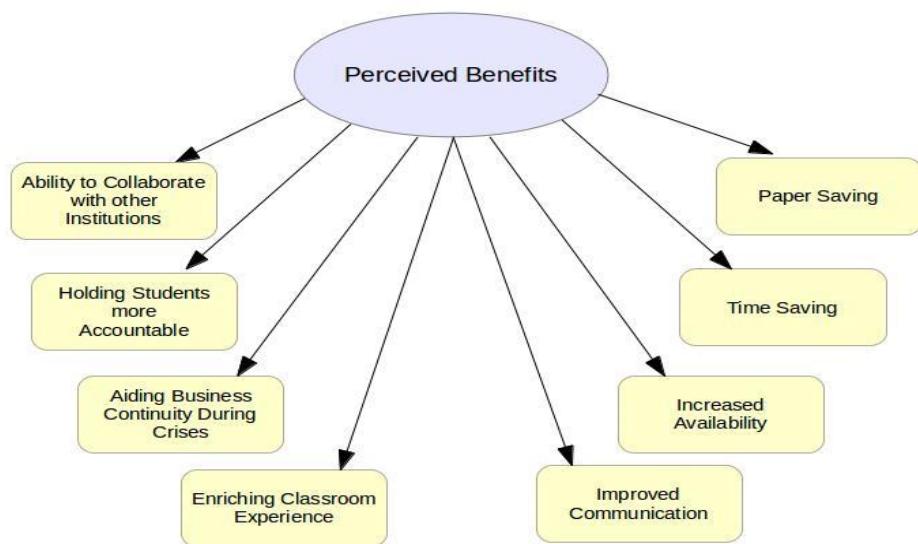


Figure 18 Perceived Benefits

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4.2.1.1.1 Improved Communication

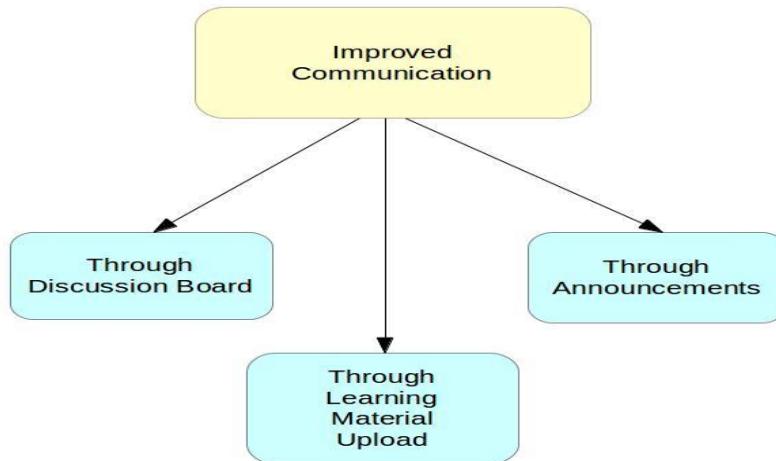


Figure 19: Improved Communication

Academics perceive VLE to be a communication enhancer. Interviewees reported that VLE affected their communication with their students, serving as an effective medium of communication and helping to bridge the gap between academics and their students. Improved communication for some academics was the most realized and appreciated benefit, to the extent that they thought of VLE system as a synonym for communication: "*Blackboard, communication.*" I4. I6, when she was asked about the aspect of VLE that was critical to her teaching, answered "Communication, basically". Moreover, VLE is perceived as an open channel between academics and students "*bridging the gap between faculty and students*" I5, which will lead to better communication, resulting in better teaching and learning experiences.

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During interviews, academics expressed the view that VLE facilitated communication between them and their students from different perspectives, the following quotes exemplified some of these perceptions:

"It facilitated communication between me and the students." I3,

"I use it basically to communicate with my students, not only to post information for them, but also the other way."
I6

"OK, like I said, to me, Blackboard is more for me about communication. That's the only purpose it serves me. Communicating to my students what's going on, 'my daughter's sick' or whatever. For that reason, the only tool that I need on Blackboard, honestly, is the announcement tool." I18

These quotes show that academics used the term (communication) to describe different aspects. For instance, when an academic posted materials and announcements, she assumed that this information reached students and therefore communication had occurred. In several instances, academics referred to communication when they meant materials and information reachability, not human interaction or personal communication.

"From the beginning of the course, look every communication between us, formal communication between us, between me and you, and you are responsible and I am responsible that this is going to be through blackboard." I7

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In that sense, academics held students accountable for any materials or announcements they posted on blackboard and appreciated that it bridged the gap between them and students, being able to use one means to reach all students.

Academics appreciated that communication enhancement resulted from the use of VLE, which corroborate the College Principals initial aim and view "*The blackboard system is so useful it allows the faculty members and students to stay connected.*" I25.

Several VLE features facilitate communication, as perceived by these academics. Although not all of these features are mandatory to use, nevertheless academics use them for their perceived benefit in communication enhancement.

4.2.1.1.1.1 *Through Learning Material Upload*

Being able to upload all course materials in advance has improved communication between the academic and her students. Instead of emailing or contacting students individually, academics can upload material in advance for all students to view.

"It's very important because they get the syllabus, they get the PowerPoint, they get the homework, any project descriptions. Anything will be posted there, so it's a very important tool to get across to the student instead of emailing it." I4

"Nowadays, of course, it's much easier... and broader also because if you can't get it from the book you can go over the PowerPoint slides which are posted on the blackboard; there are exercises there." I20

As has been mentioned (see 4.2.1.1.1 Improved Communication), information availability or reachability is considered to improve communication, which is linked to the fact that, by posting materials on the system, students are able to reach the material posted by academics, therefore their communication with the material is considered a mode of communication with academic staff members.

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4.2.1.1.2 *Through Announcements*

Announcements are a non-mandatory feature, yet nevertheless they were one of the most used features among interviewed academics. It was reported that Announcements was the most useful and important feature in Blackboard:

“Ah, the most important one is the Announcements.” I1

“Announcements are very, very important because you can post materials but if Announcements are not there a student may miss seeing it sometimes.” I9

Several academics reported its effect on enhancing communication, reporting that Announcements aided in keeping students informed about upcoming class events more effectively:

“Announcements, they check it, especially my eight o’ clock class. They check before they leave the house.” I4

“And announcements, if there is like, for example, an exam or class cancellation change in time whatever... that’s the basic use, how I use the system.” I5

In addition, Announcements aided in conveying messages to students in a more reliable manner and avoided academics chasing behind students:

“Well, first it avoids me running behind students to get their assignments with the due dates... It avoids me sending multiple emails even. I just post an announcement.” I6

“Sharing slides, announcing. As I told you, basically making an announcement without Blackboard is very hard.” I6

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“We used to write on the board in the class about a certain announcement some students were absent, some students did not hear, many excuses of students. Nowadays no more excuses they are obliged to go over the blackboard every night and any announcement will be done overnight and they are required to abide with that announcement.” I20

“it eases communication with students, especially that... the type of students that we have they do not, a lot of them they do not check their DAH emails, ok, but they are very connected with the blackboard.” I8

“Yeah, yeah, because it could be email communication, I don’t use it a lot for that in terms of communication of announcements then, yeah, change: quizzes, some content change in a quiz or chapter 2 wasn’t there anymore in chapter 1, that’s invaluable I love that feature and even the fact that it emails them; that’s great.” I17

Moreover, academics used the Announcements feature to prove that communication had taken place and that students were well informed:

“Because it’s a way that I can just put it out there and it sends an email to the student and she can’t come back and say, ‘I didn’t know’.” I4

“Regarding Announcements, this is one of the things that put us into conflict with students, in the sense they don’t follow up. Sometimes I can do a post before the lecture, 2 hours before the lecture and if I do that students will never accept it.” I7

The use of VLE as a means to hold users accountable will be discussed separately; however as has been extracted from the interviews, Communication and Accountability are both served by the feature Announcements. Although posting announcements is an asynchronous form of communication, once this academic posed announcements, she assumed that information had reached the students,

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which suggests that Announcement can serve information reachability rather than communication.

4.2.1.1.3 Through Discussion Board

Discussion Board is a non-mandatory feature where academics can start a thread then students engage in an online discussion. Different rates of use of discussion boards has been reported in interviews. I21 reported that “*one of my favourite features on blackboard is the discussion board*”. She appreciated the fact that some of her students who might be shy to contribute in class could express their opinions more freely through this means.

On the other hand, I7 thought that the feature was not vital at that time, as students levels in VLE usage were not elevated enough for extensive use of such features: “*well I wouldn't say it is of very high importance, because the students are not yet, the level of students I am teaching are not yet in to the level of like... really being keen to be available for discussion time*”.

Nevertheless, academics appreciate that discussion boards might aid in easing communication and keeping students engaged even outside class time. I20 used discussion boards extensively and appreciated that, due to class time limitations, she was able to carry on discussions and keep connected with her students outside class time “*I teach them this topic but theoretically so what I tell them now regarding this topics I will be online for 2 hours on this day on that time if you have any further questions that you want to know more about then post these questions and you will hear my responses and I will be online for 1 hour for more discussions*”.

Several features aid VLE as a communication enhancement tool. Academics sometimes using the term (communication) to refer to other aspects, such as information reachability and availability. Analysing the types of communication occurring through VLE is beyond the scope of this research, thus it is worth mentioning that the perception of VLE as a communication enhancer enabled changes in teaching practices. It aided in allowing engagement with students outside class time through discussion boards, an engagement which would not have been possible without the VLE. This engagement aided in creating more discussions inside class as a result of the online thread, which enabled a more

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student-centered approach toward teaching. This will be discussed further later on in this chapter. Moreover, communication occurred through materials upload and Announcements allowed changes in the relationship between academics and students in terms of accountability and responsibility.

Accountability and how it changed teaching practices will be discussed as part of system benefits, while changes in relationships between academics and students will be discussed as part of the section on (4.2.2 Perceptions of Change in Teaching Practices due to VLE).

4.2.1.1.2 Paper Saving

The deployment of VLE at Omega College has resulted in less printing for course materials and other materials that can be uploaded on the system. Less printing resulted in saving both paper and time wasted on printing. According to academics, less printing is leading to a more environmentally friendly work place, which serves the image of the College as a pioneer in education and social responsibility.

“For environmental safety, and I think it reduces the paper work instead of giving materials and hands on now everything, I mean everything I want to do I do it through blackboard.” I7

“In terms of saving the environment, you don’t have to get all these copied papers, so hard copies are totally eliminated in my courses. If there is something that needs to be printed, I would go through blackboard and print it from there.” I5

“When I started I used to print out all the lectures and I have it as a print out and I have to distribute it for all the students in the class, and that was a hassle, so all of this was removed once we are using the blackboard properly.”

I8

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“We can save paper from printing and then we upload everything and it’s up to them if they want to print or they want to read it from the screen.” I12;

These quotes show that academics appreciating the feature which eliminates the hassle of printing and distributing materials. After VLE deployment, the system is their first point of materials sharing with students, and academics can leave it up to the students as to whether they want to print materials or not.

Printing materials had been the norm in Omega College, where academics were required to print for the students the materials for class. After VLE deployment, some academics encouraged students to bring their laptops, tabs or smartphone in order to be able to access materials directly from them and be able to track lessons inside class. I7, when asked if she still printed materials for her students answered “*never, never. And I even ask them... if they can bring whatever laptops, mobiles just to check and even their notes that its fine*”.

Although uploading materials for students is among the features most used by academics, some academics preferred to print extra materials for students whom they thought will need them for different reasons. I1, for example, stated that “*The students are supposed to be in charge of their own education and come prepared with the papers, but they don’t, so you end up explaining things that they don’t have notes for, so you end up printing it for the whole class,*”. In her case, she printed out materials sometimes to cater for students who were not prepared. In her case, as she taught students at the College Preparation Program (CPP), it might be relevant, as CPP student standards are not yet elevated to College level and they expect their teacher to provide all learning materials for them.

More on the impact of student level and interest on VLE usage will be discussed in the Challenges theme (see 4.2.1.7, Perceived Challenges). In addition, academics, by uploading materials on the VLE, aimed to make students responsible for their own learning in terms of materials accessibility if the students is absent, adherence to deadlines and course rules: “*it makes a lot, for example if a student is absent... I don’t print out the papers for her... she goes into the blackboard and prints them herself or she uses it from the blackboard immediately; it’s up to her, it’s not my*

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responsibility anymore”, II. Student’s responsibility is discussed further in 4.2.1.1.8, Holding Students more Accountable.

Less printing is considered a benefit from different aspects. It serves the College’s image as an environmentally-friendly work place. in addition, it saves academics’ time and efforts wasted in printing and distributing course materials. This feature might not have directly changed teaching practices; nevertheless it has changed how academics prepare to deliver their lectures, which, as a result, will affect their teaching delivery. When distributing and printing materials is omitted, more time will be dedicated to teaching and discussion inside class, which will be discussed in the next section (see 4.2.1.1.3 Time Saving).

4.2.1.1.3 Time Saving

Academics perceive VLE as a time saviour from many aspects. From their perspective, some of the features offered through VLE have aided in saving time both inside and outside class on tasks that used to be time-consuming prior to VLE deployment.

“ For the course syllabus and the presentations it really saves time for me in the class, because... when I come in class... they have already printed the presentation and started asking questions.” I2

“ In the sense of wasting time, I would say 10 15 minutes in the classroom trying to... talk about the instructions that have to be followed, it’s just through blackboard.” I7

“ Because it’s saving time, saving effort, having everything found in the same place, because we deal with a lot of soft files.” I5

“ It saves a lot of time: for example, discussing the grades, making announcements, reminding the students of doing anything, so... it’s a time saver.” II

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Academics appreciate that they can upload materials in advance, and according to them, this feature saves time inside the classroom and eliminates routine questions and explanations, in addition to saving time wasted in printing and distributing hard copies of materials. For example, if an academic wants the students to read a paper before they come to class for discussion, she will upload it, send an announcement asking students to read it and come prepared to class. As a result of this, academics can save time previously wasted in distributing hard copies and reading inside class.

This benefit correlates with paper saving, as uploading materials in advance serves both. Moreover, VLE, according to academics, saves time outside class as well, since, by having all course information posted, students refrained from visiting the academic in her office to ask about deadlines and grades, leaving more time for her to prepare and work. Moreover, after VLE deployment, academics were able to transfer courses between semesters without the need to repeat non-changeable steps: *"It allows you to copy your courses from semester to semester; something I didn't know about before. My colleague, (name), told me... they should have trained us on that"* I4. This feature aided in saving time at the beginning of the semester, usually a critical time for academics, as it requires preparation for the whole semester.

On the other hand, some academics believed that VLE, despite its obvious benefits, burdened them and consumed their time. I2, for example, faced a problem of course overload and though that some features of VLE wasted her time, especially the grades *"Sometimes I enter just to check a mark for a student; of course all these grades should be retyped again on my excel sheet"*. I2 reported that, due to a workload of 15 credits she was not able to utilize the system to its fullest potential: *"It was for better teaching more than the other one, but as I told you the problem is the time... as a teacher with a full load of 15 credits, no TA (teacher assistant) almost... I have more than 125 students"*. In this case, the academic appreciated the system as a utilizer for better teaching, nevertheless, time restrictions and course overload barred her from full utilization and benefits realization. On the other hand, I25, reported that not having time is not an acceptable excuse and therefore academics are required to find time and invest it in learning VLE *"There is no such thing, she has to find the time, we also give them teaching support, you know faculty members do not teach alone... There are certain criteria where you qualify for a*

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teaching assistant, and a lot of time the teaching assistant uses blackboard for the faculty or with the faculty, yes”. It can be said that management and decision-making requires academics to use the system and encourages them to invest time on it and they expect academics to manage their time in a manner that assures sufficient use, adhering to College policy “*I don’t think faculty members are complaining about blackboard and if they are... it’s that ‘I don’t have time’... because they haven’t invested time to use it coz blackboard is not time-consuming, not at all,*” I25. More aspects of College use requirements will be discussed later in the chapter.

Although some academics perceive VLE as a time consumer in performing routine mandatory procedures like grades entering, others expressed that time constraints and teaching loads prevented them from exploring the system and finding new features that might aid in teaching and communication: “*I feel that I haven’t explored it as much as I could, given my time restraints with my teaching schedules*” I21. I1, faced the same situation with time restrictions in exploring other non-mandatory features in VLE: “*now I want to use the discussion boards I want to use the blogs but I don’t really have time because I have 18 hours, and because last semester and the semester before I was taking online courses so I really didn’t have time, and it takes time to learn about the blackboard and to familiarize yourself with it a whole semester*”. This shows that the more academics are interested in VLE the more they explore features and try to allocate time for it, unlike academics who are not interested in the system as Principals like I18 “*If I had more work time, then yes, maybe. If I had less courses, if I had less paperwork, if I had less meetings, if I had less committees, then maybe Blackboard would go up on that...You know, on the hierarchy. But Blackboard literally, honestly, is at the bottom rung of everything for me*”. Although the usage of certain features in the VLE is mandatory, academics who are not interested adhere to the rules without exploring or using more available features.

VLE role as a time saver varies according to academics’ perceptions. While some academics appreciated the fact that it saved time inside class, others appreciated that they had more time outside class as it eliminated students from coming to their offices asking about things that were uploaded on VLE.

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Despite its perception as a time saver, some academics believe that it is time-consuming, even in performing basic mandatory procedures. This perception contradicts what College Principals perceived and anticipated, namely that the system was not time consuming. There needs to be time investment to learn it at the beginning for academics to realize its benefits, and they anticipated that academic would invest time to learn VLE more. On the other hand, academics who were interested in VLE and learning technologies overall were willing to invest time to explore the system beyond mandatory features and wished that they had more time, while this didn't apply to academics who were not interested in the VLE as a principle and only used it because it was mandatory.

This discrepancy in perceptions towards the system as time saver will be discussed later on in Perceived Challenges, Section 4.2.1.7.

VLE at Omega College was a time saver; this is based on responses from interviewed academics as described above. This perception and how it changed teaching practices can be linked back to communication and paper saving. Preserving time wasted in printing materials and distributing them inside class, in addition to time wasted in asking unnecessary questions by students, which is now omitted by providing materials and information through VLE. Both these features created more time for discussion inside class, which is a change towards a more student-centred learning style, as will be discussed in the section on changes to teaching practices resulting from VLE, below.

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4.2.1.1.4 Increased Availability

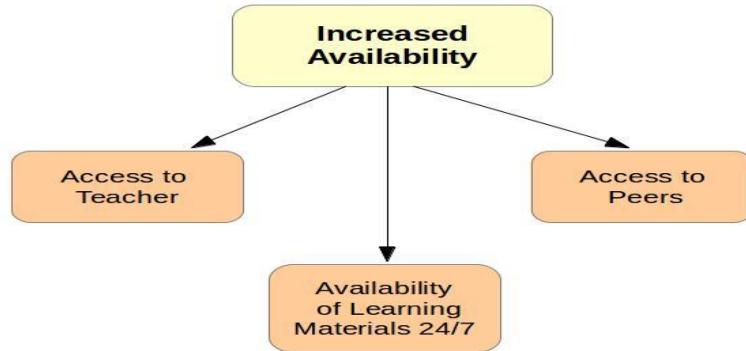


Figure 20: Increased Availability

VLE, with its different features, has increased availability in different ways. During interviews, academics appreciate increased availability based on the following:

4.2.1.1.4.1 *Availability of Learning Materials and Information 24/7*

The ability to upload and access materials and course information on VLE on a 24/7 basis is appreciated by academics and is considered a benefit that they realise from their usage. Academics also appreciate the convenience of materials and information availability for students as well. Although the study is about the perception of academics, nevertheless, academics mention the benefits for their students as factors that shaped their experience, which makes mentioning and discussing them relevant in the study.

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“ The fact that they can see their grade makes it much better. Sometimes they can't come to the college. They want something, they can just go online.” I6

“ Let's say that the student has a reason not to attend class, she will still be able to view assignments or take a look at the picture, I mean the lecture, so that's one advantage.” I2

“ As an instructor you know there is just too much to do and so much to cover it was nice to have something that was accessible 24/7 not just to me but to my students as well, and I think it is really that essential part of Blackboard that still you know fascinates me and I love that aspect of it.” I21

“ Also, I can access the material during breaks and tweak them and update them: that is, if it is made available.” I17

From the academics' perceptions, the availability feature was beneficial for students and aided in better administration of courses. When students are assured that they have access to materials in all circumstances, it reflects on their performance and might lead to more confidence in College services, which, as a result, might lead to better performance. Having comfortable students will reflects on academics and they might be more motivated in using different features in VLE that serve materials and information availability on a 24/7 basis, like materials upload and announcements. In addition, having the ability to access VLE on a 24/7 basis relieved academics from the burden of having to prepare and bring their materials on portable drives and being tied to College computers. The increased availability was an appreciated benefit for both academics and students.

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4.2.1.1.4.2 Access to Peers

The availability of the VLE system on a 24/7 basis through a unified platform gave students greater access to each other. Students at Omega College engaged in different group work and other activities which required them to collaborate outside standard class time. Moreover, the use of discussion boards made students eager to interact outside class time through VLE.

“It’s not during class time, because I don’t want to waste time during class time in searching information. They will do it at home and then we discuss, you know, at that time, at night, these ideas. They will discuss amongst each other and then I’ll come up..., the next day, and we discuss all the information.” I15

“It is definitely as collaborative as face-to-face interaction but, as I said, the college closes, so for the girls it is very difficult to come and go, so within the current setting it might be one of the best ways to encourage these girls to prevent them from being scared and it will take away the fear of sharing and encourage them to work with others, because this is very important.” I14

“This is what of the thing which is very positive components in the blackboard because again we are in the setting where the students cannot stay at late night in the college. They have to leave and it would not be easy to come and go and they cannot always meet up. So this might be one of the safest and the most accepted way for them to be together in somehow” I14

The ability for students to interact outside class time was appreciated by academics for different reasons. This feature ensured that students were not tied to College

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space, as sometimes they were not able to stay after hours for security and cultural reasons, therefore the VLE provided them with a reliable means where they could collaborate. The groups and discussion boards are good examples of features that enable this type of interaction between students, which might lead to better teaching experiences for academics.

4.2.1.1.4.3 *Access to Teacher*

VLE with its different features increased the availability of the teacher to her students. Traditionally, a teacher is only available during class time and office hours. Being able to reach students and interact with them outside classes and office hours is appreciated by academics.

“At one time before the use of Blackboard, and having all these students and maybe... I can say this is my mistake because my schedule is overloaded ahhh I started to see on my evaluation, students evaluation of me... they said I wasn’t not available and that’s very true... so when we started Blackboard... (laugh) I started to ahh see (if we don’t find her in her office we can access her over the blackboard).” I20

“If you don’t have Blackboard, that means you’re limited to class time... There’s no such thing as I’m sitting at home after eight o’ clock and I see something very interesting that I want the students to read before class. I can post it if I have Blackboard.” I4

“most students ask questions because everything is clear for them, some students maybe, the very weak ones, or the nerdy ones, those are the ones usually ask question a lot, ok, but it helps a lot in having them feeling comfortable in knowing that their teacher is with them 24 hours, 24 hours a day, you are with them whenever they send you an email or anything, it’s there, ok, so they don’t feel worried or afraid or anything, ok, especially you know the weak ones,

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those are the ones who are really benefitting from the blackboard, “II

From the academics perspective, for the students to be able to reach their teacher outside of class time is a privilege. Although, as was mentioned before, the study is about perceptions of change of teaching practices from academic perspectives, academics perceive students responses and satisfaction levels as major change factors, and improved access to the teacher is a factor that improves academics experience with the system. The sense of confidence which is enhanced with the system acted as a factor that enhanced and enriched students learning experience, which as a result enhanced teaching for academics.

Increased student satisfaction affects academics, as at Omega College students evaluate academic's performance at the end of each semester, which affects academics' overall assessment. Moreover, with the constant availability of VLE through the World Wide Web academics can upload materials for discussion and reading and communicate directly with students any time during the day. It can be concluded that improved access to academics is a benefit appreciated to all VLE users at Omega College.

It can be said that the permanent availability of learning materials, access to peers and access to teacher was appreciated by all users of VLE at Omega College. While the availability of learning materials omitted the need for students to come to College for information and materials already posted on VLE and allowed ongoing discussions throughout the day at user's convenience, the increased access for students to their peers also enriched learning experience and motivated the students, which, as a result, affected academics experience as well. In addition, the increased availability of teacher to her students added to students' confidence in their teacher, which positively affected the academic's overall performance.

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4.2.1.1.5 Ability to Collaborate with other Institutions

VLE's collaborative features in particular aided Omega College to establish collaborative courses with universities outside the kingdom and in different time zones.

"For active discussion, yes, and again, yes, the architecture, the collaboration with the students in the university of Denver, so our design students communicate with them via the blackboard forum... in fact that we create groups for them, and so they exchange files... on the discussion board. Everything happens on Blackboard and in this way we can facilitate monitoring as well." I21

"When they knew the system was really easy to use, they started using it... which made things very much easier for us and another advantage was we had this issue with the system as we were working in totally different time zones and on different weekends so by the time we woke up in the morning, we had an announcement from them, and when they woke up they had announcement from us." I9

The above quotes are regarding a collaborative course that took place between Omega College students and students from the University of Denver, Colorado. According to the academics responsible, the course needed to take place whether the VLE was available or not, thus the presence of VLE aided in running the course in the most efficient way. At first students exchanged their personal emails for collaboration, then it was discovered that both parties had VLE, so this was then used as the collaboration medium. Accordingly, students were divided into groups and started sharing files and participating on discussion forums. It was vital for Omega College to keep the language exchanged between students formal, therefore they needed a medium that they could monitor students through, and the VLE served this requirement.

Although only one collaborative course was reportedly conducted through the use

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of VLE, nevertheless it proved to be an efficient tool which might lead to more collaborative courses in the future, which serves the College's anticipation of being a leading HEI for girls in Saudi Arabia. The College is gender segregated, and with the cultural norms in the country which restrict girls' travel, to a certain extent depending on families, so they can benefit from this feature and it might lead to changes in teaching practices through conducting collaborative courses with HEIs around the world.

4.2.1.1.6 Aid in Business Continuity during Crisis

VLE as a medium of communication could be beneficial in case of crises like flooding or other problems, like those faced by immigrant workers in 2013. During that time, the Ministry of Workforce initiated a campaign to eliminate all illegal workers from both public and private sectors. The decision was sudden, many academics at Omega College were not Saudis, and although they were legal, they were not under the sponsorship of Omega College, which was considered to be an illegal form of work. As a result, the College had to ask such academics not to attend classes until they found a solution and formalized their visa status. During that time, classes were disturbed and many lectures cancelled. According to program directors, VLE played a vital role in mitigating negative consequences resulting from this crisis.

"I will give you an incident that happened, ok, last year when we had the problem of the Iqamas and the visas... What happened is that a lot of my faculty... did not attend for a week because we were afraid of the ministry coming and taking the iqamas... What happened that week... is that through another technology, Whatsapp, we have a group and I communicated with all faculty members and asked them to... post the lectures for this week through blackboard by voice... as if you are giving the lecture, so no lectures or classes were missed by students... and most of the faculty actually did that and posted the classes." I8

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“But then when the college met the crisis of the visa issues and the employers sponsors issues, they found that the best way was for the faculty to flip their classes.” I7

VLE with its availability on the World Wide Web and with its different interactive features can be a reliable means of business continuity during crisis. Although education is an interactive process in addition to the fact that Omega College is a traditional HEI where academics should attend classes and deliver lectures, nevertheless the availability of such a system during unforeseen circumstances can play a vital role in increasing confidence for both academics and students and assuring students that classes are continuing even though academics are not available. Academics were advised to post recorded lectures on VLE, which might aid a smooth return to normal work routines without much disruption. It can also be realised that, in the crisis mentioned, academics used different technologies to stay connected. The usage of these other technologies will be discussed later in Section 4.2.2.4 of this chapter.

The usage of VLE can apply to other forms of crisis like floods and other natural disasters. These types of benefits are realized more and appreciated by decision-makers who are responsible for ensuring smooth disaster recovery and business continuity during crisis. The availability of the VLE in crisis helped keep services running for students during this period of crisis time and enabled a change in practices at the College, as previously classes were cancelled and rescheduled, which was not always convenient. Although the College is a strictly traditional HEI with face-to-face classes being the sole accepted mode of teaching, nevertheless the availability of VLE during crisis time showed flexibility in the model, it is accepted that academics can use VLE as a means of teaching in such cases.

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4.2.1.1.7 Enriching Classroom Experience

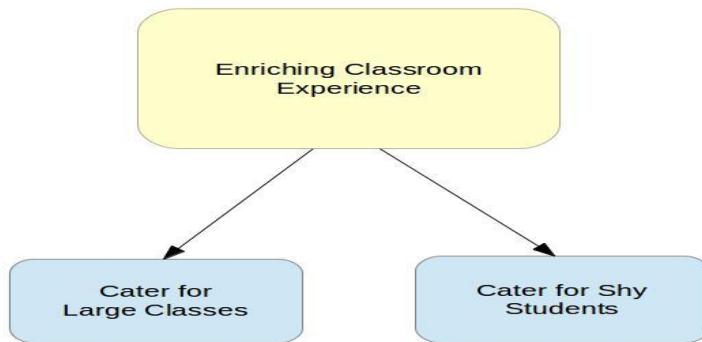


Figure 21 Enriching Classroom Experience

VLE deployed at the College aims to serve and enhance teaching and learning experiences. The College is traditional HEIs where teaching occurs inside classrooms, therefore the role of the VLE inside classrooms is important in this study. From the academic's perspective, VLE has enriched classroom experience through the following aspects:

4.2.1.1.7.1 *Catering for Shy Students*

In classrooms, usually students vary in their participation and interaction with the academic and with their peers. This variation is sometimes based on student's personality. Some students are outspoken and more extrovert and are eager to participate and discuss, while others are shy and reluctant to participate, even if they have the ability and knowledge to contribute. VLE might help cater for this type of student.

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“ Actually they helped me with that minority, you know there are always some students that, regardless of how you teach, they are proactive and they participate, but there are always those students somehow no matter what strategy you try they are shy, in that public form of physical classroom, so in that aspect... it plays a very important role, in sort of giving those kinds of students a forum where they can participate equally.” I21

The discussion board feature is designed to cater for this purpose, as mentioned on the Blackboard website, thus: “*You can accommodate different learning styles. For example, students who are shy about speaking in class may feel more comfortable responding to discussion threads.*” (Blackboard, 2015)

When shy students have a means to express their opinions, the whole classroom experience will be improved as a result. If the academic wants to discuss an issue that has been in the forum, she would be aware of her students’ opinion, communicated through the forum, and might share them in class, which can increase students’ confidence and lead to better discussion and communication. The inclusion of different student personalities in class discussion is a step toward a more student-centred learning, in addition, it will lead as well to transforming the role of academic to class facilitator rather than a sole information provider. More of these aspects will be discussed in the section on ‘ 4.2.2 Perceptions of Change in Teaching Practices due to VLE’.

4.2.1.1.7.2 Catering for Large Classes

At Omega College, some courses, especially General Education usually have large classes, with 20 or more students. Given it is a small college with a full capacity of 1500 students, 20 is considered large.

“Yeah, I think that’s what we need to do now, look at the communication component and how much of that are we using, yeah but also at Omega... in some programs we have very small classrooms, so it’s easier to communicate with a small number of students but in Graphic Design and in the

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School of Design they have larger classes, so that would be a good component for them." I25

Through the exploitation of features like material uploading, announcements, groups and discussion boards, managing large classrooms might become easier. By uploading course materials, academics will be able to save the time wasted in printing and distributing materials for large classes, as discussed in Section 4.2.1.1.3, and by the exploitation of the Announcements feature, academics can convey messages to large student cohorts in a convenient, reliable and mutually agreed manner.

4.2.1.1.8 Holding Students More Accountable

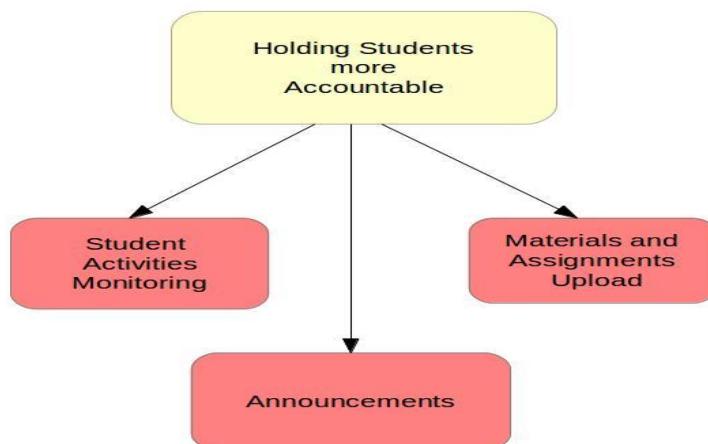


Figure 22 Holding Students More Accountable

At Omega College, the VLE system deployed is used to hold users accountable of their actions and to generate proofs in cases of conflicts or complaints from students. The concept of accountability has been articulated differently by academics: for instance:

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"the other features are important because its what we call covering our.. it helps instructors cover their basis, so that you know when you have students complains or the students come you know come back and say we didn't know this we didn't know that, so then those features are critical, it's there, there it is, the syllabus the assignment sheets the grading rubrics whatever it is, its all documented online with the dates you know when the instructor posted it, and so there is you know less sort of questioning when there is any kind of an issue with a student that's a wonderful sort of documentation to have to say that it was all there" I21

"if I have posted something on Blackboard, I do hold the students responsible and I do blame them, because I said, you know, "I don't have anything to do with this matter. I have already posted on Blackboard." So they are held accountable for this" I6

"In some cases, when the student complains about the faculty, or vice versa, you can always go back and... any issue can be clarified through the evidence. I think this is... how it caters to the wellbeing and effective management of the classroom." I24

Moreover, College's principles represented by Academic Affairs consider VLE to be an accountability tool and useful for resolving conflicts: "*from an academic affairs stand point, it helps faculty members with documentation, when students come to academic affairs with an appeal or with a complaint.*" I25

To achieve accountability, different VLE features are being used. Those features are either mandatory by the College's principles or are being used for their perceived benefits. Accountability is realized after academics have already started using the feature. Moreover, some other benefits realized from VLE serve the accountability purpose. These features are:

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4.2.1.1.8.1 Announcements

The announcement feature is one of the most popular features among academics. it is used by academics to achieve different benefits (see 4.2.1.1.1.2 Improved Communication Through Announcements). Academics tend to hold students accountable for anything they post on Blackboard and then they post announcements to corroborate their posting action. They also use announcements to inform students of all events, like exam times, class cancellations or changes in class time and venue. Some academics even favour announcements over other message transfer features, like email,

“You can send email but I’m not going to... How do I know if she has received it? She could come back and say, “I didn’t get it.” Not all of them are going to send you a read receipt or a delivery receipt so they could come back and say, “We didn’t get it” but Blackboard, it’s there, it’s posted. It’s your responsibility to check it once every twenty-four hours and that’s on my syllabus.”I4

When academics post announcements, they hold students accountable and don’t accept excuses for not receiving the message communicated through the announcement, which aids in making Blackboard a reliable accountability tool from the academics’ perspective.

“To a very high extent... we used to write on the board in the class about a certain announcement some students were absent some students did not hear... There can be no more excuses now; they are obliged to go over the blackboard every night and to abide with that announcement... We used to have some conflicts like when they needed to submit an assignment or research or make a presentation, ah a conflict in the dates or times, but it is no longer a very valid reason as everything is posted on Blackboard and no student can say they didn’t know or didn’t read.”I20

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Posting announcements can be a major tool for avoiding conflicts with students. A group of academics posted announcement for most of their actions on blackboard, such as assignment posting or reading lists.

“Everything can be added, yeah, but if it’s just links or things like that I can post an announcement, “Please do go and read this” and I give the link but if it’s a document, I put it in the content but also I always make an announcement... to avoid any havoc.” I20

For the assignment submission feature specifically, Blackboard at Omega College can act as a reliable accountability tool, as this can be a major source of conflicts and complaints.

“In terms of assessments, everything the student has submitted is proven, I block it if a student has not submitted on time and date where it makes it fair and right to do so, although sometimes students say that they are doing it from home, they are putting it in the blackboard, etc. However, at least they know this is one of the things that we are using and for me they know this is my system.” I7

4.2.1.1.8.2 Materials and Assignment uploads

At Omega College, uploading syllabuses, course materials and assignments on Blackboard is a major source of documentation and aids holding students accountable for whatever is posted on the system (with or without an announcement).

“ When I tell the students from the beginning of the module look at every communication between us... You are responsible and I am responsible that this is going to be through blackboard’ so you have to read any information carefully and you are responsible, you cannot come and argue and tell me I did not see it I did not read it... She has to be

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committed; to learn how to manage her time; and to know her responsibility in terms of being part of the team.” I7

“She cannot come to me and say, “Sorry, I did not know that the deadline was yesterday.” I tell them at the beginning of the semester that it’s an obligation for them to check the important information on the Blackboard and if they do not then this is their own fault and they cannot blame anyone else” I12

Academics referred to responsibility and students’ responsibility to inform themselves via continuously checking Blackboard. The reference to responsibility implies holding them accountable for their actions and not accepting excuses. Omega College, as a small sized higher education institution used to have the culture of students relying to a great extent on instructors to provide them with information. Their students reserved the right to freely complain and question academics’ actions, unlike their counterparts at public universities, which used Blackboard as an accountability tool.

4.2.1.1.8.3 *Student activities monitoring*

The version of Blackboard deployed at Omega College is equipped with features that allow academics to monitor when the student has accessed the Blackboard or even if she has viewed a particular post. It is also equipped with a performance dashboard which allows academics to monitor all of her student’s activities on her course. Such features help make the system a reliable accountability tool from an academic perspective.

“First of all, the students... don’t come back to me and say, “Miss, I lost my assignment. Miss, I didn’t know.” Well, it’s on Blackboard and... I know when the last time the student logged in.” I4

Academics used this feature to check when the student had last seen a post or logged into the system and then act accordingly. This feature might have contributed in

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reducing the number of students who logged in with their peers account just to check the system and forced them to use their own accounts.

"There is a part of Blackboard called the dashboard where I can check the last access of the student, and whether she had seen my messages, received her grade, etc., A group of friends got together and opened up this assignment and printed it out for me and her. So in this case, I had zero access from four girls and only one access from one girl constantly. So I gave them participation grades... Those kinds of things are barriers in some ways, if a grade was attributed to using Blackboard on the course." I9

"Yes, it's in the dashboard. It tells me when her last sign-in was, so if she signed in a month ago, she can't tell me, "Well, I didn't see it." "Well, you didn't log in to see it." And for Freshmen, I usually put a discussion that I don't announce and I just keep quiet and see how many students actually went and look at (name) to do something. So they learn that they need to check it once a day minimum." I4

This feature could be used to corroborate a student's claim or refute it. If a student claimed that she was not informed that a certain task was due and that she checked the system but did not see it, the academic then can check the validity of the student's claim and act accordingly.

*"Not in my teaching but in grading, yeah, because you will always have dishonest students *laughs*; she will come and say the file is not available, so I checked let's say yesterday at 7 o'clock and the file was not available, I'll go back to the system and it will show the exact time; it will show that she didn't actually accessed the system." I5*

Academics, by checking when the student has last logged in to the system, claim that they teach students responsibility and how they can be in charge of their own information. With regard to freshman students, a group of academics found it

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challenging to deal with them as they were used to being spoon-fed information, so the use of this facility aided in teaching them how to be in charge and adapt to university life, where every student is responsible of her own education, unlike in schools.

And in an attempt to motivate the students to access the system more frequently, some academics assigned grades for Blackboard usage, determined by using the activities monitoring feature.

"It is the students' responsibility to check the Blackboard and now, unfortunately, I mean, I try to say verbally it didn't work and I had to link it to a grade. So class participation is linked to it, how many times she accesses the Blackboard. I can print out who accesses what and according to that they get points."I21

According to some academics, this feature, in addition to teaching students responsibility, provided more information about student's behaviours and norms.

"I think also checking the performance because it gives you an, you know, like a log. You can print a log sheet where you can see who accessed what and when; like, for example, three o' clock in the morning, five o' clock in the morning. Why would a student, you know, she stays up. She doesn't sleep enough so the students cannot...That's bad teaching, bad learning habits because if she continues to do that she will faint in your class or...you know. Then you need to take her aside and tell her. So it did actually – if you really look deeply – it allows you to know your students better, yeah."I17

No information was available regarding student's response to such features and whether they felt they were being monitored more than necessary. Nevertheless, the use of VLE as an accountability tool aided in changing the way academics dealt with students. In other words, it aided in changing the relationship between

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academics and students. More of this will be discussed in ‘Relationships with Students’, in terms of considering what has changed as a result of VLE deployment.

4.2.1.2 *Institutional Support*

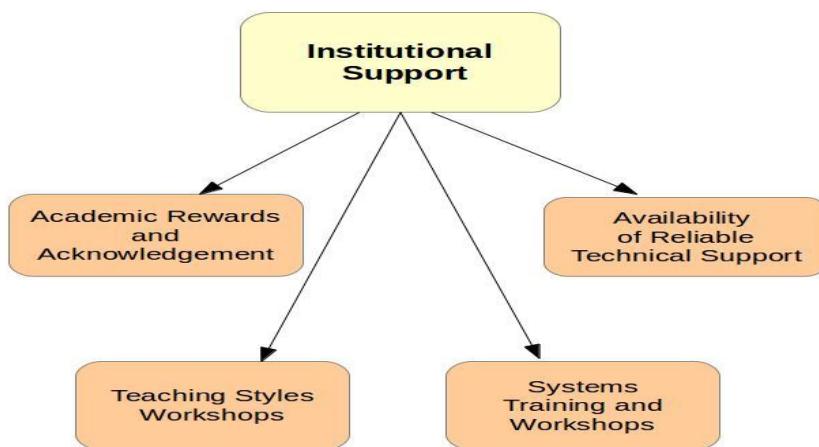


Figure 23 Institutional Support

Throughout interviews with academics, it was realized that the college, represented by decision-makers and service providers were trying to provide support for academics to help them realize VLE’s full potential to serve the college’s aims at the end. The support services were realized differently by academics. This section will discuss several types of institutional support provided by the College, as shown in the below concept map.

4.2.1.2.1 System’s Training and Workshops

Interviewed academics expressed the view that the College provided routine workshops and training sessions on the VLE. Providing such workshop represented

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the college's aim to support academics in realizing the system's benefits and helping them to use it to its optimum potential.

“Gave us workshops on it, yeah, many workshops actually.” I3

“The college can offer more training if it is not an attitude, if it is just a lack of knowhow, the college always provides facilities and... resources for training the faculty, unless the problem was a behaviour or attitude issue.” I24

“the orientation that we have from IT thankful, I mean we thank them a lot that they are doing all these orientation in blackboard” I8

Workshops were held routinely by the IT department each semester. The college, represented by principals, was willing to provide training to encourage academics to use the system, though not accepting attitude excuses, which reflects the importance of the use of VLE to the college in particular and ICT in general. The IT department was responsible for providing workshops and training to academics. According to I26, *“For Faculty, we have more than twelve. We are categorising it by functionality, so we give basic and then we give assessment and then we give grade centre and then we give collaboration and also we asked each major—you know, we sent an e-mail to ask any major if they want any additional features to be displayed for their majors, their Faculties, and we’ve done it for them”*. This quote shows that academics received different types of training, depending on their preferences and features they wanted to utilize non-mandatory features. This suggests some communication issues between academics and the IT department or upper management, which will be discussed in the challenges section, 4.2.1.7: Perceived Challenges.

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4.2.1.2.2 Availability of Reliable Technical Support

During my employment at the IT department at Omega College, there used to be a specific team for VLE support. The IT department had a Help Desk automated system, so that any issues regarding VLE were escalated to the system support team and they dealt with it according to policies set by the IT. This team was also responsible for providing training and orientation sessions for both students and academics. During interviews with college principals, they expressed the importance of technical support represented by the IT department's personnel;

“We have an excellent IT department, and they give us numerous orientation sessions training sessions on blackboard, for the college as a whole and even departments, and then we have a few faculty members who are IT specialists who will also give sessions, so you have to give a lot of support”; “Throughout the year they give orientation sessions, at least twice per semester officially and how many they do unofficially meaning they go to the different departments, I don’t know. You have to get that data from IT, but they are quite efficient and explain to us and share information with us, so there is really no reason why we shouldn’t be using it.” I24

“We trained everybody. Everybody in the college had to attend one of the training sessions, and then practice and those who had problems contacted IT and IT were very good and very patient this year and the year before.” I24

The previous quotes from College principals show that the college perceived itself to be a provider of technical support by ensuring that its IT department provided the required support through training and through attending to technical issues. The availability of technical support is important for any system user and it can boost academics' confidence.

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4.2.1.2.3 Teaching Styles Workshops

During interviews with academics, it has been noticed that several academics mentioned terms like ‘blended learning’ and ‘students-centred learning’, along with mentioning how technology should be incorporated in education. It was then discovered that the College offered academics teaching styles workshops which informed them about the latest in education literature, to a certain extent. Academics interviewed made links between those teaching and learning styles and the use of VLE.

“Actually I found this in Blackboard and I said, “How can I use that?” and then I started thinking and we had a workshop about collaborative work, different learning strategies and then I thought, “I can use it, why not?” just, you know, like every time I check, “Where is this blog? How can I use it?” So it was like a chance for me to try this new strategy and it was really successful.” I15

“We actually had a workshop about blended learning and we came across from blended learning to technology and the virtual learning environment, ammm or education I mean how to use technology wisely to communicate with the students to make the way we teach more student-centred.” I8

“We had workshops on obviously more students-centered approaches and about how you can introduce technology more and they showed us how that if you used technology you would be able to use class time in much better ways.” I14

“I think that the way we use technology is very important. This is why we have held a lot of workshops here and though technology is very interesting to use and what we

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have as knowledge as teachers is very interesting, we need to combine them in the best way for our students.” I6

The College, by providing such workshops, indirectly influenced academics use of VLE. Academics were trying to apply features of VLE to the new teaching and learning theories they had learnt in workshops, which affected their overall teaching experience. Academics, by being exposed to more contemporary teaching styles could be more motivated to incorporate technology into their teaching and the VLE served this purpose. Terms like ‘students-centred learning’ and ‘blended learning’ were mentioned by academics, which will be discussed ‘Perceptions of change of practice due to VLE’ On the other hand, an interviewee perceived the attempt to link new teaching and learning theories and VLE to be ineffective and that is did not apply to her specialism: “*I would say, no, mostly the workshops I’ve been to here at the college have been more almost administrative and organisational rather than teaching, even though a lot of them had teaching or learning in the title” I11.* The same academic, when asked whether technology had directly affected her teaching over her 25 years of teaching experience, answered ‘no’ and expressed that due to her specialist nature the use of technology for her was different and that her teaching improved as a result of her hardship and her ongoing trials to keep herself informed in regards to new teaching styles and strategies. Although the college provided workshops in teaching and learning styles, the link between those styles and VLE was dependent on the academic’s perspective and her view of the system.

4.2.1.2.4 Academic’s Rewards and Acknowledgment

In order for college’s principals to encourage academics to use the system to the optimum, they have established some traditions to try to make academics feel appreciated and encourage others to maximize their usage. System’s usage has already been mandatory and part of an academic’s performance system, so a satisfactory amount of usage, based on a benchmark set by academic affairs, should ensure satisfactory performance in the category of VLE usage, In addition, the college appraises top users in academic conventions: “*We don’t have material rewards, but they can be praised in front of the convocation or those who have some achievements in the use of technology in general and in blackboard they can just be acknowledged, for example, by the dean or in front of everybody” I24.* It is

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true, however, that no direct material rewards are tied to the usage of VLE; nevertheless, it can lead to material rewards, based on the performance management system and academics' appraisal and evaluation by both academic affairs and student evaluation: "*The recognition, the verbal recognition, and the fact that blackboard usage is tied to their performance evaluation in fact adds to their overall evaluation and their salary increase at the end of the year, yeah so its its tied into your merit pay,*" I25. More details about mandatory usage will be discussed later in 4.2.1.3.1, 'System usage becomes Mandatory'.

4.2.1.3 Institutional Pressure

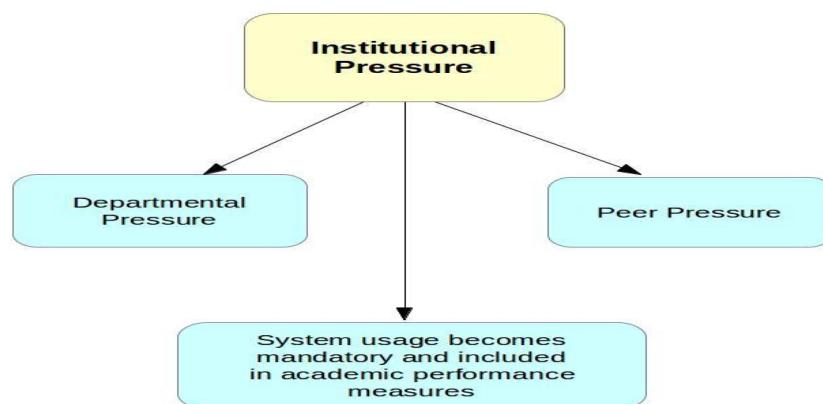


Figure 24 Institutional Pressure

With reference to the previous section, 4.2.1.2, the college tried to provide required support which would allow academics to use the system smoothly. To ensure satisfactory usage, the College indirectly pressured academics to use the system. This pressure might not be a negative aspect, it could be necessary in deploying a new system. The college did this through different means, as given in the subsections below.

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4.2.1.3.1 System Usage Becomes Mandatory and is Included in Academic's Performance Measures

According to I26, the system was first purchased in 2007 and was introduced to academics in the academic year 2008 as an option. In 2012, the College decided to mandate the system for all academics and included system usage in the annual Academic's Performance System (hereafter PMS). I7 was part of a special program that took over VLE and were tried to find solutions that would encourage all academics to use the system. It was then decided to make system use mandatory: “*We had to think how to... encourage faculty and motivate them to use Blackboard, so we thought to make it part of the faculty performance management*”.

Not all features of VLE were mandatory, only certain ones deemed necessary to ensure better communication and to serve accountability purposes (see 4.2.1.1.8 Holding Students more Accountable). These four features were posting course syllabus, posting lectures, grades and assignments, and measuring the usage levels by asking IT department to provide reports on each academic's usage: “*At the end of every semester, we get a report from the IT department about usage per faculty member, according to the particular parameters that we have made mandatory, so how many faculty members are posting the course syllabus, which is very important coz that's the contract, how many faculty members are posting lectures, how many faculty members are posting assignments and posting grades*”, I25.

From the academic's perspective, having the system as mandatory directly influenced their use, and in some cases led to them realize the system's benefits;

“*I think we used it just at a minimum, after it was PMS'ed, yeah, then it became much more widely used.*” I3

“*It started actually like optional. Now it's mandatory to use it because we have to use for better communication with students, better learning strategies. We can communicate. We can actually share, reflect ideas through Blackboard.*”

I15

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Moreover, interviewed academics were well informed about mandatory features and how they were expected to perform in terms of VLE usage, which reflects the college's seriousness in applying and ensuring satisfactory system usability.

"They do hold you accountable in a way that you need to post a minimum of the syllabus, and complete the minimum grade centre and a couple more things. That's the bare minimum that you can use Blackboard." I4

"The minimal usage... as in last year and I think they are gonnie increase it this year, is that you put your course syllabus, you put your PowerPoint presentations, and you use the grade centre." I8

"Academic Affairs mandated the usage in terms of by the first week of the classes the entire course syllabus should be uploaded; whether the students have been given a hardcopy or not she has to access the blackboard system. For Academic Affairs all lectures, assignments and grades have to be uploaded." I9

Although having the system as mandatory aided in increasing system usage at the College to up to 100%, some academics perceived system mandating as unnecessary and didn't appreciate the pressure that resulted from it. I18 was not satisfied with system mandating and thought she had been forced to use it: "A headache, not because it's bad, a headache because I'm expected to use it, you know". I10 corroborated I18 on her opinion of the system, saying that she did not need VLE as she had alternative means to share materials and communicate with her students. More of her issues will be discussed in 4.2.1.7 'Perceived Challenges', but she planned to start using it in the next semester as a result of system mandating.

It can be said that, by enforcing system use on all academics and including it as part of the academic performance system, the college was able to raise usage to 100%. It

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is true, however, that usage was 100% by numbers, this study discusses the actual change that resulted from the 100% usage achieved through system mandating, which will be discussed as the chapter proceeds. Moreover, as the researcher aimed to interview academics who were using the system before it was mandated and after, it was realised that users who were using the system before it became mandatory were either motivated by their own interest or by their departments and peers, as will be discussed below. It was also realised that realising benefits after starting to use the system helped to create a positive attitude toward the system, which is essential for system sustainability.

4.2.1.3.2 Departmental Pressure

With reference to the previous subsection (see 4.2.1.3.1 System Usage become Mandatory) which discussed how mandating the system influenced usage and aided in reaching 100% usage among academics, it is true that this mandating played a significant role, but it is worth mentioning that usage evolved gradually with different factors playing roles, one of which was departmental pressure. It was realised through interviewing academics from different academic departments that usage in some departments resulted directly from continual encouragement from department management.

“We thought it was mandatory and it was there for us to use it, yeah. I think it was more pushed by the department for the teachers to use it, for Faculty to use it then, especially in our line, Islamic Studies.” I3

“I do not know when coz I started with the college in 2008 and the blackboard was there, and we were encouraged by our administration and my boss at that time to use blackboard through all the courses, as a communication tool with the students.” I8

From the two previous quotes, departmental program directors belonging to two different departments, were interested in the system and encouraged academics in their departments to use it. This might have directly influenced the overall usage rate and aided in making system mandating a smooth movement, depending on the

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department. Although it has been mentioned that program directors directly influenced use in some departments, like the Omega Business School and General Education Department, it was not primarily required or expected from them by Academic Affairs: “*Not so much the Program Director coz they were new to it also, so through Academic Affairs and IT*”, I25. This suggests that academics with supervisory positions in academic departments directly affected system usage in their department, which aided in the overall usage in college.

4.2.1.3.3 Peer Pressure



Figure 25 Peer Pressure

In addition to system usage becoming mandatory and departmental pressure, system usage among academics was also influenced by peers in the same working environment. In Arab countries, in many instances peers are competitive, especially people from different ranks, therefore peer pressure might play a significant positive role in system usage. At Omega College, peer pressure took two different forms:

4.2.1.3.3.1 *Pressure by Appointed Champion*

As part of the college’s ongoing efforts to motivate academics to use and utilize the system, it was suggested that for each department, there need to be an appointed champion who was originally a system advocate, and would help and encourage her colleagues to use the system. I21 was among the first batch of system users and due to her enthusiasm, she initiated having a champion in each department to aid with the system. She mentioned that it was a choice and that she enjoyed helping people

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with the system: “*I hear someone complaining about it and I will go yees let me show you how to do this, how to do that; no it was very much my own initiative,*”.

This initiative created a motive and a pressure at the same time, in competitive environments, knowing that peers are more knowledgeable could create a pressure for the rest to be as knowledgeable. I9 said this initiative was helpful: “*We have one lady in our department who knows how to use advanced features so again in last semester we gathered at hers for half an hour, she gave us tips , which was useful*”. Such practice is appreciated by college principals as well and being considered to be supportive: “*Actually we have two young ladies on the faculty who, in addition to IT, give blackboard sessions and they make it very user-friendly for the novice blackboard users,*” I25. This indicates that, although college principals might consider appointing champions for users as a form of support, it might act as a pressure, considering the competitive culture inside the college.

4.2.1.3.3.2 *Colleague Pressure*

As has been mentioned, in the Arab, world especially in the work environment, peers tend to be competitive, especially between academics from different ranks. For example, if academics from the same department are using the system, there will be a pressure on the academics that use the system less to compete and use the system, especially when that system usage is monitored. This can be shown from an academic’s objection to the use of the system as an accountability tool: “*It can be easily abused... It can be something a Faculty member could easily abuse to make it look like they’re doing their job, right?*” I11; “*Certainly it’s a part of our PMS. You have to feel like you’re accountable. You’re expected to upload like a certain number of announcements or whatever, you know. You are... held accountable for what you haven’t done on Blackboard. It doesn’t matter if it’s relevant to your course or not. How often have you used Blackboard? If you haven’t used it, you get one out of seven. It really affects your PMS, whatever it’s called*” I18. Such quotes show that academics felt pressured not only from the system being made mandatory by decision-makers but also from their peers as they were acknowledged more and perceived as efficient users the more they used the system. Such pressure might

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bring higher system usage but may not ensure full utilization, as users' satisfaction and positive perceptions play a role in this case. Nevertheless, such pressure led to more usage, and, as a result, more changes in teaching practices, as discussed in the next part of the Findings4.2.2, Perceptions of Change in Teaching Practices due to VLE.

4.2.1.4 *Institutional Aims*

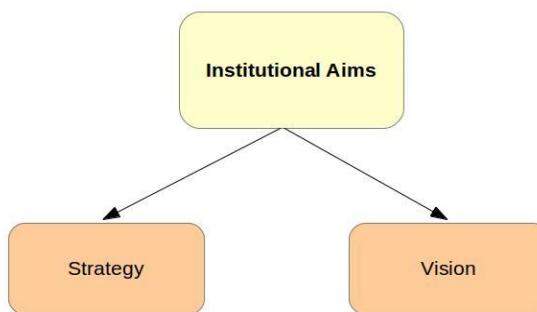


Figure 26 Institutional Aims

The college (which was recently became a university) featuring itself as a pioneer and distinguished HEI for girls. In order to achieve this, they are considering technology in general, and learning technologies in particular, vital factors in ensuring smooth teaching and learning processes. Institutional aims represented by its vision and strategy indirectly influenced system usage in the college. The next subsections will elaborate and describe how institutional aims shaped system usage.

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4.2.1.4.1 Vision

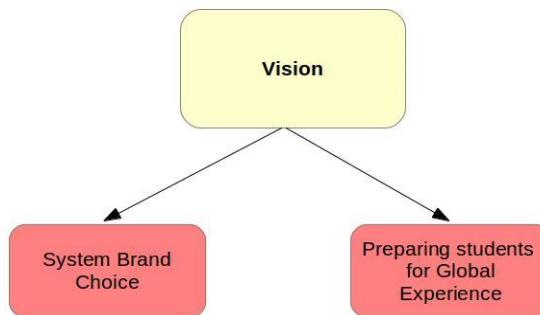


Figure 27 Vision

The college vision statement states that “*Omega University is a premier institution of higher education for women in the Kingdom of Saudi Arabia and a model of teaching and learning. Our graduates will be capable of bringing about positive change for the betterment of self, society and humanity with the aim of pleasing the Creator.*” (About DAH, 2010). Technology plays a vital role in shaping the college’s vision, being a model in teaching and learning entailed being open for new technologies and contemporary styles in teaching and learning, which paved the way for VLE to be accepted and utilized in a way that allowed ongoing changes and improvement in teaching processes. In the case of VLE, the college aspires to achieve its vision through two means:

4.2.1.4.1.1 *Preparing Students for Global Experience*

Since the College’s establishment in 1999, it has been planned that students who graduate from the College should be ready to compete globally and be equipped with education that allows them to work and pursue their studies outside the

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Kingdom. This can be proven by the fact that the original curriculum was based on TIEC and English is the chosen medium of communication and teaching. College Principals perceive the use of VLE as a tool to prepare students for the global experience and make college alumni employable on a global basis: “*we want to move with the rest of the world, we are preparing our students for a global experience, so eLearning is at the top of the list. Not only am I Vice Dean of Academic Affairs but also in charge of faculty professional development therefore eLearning, learning how to flip the classroom... and ebooks, so our students can start using their ipads and ipods and iphones and I whatever else*” I25. Moreover, college principals appreciate that the system is familiarizing the students with technologies that are applicable in Universities worldwide which will benefit them if they decided to continue their postgraduate studies at HEIs around the world: “*this will be reflected in the quality of the students who graduate, when they go for graduate studies they should know these techniques, and I know in the States and western countries they use Blackboard and other types of... technology for communicating with students.*” I24.

Preparing the students for a global experience influenced technology perception by college principals which was reflected in strategies which will be discussed later in the chapter (see 4.2.1.4.2 Strategy).

From the college principals perspectives, academics should be on the same page with students and the use of VLE is vital to cater for today’s students who are mostly technically knowledgeable.

4.2.1.4.1.2 System Brand Choice

As the College’s vision is to be moving with the rest of the world and trying to deploy latest technologies that allows them to aspire their visions, the brand which is Blackboard was chosen based on this vision. According to I26, the brand was chosen based on its popularity, ease of use, functionality and the fact that it was not open source. They were specifically planning to purchase a non-open source system in an attempt to ensure reliable technical support and the ability to customize the system, which reflects the college’s vision to aspire to new technologies and added functionalities to support teaching and learning processes. College principals did

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not directly choose the brand, IT were asked to evaluate different brands and then Blackboard was chosen. Nevertheless, I24 during the interview, although she was not directly involved in the system brand choice, asked me about other systems in the market and the position of Blackboard among them, and when I told her that by statistics it is the most deployed VLE around the world she expressed satisfaction, which corroborates what she had previously expressed: “*We made the right choice; we want what's gonna facilitate global excellence, so I don't think we should be over the years using something unique when everyone else is using Blackboard, and also we recruit an international faculty, so it's going to bring people in and who will be familiar with this technology whenever they come from*”I25.

4.2.1.4.2 Strategy

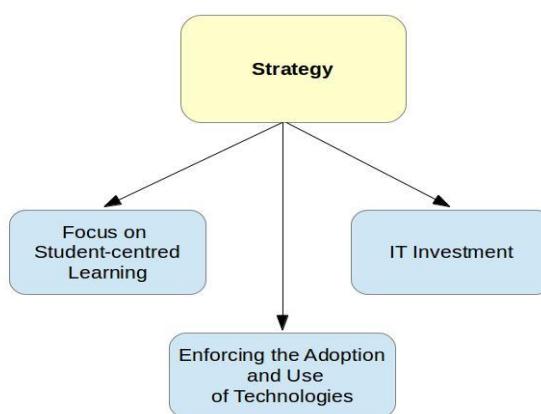


Figure 28 Strategy

In order for establishments to achieve their aims and develop workable plans to fulfil their vision, strategy needs to be carefully formulated. And to ensure efficient use of newly deployed technologies and maintain its image as a pioneer HEI that depends on technology to achieve its aim, and ensures that VLE will be utilized in a way that assures efficient changes in teaching and learning processes. The following strategies have been put into action, as has been reported from the data:

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4.2.1.4.2.1 IT Investment

Since the college's establishment, investing in IT infrastructure has been a priority. The College includes capital IT investment as part of its strategic plan: "*The college is very serious about incorporating Information Technology in teaching, and actually if you just visit the strategic plan of the college, you will find that IT and its use and utilization of IT is part of the strategic plan*", I24. As a result of IT investment being part of the College strategic plan, large budgets are allocated to IT solutions, and in the case of VLE, after the original investment, it was realized that the system was not being utilized in a way that would achieve satisfactory returns on investment, and therefore it was decided that intervention was needed: "*Three years ago I wouldn't say it was good investment, and I mean I wouldn't say it was a good investment anyway, but I wouldn't say that it was getting the return that it should; but now, gradually, over the years, since we made it mandatory, first we invested in training... everybody in the college, who had to attend one of the training sessions, and then they practice and then those who had problems contacted IT and they were very good..., The benefits have been maximized, and also gradually it will be increasingly, so; it is like an investment and I am sure in the future we will see more benefits from it*", I24. College principals were satisfied with the return on investment yielded from VLE an anticipated more usage and utilization in the future: "*We are now at the tip of the iceberg, we still have ways to go, we still have to stress the communication components, yeah, we still need to look into the virtual classroom, yeah so we are not finished, yeah it's definitely worth the investment*", I25.

It can be concluded that the College's strategy in IT investments is flexible, with concentration on returns on investment rather than budgets. This was clearly shown in the original choice of brand, where the chosen brand was not the most cost effective brand available on the market but was chosen based on popularity, availability of after-sale customer support and customization capability, which reflects the college's strategy toward other IT solutions as well. The college focuses on realizing benefits from technological solutions, reflecting the aspiration for change in both teaching and learning processes.

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4.2.1.4.2.2 *Enforcing Adoption and Use of Technologies*

The College adopted a strategy where it was not acceptable for an academic not to incorporate technology into her teaching activities. Academics with their different ranks and age groups were expected to demonstrate competitive abilities in their technology use and no excuses are accepted: “*We have a lot of world cafes now where we sit in the classroom in groups, and we expect them to have the technology and the college is wired for the technology so yeah we are technology-friendly, we have to be and the faculty members have to move into that direction*”, I25. College principals pledged to provide support to academics in terms of training, reliable technical support and providing teaching assistants when needed, thus they didn’t accept excuses like time management issues and negative attitudes toward the system in particular or technology in general.

“I don’t think faculty members are complaining about Blackboard and if they are... it’s because they haven’t invested time in using it coz blackboard is not time-consuming, not at all”, I25

“We the college can offer more training if it is not an attitude problem; if it just a lack of know how, the college always provides facilities and... resources for training the faculty”, I24

“So you have to give a lot of support to people who are traditional teachers but there is no room for traditional teachers, if you are gonna be student-centred you can’t be traditional. Teaching is not a passive activity, its active, yeah, blackboard even though it’s virtual, it’s part of that activity, so the days of traditional teaching are gone”. I25

*“You know if you are dedicated to excellence, you have to move with technology, if you don’t, you have to leave the teaching profession *laughs*”. I25;*

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It can be concluded that the use of technology in teaching for academics is vital and an aspect of which they are evaluated on. This reflects the college's strategy in ICT as whole and puts into perspective the large investments it makes in terms of IT and the means they use to enforce and encourage usage of ICT tools among academics. It was clearly articulated by principals that the college does not accept any academic not using this technology and does not tolerate such resistance and attitude.

4.2.1.4.2.3 *Focus on Student-centred Learning*

The College through its strategy in allocating large budgets for IT solutions and encouraging academics to use different technological solutions in their teaching has attempted to shift the teaching focus to be more students-centred. From interviews with college principals, it was realised that investment in IT solutions aimed to shift the focus onto students and create a more student-centred learning environment: “*at Omega our focus is student-centred learning, Blackboard is a huge supporter in that effort*”, I25. In this section, the focus will be from an institutional perspective, while more about the impact of student-centred learning on teaching will be presented later in Section 4.2.2.1.3, ‘more discussion in classrooms as part of students-centred learning’.

According to I25, the shift toward a more student-centred environment was already happening in the College and all support was given to academics to adapt to that change: “*You have to give a lot of support to people who are traditional teachers but there is no room for these practices. If you're gonna be student-centred you can't be traditional, teaching is not a passive activity, its active, yeah, Blackboard even though is virtual, it's part of that activity, so the days of traditional are gone*“. in contrary to student-centred learning, college principals perceived the traditional academic-centred method as not enjoyable and that it might adversely affect students response to teaching: “*You know learning and teaching is something enjoyable for the students, I mean now students don't accept the traditional way of teaching*”, I24. Thus it was important for academics at the college to adopt student-centred learning.

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VLE is considered by College principals to be a tool to support the student-centred learning approach, and from the institutional support provided (see 4.2.1.2 Institutional Support), it can be said that the college is serious in adopting the latest in teaching and learning theories and is using technology to facilitate them. It is early, however to conclude whether the use of technology has influenced the teaching and learning process, which will be discussed later in 4.2.2 ‘Perceptions of change in teaching practices due to VLE’. Nevertheless, it is worth saying that from institutional support and aims, changes and improvements in teaching and learning processes through the use of technology in general, and VLE in particular, are important for the college.

4.2.1.5 Pressure from Digital Generation

These days most students in HEI, especially on undergraduate courses were born in the information age, therefore, they expect their HEIs to be digitally mediated. At Omega College specifically, as a small-sized private HEI with students having strong presence in decision-making, it is one of the few HEIs in Saudi Arabia with a student government elected body, unlike public universities. This strong influence made adapting to students preferences a must, otherwise students might refrain from choosing the college as their HEI. As a result, the college, in addition to having aims to fulfil through strategies, is trying to respond to students preferred teaching and learning methods. Academics, along with college principals are aware of today’s student’s levels and trying to respond to them with different means.

“Nowadays talking about the generation themselves they are high tech... the way they look at things; the way they can acquire knowledge... we have to catch up with technology so that we can entice and reach the level they expect.” I7

“For sure, because change is coming, and every time we have a new batch, they are becoming more alert; they know that “oh this faculty member deals with IT with blackboard only, be attentive, be careful”. ” I7

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"This new generation is very... technology-oriented, and so this is part of keeping up with... you know progress all over and... the environment around us." I24

"I don't think they're putting pressure on, coz I think we are moving in the same direction, but they are very very receptive; for example, there used to be a time when we told students, "do not bring your smartphones to class", now we say yes bring your smartphone." I25;

Responding to students need is a must from academics' and principals perspectives and the use of technology is paving the way towards a more student-friendly learning environment. Despite the fact that they might not use the phrase 'pressure', it can be said that responding to students needs is shaping college's decisions in terms of technology solutions, and therefore can be considered to be responding to pressures imposed by the current generation.

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4.2.1.6 Perceived Barriers in VLE usage

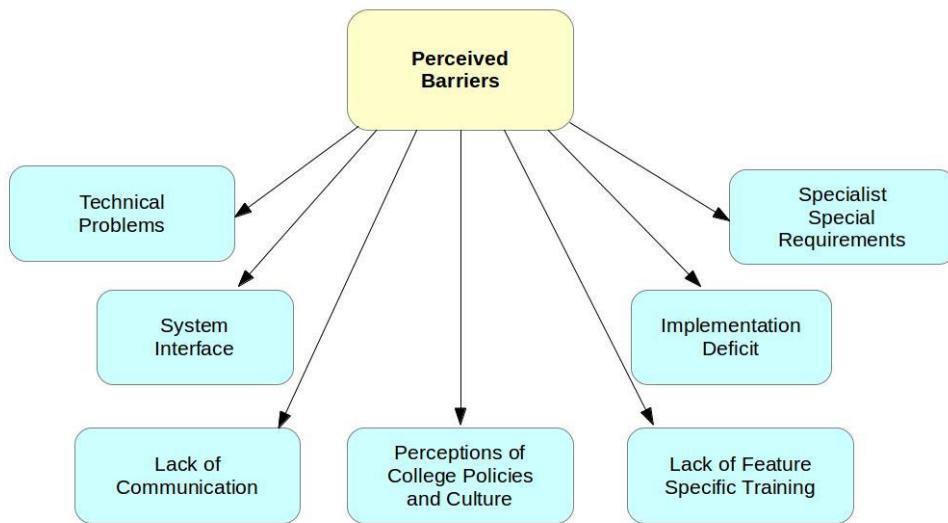


Figure 29 Perceived Barriers

From the discussion of system's perceived benefits, institutional pressure, support and aims, it can be realized that the VLE is becoming an important tool with both educational and managerial emphasis. Nevertheless, system's usage is being faced with barriers from academic's perspectives that may restrict their usage either fully or partially. This section will discuss perceived usage barriers from academic's perspectives.

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4.2.1.6.1 System Interface

System interface refers to the overall appearance of the system. It has been expressed by a number of academics that they personally feel that the interface is not of their preference and that this is restricting them from realizing its benefits.

“the reason why I don’t use Blackboard is because I’m not very convinced that it’s the most effective interface”

“I had to click in several different directions to go to several different things. Setting up your own account, your own interface, was also a very difficult feature. There’s so many things that you need to click on, that you need to learn, that you need to know about it. It’s not straightforward. It’s too intense.” I10

“...Well, I...There are some customisations you can do with the colour and background and stuff like that. Regarding the left-hand column, my understanding – and I don’t remember where I learned this – my understanding was: that is the skeleton of the system and we can’t change that.” I11,

“it’s boring. I believe the design is very poor.” “I think it is affecting me. I think it is affecting students. The menu is not user-friendly, like I cannot find things easily unless I know where it is while with the websites or the sources which are designed appropriately, you just find things by heart.” I12

“The Blackboard is ugly.” “It’s so abstract, the colours and—I’ve seen the Blackboard—my daughter, she goes to—I’ve seen the Blackboard for Babson University, in the US. It’s more—I don’t know, to me, to my eyes, it’s more relaxing to my eyes.” I13

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"It just looks too educational. It looks really bland. It doesn't feel visual. I don't have any images on there. I can't...you know, it just doesn't feel...I'm sure you can personalise it but then I just kind of feel that's too much work required on my part to personalise it." I18

As can be concluded from the previous quotes, academics perceive the system interface negatively for different reasons. In some cases, the academic perceives the whole system as negative, and therefore for her the interface is one of the reasons that justify her perception and her unwillingness to utilize the system. This case can be exemplified by I10, who has developed alternative website for knowledge sharing between her and her students and she described the interface as being bland and unattractive and she expressed that this is restricting her from utilizing the system and realizing its benefits. Another example is I11 and I18, both expressed that although the system interface is customizable, they believe that the system's interface itself is not attractive and not comfortable to the sight and therefore this is restricting and acting as a barrier in terms of system utilization.

On the other hand, a number of academics perceive the system generally positive and are realizing some of its benefits, thus are finding the interface a barrier and is restricting them from having a complete positive experience with the VLE, this can be exemplified with the case of I13, and I12. Both academics use the system and appreciating its benefits, yet they perceive the interface as a barrier.

Although that such a barrier might not fully restrict academics from using the system especially that the usage is mandatory by the College's administration, such a barrier might affect the overall experience for academics in VLE usage in particular and learning technologies in general. Addressing such issues might aid in avoiding gradual declining in system usage which affects system's sustainability. the fact that the system deployed is not open source and that a service plan from vendor is being operated, College's IT department might consider resolving the issue.

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4.2.1.6.2 Implementation Deficit

The VLE deployed at Omega College is a standard Blackboard Learn and, according to the system vendor should fit all standard courses. Nevertheless, it has been reported by a number of academics that the system lacks some essential components which are beneficial for their taught courses and their absence might act a barrier in system utilization.

“ There are some options in blackboard that are not activated, because the college did not pay for this and this specific enablers or options or functions... A voice and video lecture in blackboard, this is an option but when I contacted the IT director and I asked her why is it not working, ok, she said no we didn’t apply for this function and we didn’t pay for it” .I8

The absence of the voice feature affected the user and she thought the presence of the feature would have created a more positive experience for her with the system.

Another feature that was lacking in the VLE feature deployed at the College was the Math component. Academics who teach Math find it challenging to utilize the system on their teaching and are finding solutions other than VLE “*Blackboard to me with Mathematics, it’s really hectic. It’s not only hectic, it’s not beneficial. I’d not say beneficial*” I13.

The lack of such components barred some academics from fully appreciating the system. This issue, like the issue of system interface, might have been resolvable through contacting customer support, as commercial VLE has components ready for different courses nature, which might have aided in improving users experience. More of VLE not being fit for all courses will be discussed later in Section 4.2.1.7.3.2 Perception of System as not fit for Purposes.

4.2.1.6.3 Perceptions of College’s Policies and Procedures

During interviews with College’s principals, they expressed that the College provided support from different forms for academics to encourage system

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utilization. Nevertheless, a number of academics perceived a number of the college's policies and procedures in addition to the culture as barriers to system usage. I21 was ranked as the top VLE user and considered herself a system advocate. She believed some policies and procedures limited her system utilization: "*Initially I felt that not blackboard but our use of... blackboard was restricted by the college*". She was one of the first users to try the system, and according to her, in the beginning, they were instructed that the usage of certain features was not permitted, as they contradicted College policies "*I remember in that initial first pilot phase we were told not to give quizzes online, not to use that functionality, not to use the test. I think the policy might have changed but it just stayed with me, because we were told that when I was experimenting you know really when I was starting to learn how to use it I was experimenting and there were certain features we were told... don't use it for evaluation*". It is true that the user's perception of policies might not be based on solid facts; nevertheless it restricted her from being able to explore and use the system more freely given her advocacy of the system.

A number of academics reported that they used VLE for minor testing, like pop quizzes "*I use it to post, of course, my syllabus, my grades, any announcements, any communication to the whole class, discussion boards, online quizzes*" I4 "*And exams, submissions, quizzes and stuff, plus sometimes we have... multiple choice questions that are automatically corrected... for basic courses.*" I6,. Nevertheless, other academics refrain from using online testing for several reasons like the unavailability of computer labs or technical problems "*I used the quizzes at the start, but sometimes we had some technical problems in the lab, and I didn't want to put myself in this position, so I stopped using it in terms of quizzes in class,*" I5. Other academics perceived policies and procedures as restrictive in terms of not giving academics the freedom to decide what was a better fit for their courses in terms of testing and teaching strategies: "*We talk about academic freedom; we talk about being using best practices; we talk about blended learning; and there are lots of things that the college calls for but when it comes to implementing these things there are some gaps where it may not be accepted by the college.*" I7.

This participant provided an example of flipping classrooms which was, according to her, not accepted by College at the beginning then they decided it might help during a crisis (see 4.2.1.1.6 Aid in Business continuity during Crisis). This attitude was perceived by I7 as being restrictive, while it does not necessarily reflect the

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College's vision as it is the perception of academics and how they see policies being implemented.

I25 stated that flipping classrooms and virtual classrooms might be considered in special cases: "*if the instructor is absent, then she has to have catch up classes and these put burden on the student because they have to agree to come after hours or during lunch time or at the weekend, so if you have a virtual classroom.... I think it would help with this*". However they stated clearly that virtual classrooms were not to replace face-to-face normal traditional lecturing and should be limited to special circumstances, like absenteeism or professional development.

This sometimes contradicts what some academics perceived as good teaching and in which they demanded to be given more freedom: "*I can still turn blackboard in my favour, but in the sense of structuring the timing of the delivery of my course, the way I am going to structure the whole course..., well this part... I am going to do it through podcasting, where students have to watch; it they have to reflect that it's going to take us a week then next week we are going to meet for 2-3 hours to reflect on their views, and then to conclude and come up with the concept. Done? They got it and they experienced it and they knew it, but this is not accepted by the college, not because the college is backward or because... there isn't that freedom... They will be worried they can't customize the mode of delivery to everyone and assure and trust they are going to do it the way it should be done*"I7.

Such perceptions might act a barrier in utilizing system features. Academics are considered the main systems users as their usage shapes students' usage and utilization, therefore they need to have confidence and satisfaction, otherwise the whole system in the College might be jeopardized.

It can be stated that the perception of the college's applied policies by academics might affect their usage either positively or negatively, this might suggest that bridging the gap between academics and College principals is important in order to clear misunderstandings and aid the creation of a better environment for VLE usage and utilization.

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4.2.1.6.4 Perceived Lack of Feature- Specific Training

Interviewed academics confirmed having general system training and workshops every semester for new and returning academics. Nevertheless, a number expressed how they required more specific training that concentrated on specific features that they found challenging. Moreover, returning academics expressed the need for training sessions that targeted them directly, as they didn't need general training like the sessions offered to new academics.

“I did not get the right training... Maybe I did not have time, I mean IT do from time to time give training sessions but we are busy.” I2,

“Grade book is good... I haven’t gotten into the nitty-gritty of the grade book, like I don’t know how to calculate columns yet. The college has not done a great job in training us at all. They will throw it up there once and then not do it again, so the training part is bad... They just give you the basics and then they throw you out there. . “ I4

“I mean the orientation that we have from IT, I mean we thank them a lot that they are doing all these in blackboard, but I don’t think this is enough.”” There has to be more effort in educating the faculty about all the features, different features in details, not generally about blackboard.” I8

“In fact I wanna know if there are any advanced classes..., because the ones at the orientation sessions are very basic.” I21

“I am not saying they do not train us but it always happens that they focus on the new faculty and it is always at the time where I have classes. I was never able to attend. “ I14;

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Academics perceived receiving more targeted training as a necessary step toward a better system experience. From the previous quotes it can be said that they appreciated IT efforts in providing general training, but demanded more training that targeted returning faculty who were familiar with the system and required more advanced training that would enhance their system usage. Moreover, they appreciated having training in mandatory features, like grades, as not being able to use such features might affect their overall performance (see 4.2.1.2.1 System's Trainings and Workshops). On the other hand, I26 confirmed that they already conducted feature specific training sessions on a semester basis "*For Faculty, we have more than twelve. We categorise it by functionality, so we give basic and then we give assessment and then we give grade centre and then we give collaboration and also we ask each major... if they want any additional features to be displayed for their majors, their Faculties, and we've done it for them,*" I26.

This interviewee also confirmed that the feature specific training had been held for two years. On the other hand, academics complained that they did not receive feature specific training and that all workshops held by IT targeted new academics, a discrepancy might suggest missed communication channels between academics and IT. The lack of such training from an academic's perspective might reflect the need for more communication between them and IT rather than more training. The lack of such communication channels might act as a barrier that may restrict academics from utilizing features that they think they need training, for while such training was held by IT, it was without them being informed.

4.2.1.6.5 Specific Specialist Requirements

The deployed version of VLE at Omega College is as was mentioned before Blackboard Learn with all standard features. Those features, according to interviewed academics, are served the needs for mandatory features like grades, syllabus & materials and assessment uploads. Nevertheless, academics who taught specific courses reported that they were not able to utilize the system as the deployed version was not compatible with their taught courses.

I6, who teaches programming courses, expressed that submitting assessments through VLE was challenging: "*The problem is that by copying and pasting into*

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Blackboard, the whole format would change, so the area where you can post something cannot be controlled, the format I mean and many times, you know, when I post something I cannot really control particulars.” .

I21, this individual was, by statistics, the most active user of VLE, expressed that she was not able to utilize all features on VLE in all her courses due to the nature of her courses, which were based on design “*literature or Math or History or Sociology are very... typical courses where I assume they are assessed by... written formats or a test paper or real project, etc. Whatever, for us in Design Interior and Architecture are the core of our study is the design studio, so actually I would have expected somebody else to really be using blackboard a lot more than me because you can’t design or asses design on blackboard*”. She also expressed that having a feature in VLE which supported real time design and allowed students to sketch on the system would be a well appreciated enhancement to the system: “*It could be enhanced... Maybe we have it but we don’t use it. It is called the whiteboard, where a student can actually sketch in real time and sort of share ideas*“. With the existing VLE, her students sketched and then uploaded the final sketch onto the VLE, and even uploading was sometimes not possible due to the limited size of allowed uploads on the system: “*The problem is in our department... our files are very big and we have a major problem with backboard in terms of the space and the capacity on how much it can take in big projects and big files,*” I14 .

Another academic who had difficulties with the system as a result of her course nature was is I13, who taught Math courses. According to her, she used the system to upload her syllabus, post announcements and final grades and then used another system provided by the text book vendor to manage he math courses and allow students to post homework online and be assessed through the system. The existing version of VLE was not fit for Math which forced the academic to try other means: “*It’s hectic for me and the students; they always complain... For example, I give them quizzes during the weekend since from 6 a.m. to 6 p.m. you have one hour to access a quiz. They come to me Saturday, which is now Sunday, and say “Miss, I tried but it didn’t open. Nothing was there. It was blank” or “The graphs didn’t show, so I couldn’t pick the choices, MCQs. I couldn’t answer the MCQs because the graphs weren’t showing*”. So it’s an obstacle and as a result of the VLE not being beneficial for them “*we have permission from the IT and they know that*

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we're using Pearson MyMathLab, so by the end of the semester for the course, we give them our ID and password and they access MyMathLab, to just prove that we're using MyMathLab. So we don't depend much on Blackboard at all, except syllabus and announcements” . As is shown, the lack of features fit for Math courses, for example, acted as a barrier and prevented academics from using the system as sole system for teaching and learning and they were thus forced to use other means.

From the previous quotes, it can be concluded that the current VLE deployed at the College can fit some courses with no glitches, usually the normal courses which do not require specific tools to be installed or requires uploading of large pictures and designs. I12 when she was asked if the current VLE deployed is sufficient for her courses replied” *I don't think we're that specific that we need something special. We're normal courses.”* From which it can be concluded that the VLE is more fit for courses than other courses from academic's perspective. This barrier might affect VLE usage and as a result, could affect changes in teaching and learning processes due to VLE. For example, if academics who teach Math and Programming courses do not utilize the system in their teaching, this will result in the system not being used for teaching and learning purposes, and instead being used as a means of communication or for other purposes. This barrier could also motivate academics to be more actively involved with the system. They could ask for more VLE features to be installed, which might overcome these types of barriers. More about how academics can be actively involved with the system will be provided as part of the Changes in Teaching Practices (see 4.2.2 Perceptions of Change in Teaching Practices due to VLE).

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4.2.1.6.6 Technical Problems

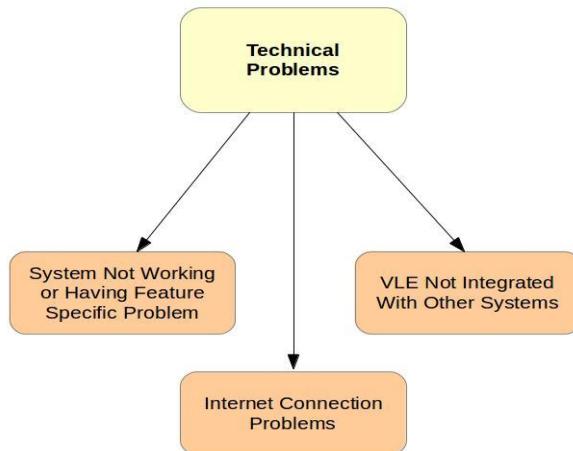


Figure 30 Technical Problems

Computer systems deployed in any establishment face technical problems from time to time. It is the frequency and size of those problems that might judge if the problem is a barrier or just problems that does not affect functionality and reliability of system. At Omega College, technical problems reported by academics are fall in one of the following categories:

4.2.1.6.6.1 *System not working or having a Feature Specific Problem*

It has been reported by a number of interviewed academics that sometimes the system did not work either in college or at home. Such a problem, if it persists can have a negative impact on system usability, as it will be perceived as non-reliable.

“I think there’s a glitch in the system because sometimes it just kicks you out, because your access is denied.” “A lot of times the website is down. The Dar Al-Hekma website is down. A lot of times Blackboard is down and if it’s overloaded it’s down. So yes, it slows things, uploading.” 14

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“Sometimes the system itself does not help, it’s either I post and it does not show for the students due to technical faults... It does not happen frequently, but sometimes it does happen.” I7

“I use quizzes at the start, but we sometimes we have some technical problems in the lab, so I don’t want to put myself in this position, so I stopped using it for in terms of quizzes in class quizzes. “ I5

“This is the challenge and sometimes require me to extend deadlines after I check that its true that they cannot access it for whatever technical reason, so sometimes this disrupts my plans. “ I20

“Sometimes there are hiccups in the system. For example, a year ago ‘safe assign’ was opened, and all of a sudden, I had an assignment and students could not submit their proposals through it... There was a problem with ‘safe assign’ and I had to go back to IT and... there was a delay for a week and I had to get all the proposals and then submit them one by one by myself to check them.” I8

“At critical times (laughing) we need to access it... It happened at the end of the last semester, it was very critical for us to enter the grade so in the busy period we had a difficult time accessing the blackboard, so that was important. I would say four, five times during the year. “ I9

As shown from the previous quotes, academics faced different kinds of problems related to the system not functioning as it was supposed to or some specific features not working. These problems, depending on their severity, might act as a barrier to system usage. In the case of I5, the problem with quizzes led her to decide not to

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utilize the quizzes feature to avoid the consequences, which was a barrier in system utilization. On the other hand, quizzes were not a mandatory feature, which might mitigate the impact of such an issue. On the other hand, a feature like Safe Assign, the built-in plagiarism detection system, when it had a problem it affected submission time for the academic (I8) and forced her to shift the deadline. Such problems might have bigger impacts and are worth investigating as their persistence might affect the system's usage and reliability. In this sense, it is worth mentioning that a number of academics reported that although they faced technical problems in some instances, nevertheless they didn't perceive this as a barrier and they could rely on the system. I3, when she was asked if she faced technical problems replied that "*not too much, not too much. I mean there was, but I mean minimal, it's not too much. A memo sometimes, for example, cannot be opened, or the system is down*". This might suggest that the system was still perceived by academics as a reliable system despite the instances of technical problems.

4.2.1.6.6.2 VLE not integrated with other systems

The VLE system at Omega College was introduced to academics as a standalone system that aids in teaching and learning processes. There is a main Student Information System (SIS) where academics get the students lists and are required to post final grades, but it is not integrated with the VLE. According to academics, this could be a barrier, making academics feel that were required to do double the work in terms of grading. It is true, however, that the academics were only required to post the final grade on the SIS, while they were required to post all grade breakdowns throughout the semester on the VLE "*The final grade is in the portal in the SIS but how did they achieve this C or B or whatever they can see it on the blackboard?*" I30. Nevertheless, a number of academics perceived the act of entering final grades on both systems to be time-wasting and thought systems should be integrated. In addition, a number of academics suggested integrating textbooks with VLE but the integration did not take place, which might have limited the use of the system: "*There is also the integration with McGraw Hill, or integration with Pearson; ok, we talked about it we had people coming from McGrohill but the integration did not take place*"; "*We were so excited about it and then, maybe, its financial, I am not sure, maybe it's financial in the end*", I8.

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"We have this problem when we come to the evaluation of the class at the end of the semester: You cannot put the final grade in until the submission is done and then there is the registration. I wish I could see all these parts in one programme, where the registration and the course, well everything somehow is organized in one programme which can do everything and especially toward the end of the semester." I14

"I make sure that the class list is aligned with the system, the student system. The fact that I have the SIS, which is the Student Information System, and the Blackboard, sometimes can be a little bit too much to handle. I wish that we would rely on one and not the other you know." I17

"There's some streamlining where the [? SIS] is disconnected from the Blackboard. Things are not updated. You have to go...physically go in and do it." I4;

The system with its existing status as a standalone system was being used and utilized as was mandatory for all academics. However, the fact that it was not integrated with other existing systems at the college, like the SIS or with other systems, like textbooks vendors, might have restricted its usage.

4.2.1.6.6.3 Internet Connection Problem

The VLE system can be used inside the college through the local area network. Outside the college, the system is available through the World Wide Web. As a result, the absence of internet connection or even disturbance in the service, like slowness, will affect its usage outside college and jeopardize the permanent availability of learning materials. Moreover, students and academics will also lose flexibility in the use of VLE for different learning purposes, like downloading materials and submitting assessments during the day inside or outside College. Referring back to benefits, materials availability through VLE is one that drove

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changes in teaching and learning, and its disturbance might have limited these changes.

“With grades posting and I do it from home... and sometimes students argue that they couldn’t upload because it was slow, so that’s why, when I set the timing for assignment submission, I do bear this in mind.” I7

In this case, a poor internet connection forced the academic to change her strategy and allow more time for her students to submit, trying to let her students use the system inside the College to avoid excuses like “my internet is not working”. However, this strategy contradicts what the system promised to offer, which is flexibility and permanent availability.

I14, when asked about the aspects in the system that restricted her use, answered, “My lack of knowledge; the capacity of the Internet in the country”, which suggests that the internet connection might act as a barrier in full system utilization for different stakeholders. For academics it might, as mentioned, restrict changes resulting from the permanent availability of teaching materials. For students, it might affect their perception of the system as being a reliable means of communication and useful for materials sharing, and as a result they might not use it as anticipated, an outcome which will lead to conflict. For principals, internet connection, especially inside the college might seriously affect academics’ perceptions of the system as being reliable, and could lead to conflict and dissatisfaction among them, thus jeopardizing the system’s sustainability.

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4.2.1.7 Perceived Challenges in VLE Usage

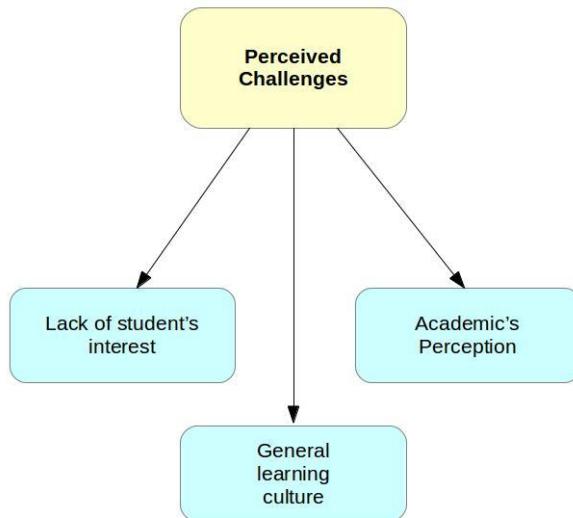


Figure 31 Perceived Challenges in VLE Usage

In the previous section, perceived systems barriers were discussed. Barriers may restrict usage, while challenges need strategies to be overcome either by academics themselves or through college's administration through services departments. This section will discuss perceived challenges as perceived by academics.

4.2.1.7.1 General Learning Culture

The VLE system, with its different features should aid in creating a more independent learning environment with students in charge of their own learning. Thus, for students to prosper in such an environment is a challenge for academics, as a result of the general learning culture which assumes that academics are responsible for the whole learning process. According to I4, "*The Saudi system makes them learn... You know, they have to be monitored twenty-four-seven... So when we get Freshmen into the University, it's very difficult that they're on their*

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own and they need guidance”, so enforcing a system on some students that relies on independent learning is a challenge for academics and they need to adopt certain strategies to encourage students to use the system. I1 had a similar opinion and thought that the challenge of dependent students expecting their tutors to be in charge related more to freshmen and CPP students, as they had just left the general schooling system which is generally teacher-centred: “*It's very difficult in the CPP by the way, because the students come from high school where the whole approach is 100% teacher centred, ok, so when they change into this environment of student-centred learning and self-learning it's very difficult for them and a problem for us sometimes, because they feel it's our responsibility, we are not doing our duty, so they complain*”. Dealing with these types of students is a challenge and requires extra efforts from academics. More about changing teaching styles to accommodate such students will be discussed later on in the chapter (see 4.2.2.1 Change in Teaching Styles).

4.2.1.7.2 Lack of Student's Interest

As discussed in the previous section, the general learning culture, with students expecting to be escorted in all of their learning activities, is a challenge for academics. In addition to this, it is a fact that academics sometimes face the challenge of students not wanting to use the system or not being interested in its feature.

I21 expressed that some students did not consider VLE highly and some resisting it: “*Some students resist it; some go ahead and use it and are comfortable with it but then there are some who don't even consider it an option for a communication*”. I9 also said that, despite her perception of VLE as an enabler for better teaching, some students still resisted it “*it is an enabler for better teaching but at the moment girls don't really accept its usage that much*”. This resistance from students is a challenge, having students who are not interested or are resisting a particular system entails academics making extra efforts to encourage them ,which might add to their obligations. and in that case and due to the fact that students are required to use the system to get all course information, academics are facing the challenge by formulating different strategies to encourage them. A21 was allocating a small percentage of participation grades to system usage: “*A lot of students resisted it, I*

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have some students who never even use it; though we give a small percentage of grades as an incentive we still have students who just... say 'No we don't want to use it'.". Other academics said academics influence students' involvement with VLE, and that, by restricting grade display and other course information to VLE only makes students more dependent on the system: "*When I check I check the last time that they checked in or the last time that they were available, it's like a day 2 days a day 2 days, so every day, or every 2 days the students are actually checking their blackboard, because of the grades they know they have to check over, so it's us who can control the involvement of the students*", I8. It is worth mentioning that academics' perceptions influence students' perceptions, either positively or negatively. I10, who used her own website instead of VLE, stated: "*My students will find it challenging because until this time and day, students are encouraged to go to workshops every semester to learn about Blackboard and how to use Blackboard and we're also asked at the beginning of the semester to give the students an orientation over how to navigate through Blackboard and a lot of students find it very challenging to use it, and in my classes I've actually – at the end of the semester last year, last semester before the summer – I gave my students a... little quiz questionnaire where I asked them whether they preferred Blackboard or my alternative. Most preferred my alternative because it was straightforward and delivered what I needed to deliver to my class instantly*".

Although I10 claimed that students found VLE challenging due to the fact that they needed to learn how to use it, in addition to the fact that they need login details, while her own developed website did not need login details, previous examples show that academics' perceptions influenced students' perceptions, in addition to the fact that students by nature opt for the easier solutions if they were given the chance, even if they are not the most efficient solutions.

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By restricting grades and information retrieval to VLE only, and by assigning grades, academics might overcome the challenge of students' lack of interest in the system by creating a genuine need for it, instead of enforcement by academics, which might lead to a better experience for students reflected in better experiences for academics. Overcoming challenges is important for changes in teaching practices to occur, as will be explained in the 'Changes in Teaching Practices due to VLE' section.

4.2.1.7.3 Academic's Perceptions

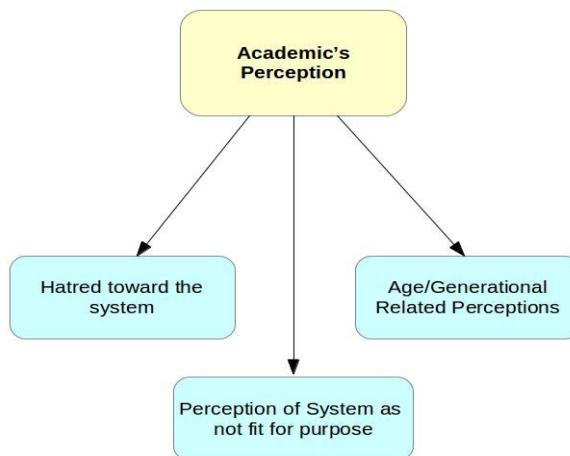


Figure 32 Academic's Perceptions

Previously in this chapter, system benefits from academics' perceptions were discussed in detail. It is true, however that positive perceptions influence and enhance academics' use of technologies. Nevertheless, negative perceptions might restrict their use and confront them with challenges. This section will discuss how academics' personal perceptions affect their use, and how age and generational issues can influence use.

4.2.1.7.3.1 *Hatred toward the System*

During interviews with academics, a few expressed that they hated the system and felt forced to use it. This hatred created a challenge and affected their use.

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A11 expressed that the VLE deployed at Omega College was the worst she had ever used as she has used it in 2 other institutions: “*Where Blackboard particularly is concerned, I have to say the college Blackboard system is awful. It is the worst I've ever used*”. This negative perception affected her use; she used it because it was mandatory and, from her perception emails, wanted to replace the VLE: “*I find this Blackboard so annoying to work with. I'm too frustrated and I just email.*”, and as she has used the same brand from the system in other institutions, she perceived her problems with the system to be linked to the version deployed at Omega College: “*Honestly, the Blackboards I've used – and it was Blackboard, it wasn't something else – had much easier interface where there was none of this redundancy down the left-hand panel and it was very clear how to accomplish a task. This Blackboard, I don't know why it's so different from all the other Blackboards I've ever used and I find it so laborious to figure out how to do what I want to do that frankly, I just give up and go to email because I don't have that much time*”.

On the other hand, I18 did not like the system because she perceived it to be not fit for her personality and that she could deliver her teaching without the need for its features: “*I just don't believe that Blackboard is designed to cater for what I'm teaching or it doesn't cater for what would help enhance the learning experience of my students. You know, putting up announcements, there are a thousand other ways that I could do it. I have them in a group on WhatsApp. I have a class rep. I don't need Blackboard and I don't like to have that pressure to be on Blackboard*”. As was discussed in the benefits section, communication enhancement is appreciated by academics; for I18, this benefit was not fully realized through VLE, and, as a result, she use it because it was mandatory and she preferred the choice not to use it. It is true, however, that she used Announcements, nevertheless this feature is replaceable and is not a justification for her having to use the entire system: “*The only tool that I need on Blackboard, honestly, is the announcement tool. I don't need the entire Blackboard to help me tell my students, oh, I'm running late or, you know, submit your work on this day. I think visually, it doesn't entice me. It seems like too much work and I just find it almost useless to me*”.

Such challenges are not straightforward to overcome and it is challenging for college principals and IT managers to provide solutions, as the perception is tied to

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the academic personally. I18, when she was asked if she required more training to enhance her experience replied, “*No thank you, we don't want more training on Blackboard. You know, even the emails about Blackboard training sessions... raise a lot of our blood pressures, like...another one! No thank you*”.

I10, expressed that she did not like the system either, and thought that, beside the interface, she have created alternative websites for each course that she taught and they perceived her alternative solution to be the best for her teaching. More discussions about these alternatives will follow later in the chapter (see 4.2.2.4, Active Involvement with other ICTs), and for her the main reason behind her negative feelings for the system was its interface which was discussed in the barriers section (see 4.2.1.6 Perceived Barriers).

Although system interface could be a barrier that restricts usage, in I10's case, it led to her negative perception of the system resulted on her creating alternative solutions. She said she would use the system as it was a requirement from the next semester “*I don't think it would restrict my teaching but maybe it would restrict or at least create some kind of a challenge when I need to deliver something to my students*“. Consequently, she perceived VLE deployed at the College to be able to deliver benefits and that she would try it and use it as required: “*I think Blackboard has tremendous potential in terms of capabilities and I think they're updating*”.

Academics perceived the system negatively for different reasons. Some believed that the version of VLE deployed at Omega College had specific problems in term of appearance and capabilities, while others perceived it as not fit for their personalities and didn't appreciate the pressure imposed by upper management and wished that they had the choice not to use it, while others, due to their negative perceptions, decided to have other solutions and created alternative websites. Such challenges are by themselves challenges for service providers unlike, for example, lack of student interest (see 4.2.1.7.2 Lack of Students Interest), which can be overcome by measured steps, like assigning grades for use. In fact, trying to overcome challenges tied to personal perception might be a challenge, since it is for the academic herself to decide to overcome it and the college needs to ensure that they provide all required support (see 4.2.1.2 Institutional Support). This poses challenges to the anticipated changes in teaching and learning processes, which are

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the core reasons for deploying VLE at Omega College.

4.2.1.7.3.2 *Perception of System as not fit for Purposes*

As can be seen from the previous sub-section, academics' perceptions of the system played a vital role in use. A number of interviewed academics perceived the system as not being fit for purpose.

I4 expressed that the system was not fit for math courses: "*I taught Maths the first year and a half I was here. It's not actually very Maths-friendly because how am I going to write the formulas? How am I going to write the questions? So it was easier to use an external [?mindmapper].*" while I4's perception toward the system as not being fit for math courses was valid, others' perceptions resulted from hatred toward the system, as has been discussed in the previous section.

I11 expressed that the system frustrated her and restricted her from using it to perform basic tasks: "*Honestly, I find this Blackboard so annoying to work with. I'm too frustrated and I just email. It's... Honestly, the Blackboards I've used – and it was Blackboard, it wasn't something else – had much easier interfaces, where there was none of this redundancy down the left-hand panel and it was very clear how to accomplish a task. This Blackboard, I don't know why it's so different from all the other Blackboards I've ever used and I find it so laborious to figure out how to do what I want to do that frankly, I just give up and go to email because I don't have that much time.*"

The VLE is a system that is supposed to aid in teaching and learning purposes, and the perception of the system as not being fit for anticipated purposes might be a challenge. Academics who had negative feelings toward the system tended to perceive it as not being fit for its purpose. In addition, as discussed in the sub-section 4.2.1.6.5 'specific specialist requirements', a number of academics perceive the system as not being fit for purpose, as it lacked elements like the math component, for example. The absence of Math element lead to the perception, thus a number of academics perceived the system or some of its features to not be fit for their courses and they refrained from using it as much as possible. Although the use of the system was mandatory, nevertheless such perceptions might have affected changes to teaching practices which resulted from VLE usage as is explained in

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‘Changes in Teaching Practices due to VLE’ below. In the sub-section 4.2.1.7.2, Lack of Student Interest, it was explained that academic’s use influenced students.

4.2.1.7.3.3 *Age/ Generational Related Perceptions*

The interviewed academics belonged to different age groups and generations. Through interviews age and generational issues were shown to play a part in shaping use and sometimes they might be challenged. It was reported by academics that this issue might affect use and create a challenge to service providers. I5, who used to provide support for academics in the GENED department reported that “*it depends on the faculty; most... who are usually young *laugh* I am not racist in terms of age or mmm because they studied Electronics in their academic years, so they know how to use the systems, and sometimes if they studied in let's say universities that didn't support eLearning they had to get training, so it a crucial fact, and it's hard to let new faculty or faculty who don't have the background to learn it on their own, they have to be introduced at least to the basic features*“.

Moreover, I8, who used to be acting director for the school reported that “*I think more awareness, for some style and types of faculty... the older the faculty are, ok, the more resistant they are to using blackboard, so they have to be maybe educated about the system more*”. Age and generational issues not only affected system use, it also affected how academics dealt with students: “*Being myself 40+ and teaching kids who are 18+ there is a huge gap generation, if we talk technology wise, so this puts pressure on me that I have to keep up and be at the same level as they are, and this putting pressure on; if you want to talk about pressure we can talk about pressure from different aspects, in terms of investment for universities in the sense of having the right infrastructure*”, I7. This shows that the age difference and generation gap between academics and students might create a challenge and pressures academics. Responding to such pressure is a challenge that might affect teaching and learning processes that depend on adopting new technologies or, in a broader sense, adapting new teaching and learning styles that entail adopting and using new technologies. More new teaching and learning styles will be discussed in the next section.

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Age and generational perceptions can create a challenge which would need collective efforts like providing more training on both a departmental and institutional basis to help users overcome the challenge. It was reported that the college was willing to provide extra help to academics as long as it was not an attitude: “*the college... can offer more training if it is not an attitude, if it just a lack of knowhow, the college is always I mean provide facilities and you know resources for training the faculty,*” I24, at the same time, upper management are not accepting any excuses in not using technology in teaching, therefore, academics need to adapt “*you have to move with technology, if you don't, you have to leave the teaching profession *laugh*,*” I25.

Older academics, according to College regulations, needed to adapt or they would jeopardize their careers: “*if it was a behaviour or attitude, somebody who just doesn't like to deal with technology, I think in no time they will be out of nobody will take their courses for example, and the college will not be obliged to keep this kind of faculty*”, I24.

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4.2.2 Perceptions of Change in Teaching Practices due to VLE

The factors of change discussed in the previous section have yielded, according to the interview scripts, the perceptions of change presented in the following concept map:

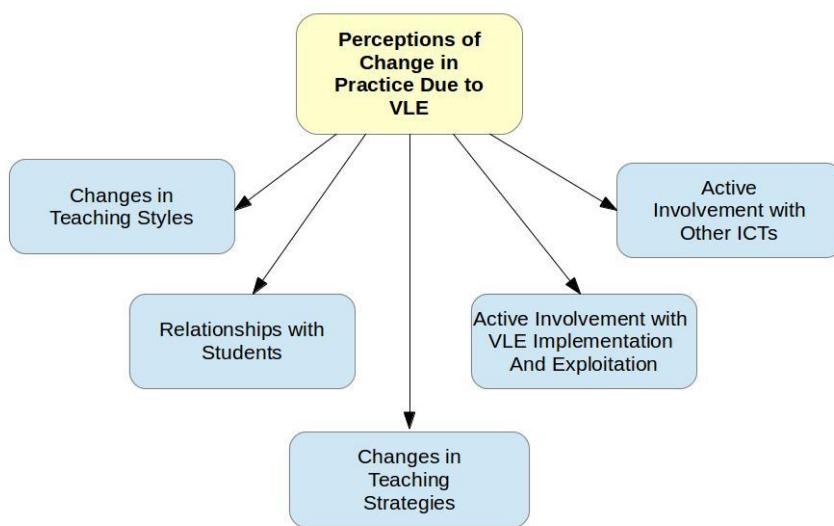


Figure 33 Perceptions of Change in Teaching Practices due to VLE

The perceptions of change in teaching practices is the core part of this research as it will aid in answering the research question and in creating theory after the findings are finished. As has been mentioned in the previous section, perceptions of change in teaching practices are directly linked to factors of change in teaching practices, so themes and codes were identified, based on academics' answers to questions regarding factors. I8 stated that, “*We actually had a workshop about blended learning and we came across from blended learning to technology and the virtual*

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learning environment... I mean how to use technology wisely to communicate with the students to make it more student-centred, the way we teach, ". This indicates that the movement toward student-centred learning is facilitated by the VLE, and more specifically through the exploitation of features that enabled communication, and, as has been discussed, communication enhancement is a benefit realized by academics from using the system. I2 expressed how VLE participated in teaching processes: "It is part of the teaching process, of course, it's a big part; I mean it saves headaches with students you know before it was all paperwork, too much paper work". According to this participant, the benefit of paper-saving perceived by academics influenced the change in teaching and made VLE a vital part of it. Perceptions of change in teaching practices due to VLE at Omega College as perceived by academics were represented by changes in the following aspects :

- Teaching Styles;
- Teaching Strategies;
- Active Involvement with VLE Implementation and Exploitation;
- Active Involvement with other ICTs;
- Relationships with Students.

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4.2.2.1 *Change in Teaching Styles*

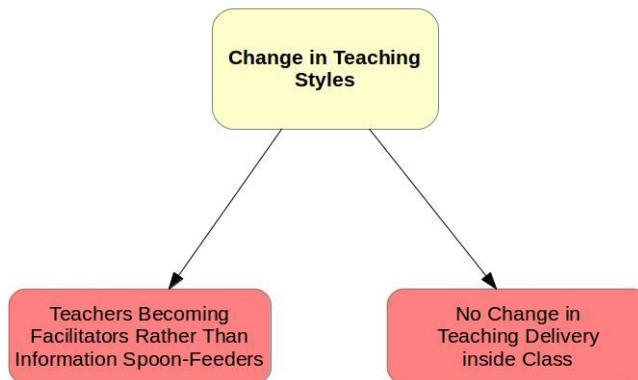


Figure 34 Change in Teaching Styles

During interviews, the researcher asked interviewees specific questions about how the deployment of VLE had affected their teaching styles. Such questions were crucial as the study aims to capture and analyse changes in teaching practices resulting from VLE deployment, and from academics' answers. The following effects on teaching styles have emerged:

4.2.2.1.1 No Change in Teaching Delivery inside Classrooms

As discussed in the benefits Section 4.2.1.1, Perceived Benefits, academics appreciated several features of the VLE which they claimed had enhanced their teaching experience. Features like announcements and discussion boards were appreciated for enhancing communication, materials and assignment uploads enabled paper-saving, and discussion boards enriched the classroom experience by catering for large classes and for shy students. It is true that according to academics the VLE helped enrich classroom experience in many aspects. However, the actual teaching delivery inside the classroom had not changed. Despite VLE usage, still academics preserve the normal traditional lecturing inside classrooms, with changes occurring in other aspects which will be discussed as the chapter develops. When

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academics were asked about the role of VLE inside classrooms in term of actual teaching, they answered:

"I think it made my life easier in so many ways but it didn't... It wasn't a major thing in my teaching. Maybe I am very traditional and conventional." I4

"In the class itself there is not that much change. I can see Blackboard outside, extra-classes activity. For me, Blackboard has nothing to do with the class." I6

"No, inside the classroom, you know not very much, because I use blackboard when I am outside the classroom." I8

"Not much, except for saving time for unnecessary things being discussed inside the classroom, like grades, explanations of a project; for example, I don't need to explain the whole project I only tell them there is a project and due date, go check it in the blackboard." A21

"No, at home, because during class, they are working on their drafting table. They are drawing, they are producing designs and then at home, actually they start, let's say, sharing information or discussing a specific topic and then we'll come up to the class." A15

According to the academics, VLE did not affect the way they delivered their lectures inside class. However, it affected and enhanced the classroom environment by providing a means for shy students to participate and by catering for large classes, as discussed in the benefits section. Nevertheless, the actual effect is not related to teaching delivery, it is linked to other means, like discussion boards, grade posting, materials upload and other communication tools in VLE. It saved

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time inside classrooms and in creating a more effective class environment for a diverse student cohort, consequently, traditional lecturing remained the same. When academics expressing that the VLE had enhanced their teaching experience inside the classroom, referring to uploading materials, for instance, saving time in the classroom and how less active students were given a means to express their ideas through VLE.

According to the academics, their actual lecture delivery inside the classroom had not changed after VLE deployment. However, they reported changes and enhancement in the classroom experience, as discussed in the benefits section, thus the actual teaching remained the same. Academics appreciated that the VLE had saved time inside classrooms, and by creating a better environment for discussion due to the ability to upload discussion materials before class time, thus, they reported no change in actual teaching. For them, VLE is a tool to be used outside rather than inside the classroom. It is worth concluding that changes actually occurred inside class in term of allowing more room for discussion and by giving more space for students to participate in. It is the lecture itself that is based on delivering academic materials either in the form of a PowerPoint presentation or verbal lecture that has remained unchanged. This does not outweigh benefits and changes academics realised from the system, and appreciated its role in enhancing their teaching experience.

4.2.2.1.2 Teachers Becoming Facilitators Rather than Information Spoon-Feeders

In the challenges section, it has been reported by academics that students at Omega University, especially CPP and freshman students, usually expect their academic to be the sole provider of information and they consider her their only source of learning. As a result, they become dependent on her especially that the schooling system in Saudi Arabia is basically teacher-centred and students are used to that style of teaching. After system deployment, and due to the University awareness of new teaching styles, the University started encouraging academics to make students more dependent and rely on themselves on their learning. Academics perceive VLE as a helping tool in restricting information spoon-feeding and promote the role of academic as a learning facilitator. I20 expressed that she use technology to lead and

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direct the student not to feed them information “*and students centred learning ahh يعني (which means) involves a lot of independence in learning from the side of the student, where the teacher will not be spoon feeder in the class, it has to be a facilitator so I am trying to use this technology as a facilitator*”. It have also expressed that the use of technology in general and VLE in particular have aided in shifting some of learning responsibilities to the students, unlike how it used to be “*now we are more into self-learning, more into giving students more responsibilities in the classroom and outside the classroom, so that's in term of preparation, when you prepare of course you have to lay out all the information the students need, but the way you deliver it is different, its different, instead of me giving them the information, I ask them questions, or I ask them to go and search for something, even sometimes in the classroom, they use their iphones their ipads to search for something and give me answers*”. The role of VLE in this shift can be realized in the use of materials upload and other features that serve materials sharing like videos. In addition, and referring back to the benefits section and how VLE is being used as an accountability tool, the academic by posting materials, grades, announcements and any other content on the VLE is shifting the responsibility of acquiring learning materials and course information to the student, this shift is a major drive in shifting academic’s role as described.

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4.2.2.2 *Change in Teaching Strategies*

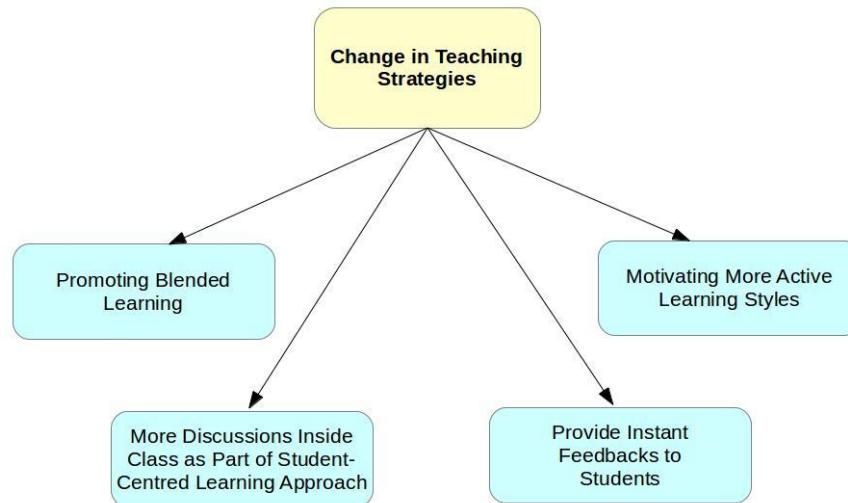


Figure 35 Change in Teaching Strategies

Interviewees were asked specific questions on whether their teaching styles had been affected by VLE deployment; likewise, they were asked about the effect of VLE on teaching strategies and whether VLE participated in preparing and delivering teaching materials. From the interview scripts, the following changes in teaching strategies were extracted:

4.2.2.1.1 Promoting Blended Learning

During interviews, academics mentioned “blended learning” on different occasions. They were referring to the use of a mixture of online learning and academics’ presence in classroom. As part of the institutional support (see 4.2.1.2 Institutional Support) toward the use of technology in teaching in general and VLE in particular, academics were given workshops which introduced them to new teaching styles and strategies, and through these workshops most academics were aware of new learning techniques, such as Blended Learning and Student Centred learning. Although academics reported no change in teaching styles inside classroom due to

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VLE, they reported changes in class preparation, or in other words, strategies for preparing lectures to be delivered to students in class:

“Lecture, video, website. Sometimes we look at things on the website, reading. Student-based, it’s blended learning, blended teaching now.” I3

“I like using technology, of course. I can’t live without using technology actually, of course it’s part of our lives nowadays, especially if you’re teaching, or in the academic field, you have to incorporate or start using these technologies to facilitate blended learning.” I2

“We are moving towards more active learning, blended learning, distance learning or these kinds of virtual environment learning. We are moving towards this via to technology. Without technology, I can’t believe we can do this.” I7

“I still believe that the instructor... is a facilitator not a spoon-feeder, a facilitator students need to facilitate and then the instructor role is to provide them with easy tools so that they can learn.” I20

Previous quotes show that academics mentioned the term “blended learning” when they referred to how they incorporated technology in their teaching. VLE, as a means of material sharing, has participated in this change toward blended learning. Moreover, blended learning has an impact on academics role as information spoon-feeder in learning facilitator, as claimed by academics. This strategic shift in teaching was supported by university principals. I24 stated that, *“I think for the college its going to be blended for a number of reasons; also we have to think about the bigger environment here in Saudi Arabia. Until now any degree that is earned on an online basis or distant learning basis is not acceptable, so you have to combine both. For me personally I do believe it should be a combination”*, and according to her, blended learning is encouraged. Nevertheless, any tool, including

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VLE, should not replace academics presence. The college is a traditional HEI where students need to physically attend lectures, degrees earned by online means are not recognized in Saudi Arabia yet, therefore academics should be present to give lectures and blend technology with their teaching. The importance of academics' presence is supported by academics as mentioned in I20 quote . The use of technology blended with actual teaching is what both academics and college principals are anticipating and is considered a change in teaching strategies resulting from the use of technology in general and VLE in particular.

4.2.2.1.2 Motivating more Active Learning Styles

As part of the change in teaching strategies due to the use of ICT in teaching (VLE in particular), academics are adopting more active learning styles. Academics, through the use of different features from the VLE promote students to be more active learners. I7 encourage her students to be more active in the learning process by sending them links to videos or podcast, depending on the topic she was delivering in class, asking them to listen/watch it and then reflect on it in class: "*I can post the cases or the principles... I don't believe that student's will get it unless they see people talking about cases or someone talking about their experience, so instead of coming in class and showing a video or I could send them a podcast, they watch it, they reflect on it, and then we come to the classroom, and discuss and we conclude the concept*". I20 said VLE motivated students and made them more interested in learning: "*Yes, it not only facilitating, it's motivating for them, they like it. You can ask them to do research over a specific topic or getting specific news... and through the blackboard I can see the response rate is higher than when I used to ask them to read the newspaper and give me their feedback the next day.*" The previous quote shows that academics can exploit this interest in system use to promote more active learning styles, which enhance teaching and learning processes.

By motivating students to be more active learners, academics' teaching strategies in preparing and delivering lessons in classrooms might be reshaped to adopt blended learning, and instead, for example, of playing a video in class and wait for students to reflect, students are more active and come to class prepared. This style

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opens the room for more discussion inside class and as a result, enhances the classroom experience.

4.2.2.1.3 More Discussions inside Classrooms as Part of Students-Centred Learning Approach

As part of Institutional Support provided to academics, they were given workshops in contemporary teaching styles and strategies, where academics were introduced to styles like blended-learning, active learning and student-centred learning. During interviews, a number of academics reported that they adopted these new teaching styles and strategies and no longer taught through traditional methods. One of the new strategies they adopted inside class was more concentration on discussion rather than dense lecturing. Academics stressed the importance of class discussions in the learning process and how students responded,

“It’s very important because it re-emphasises what we learn in class and there’s always new topics, especially banking and finance, and... with these financial scandals going on, different things popped up.” I4

“Discussions, with lectures, of course, but I enjoy discussions; I try to create questions and answers and sometimes I mean we create a topic and... we try to create something they can be discussed and asked about.” I2

The role of VLE in enabling discussion varies between academics. A number perceived it as a in class discussion enabler by being able to post discussion materials online in advance, this way of ensuring students came to class prepared, which might result in having more active discussions: *“I can post the cases or the principles, which is something... I don’t believe that student’s will get it unless they see people talking about cases... so instead of coming to class, and showing a video I could send them a podcast, they watch it, they reflect on it, and then we come to the classroom, and discuss the concept,” I8.* Other academics perceived it as an in-class discussion enabler by saving time inside class and leaving more room for active discussions about lecture topics: *“They can look to the lecture before they go*

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to class and in class we will be able to have a lot more discussion rather than discovering information and I think this is interesting and important as well because I can give them the lecture, I would have time at the beginning of every class,” I14. Time saving at the beginning of the class is one of the benefits discussed in this chapter (see 4.2.1.1.3 Time Saving).

It can be said that the ability to post materials and make them available for students does not only save time in class and enable permanent materials availability for students, it can also allow more discussions inside class, which helps a more student-centred learning approach in teaching. Academics mentioned the term student-centred learning (which is opposed to traditional teaching or teacher-centred learning approach) on different occasions during interviews.

According to I20, this approach is directly linked to independent learning: “*Student-centred learning involves a lot of independence in learning from the side of the student, where the teacher will not be spoon-feeder in the class, but has to be a facilitator, so I am trying to use this technology as a facilitator*”.

I8 linked student-centred learning to blended learning: “*We came from blended learning to technology and virtual learning environments... I mean how to use technology wisely to communicate with students to make the way we teach more student-centred*”. For her, technology paved the way to more student involvement and aided the shift into student-centred learning.

This approach was highly supported and encouraged by College principals and perceived that adapting to the approach was necessary to their career: “*You have to give a lot of support to people who are traditional teachers but there is no room for traditional teachers. If you are gonna be student-centred you can't be traditional, teaching is not a passive activity, its active; blackboard, even though it's virtual, it's part of that activity, so the days of traditional teaching are gone*”, I25. Student-centred learning as an approach was supported by college principals and they perceived VLE to be a huge support, aiding the shift to student-centred learning; “*Our focus is student-centred learning, blackboard is a huge supporter in that effort*”, CP2, *Former Vice Dean of Academic Affairs*. Nevertheless, how the VLE enables student-centred learning through its different features is not thoroughly clear from interviews. While it might aid in enabling discussions in classrooms, it is

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worth mentioning that student-centred learning as an approach might be adopted without the use of VLE. I8 stated that, “*Actually, student-centred learning, even if I am not using technology I can be student centred... You are just standing there not using any of the technologies that are there, ok, you can be definitely students-centred and you can take out of the students , assess what they have, and then try to reach them in a way that means they contribute, they will be active in class, and they discuss with you*”.

It is worth concluding that VLE is a tool that might aid in promoting more active learning styles and could aid in adopting student-centred learning by providing means to share materials in advance in addition to providing students with a tool that makes them independent learners.

4.2.2.1.4 Provide Instant Feedback

One of the main aspects of teaching and learning processes is feedback. At Omega College and with adoption of more active learning processes and with the concentration on student-centred learning with academics acting as learning facilitator, students had more demands from academics in term of feedback. When students participate more and are actively learning through the use of different technological means, either VLE or other ICT solutions (see 4.2.2.4 Active Involvements with other ICTs), they might have higher expectations of their academics and expect feedback more often as they participated more often. As a result, academics need to adopt new strategies in providing feedback to students.

Previously, students received feedback on their coursework, quizzes and tests directly, through either visiting their tutor in her office or by being informed either by email or inside class that grades were either posted on doors or they needed to see her personally to receive it. I6 stated that, before the feature of grade-posting was mandated by college, they used to do this: “*It wasn't mandatory, what we were doing, and for me... I was obliging students to get their feedback. I didn't post the grades for them on Blackboard and they came to check their grades in my office*”. After VLE, the strategy changed and instead of obliging students to come to the college just to receive their feedback, they could have them posted on VLE: “*Once we started posting grades on Blackboard, they don't come to your office, unless*

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they are not really OK with their grade“, I6. It is worth mentioning that feedback differs: grades are a form of feedback, nevertheless, by themselves, they might not be satisfactory for students and they might require grade justifications, comments on assignments or even comments on threads on the discussion boards. Academics were required to post all grades on all tests, quizzes and assignments on the VLE. However, they are not explicitly required to post grades, comments or justifications, which might lead to students visiting academics at her office to get feedback. A number of academics discovered this pattern of student behaviour and decided to adopt the strategy of posting grade comments to try and minimize the number of students coming to their offices for feedback:

“A lot of students want to know why they lost, for example, one point..., but having it on blackboard as I said when I grade assignments I put in actual comments, like where she missed the point.” I5

“I do send them feedback... whenever I have comments, I can correct online, put comments online for them and... in the college we rarely see students coming, unless the grade is not really satisfactory; they rarely came to see what were their errors. With Blackboard, I do post the answer keys for a while after the exams or after the quizzes and for sure, if it’s an online submission I do post their grades also and the comments, so that they know what was wrong and what wasn’t, so they don’t come to my office to see what was wrong.” I6

Academics were obliged to provide instant feedback to students in terms of grades. Moreover, college principals perceived this as an effective way of enhancing teaching. I25 mentioned feedback as one of the aspects of VLE: “*There are so many things that we can do on blackboard: we can give students immediate feedback in terms of their performance and different assessment tasks*”. However, the strategy of providing instant feedback to students at Omega College might yield different results depending on how academics apply it. Providing only grades might

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result in students coming to their tutor's office for more elaboration on their grades, while providing comments for each individual student might aid in limiting the number of students doing this. However, it might be a demanding task, especially since time management remained one of the challenges facing academics in VLE usage and exploitation (see 4.2.1.7 Perceived Challenges of VLE usage) . Nevertheless, providing instant feedback was a change appreciated by academics and students and helped increase transparency, as discussed below (see 4.2.2.5.1, More transparency).

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4.2.2.3 *Active Involvement with VLE Implementation and Exploitation*

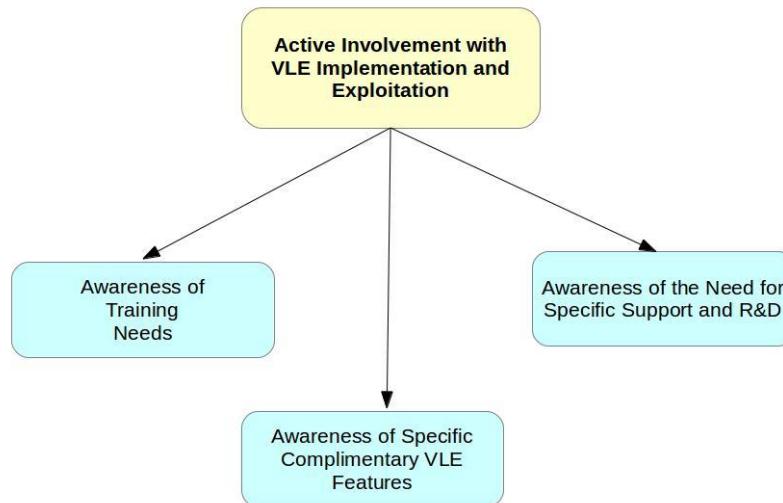


Figure 36 Active Involvement with VLE Implementation and Exploitation

As has been discussed in the chapter (see System's Training and Workshop, 4.2.1.2.1), academic's received, and still were receiving training and workshops on regular basis on VLE at the moment of writing. They also received training on teaching and learning styles and how to incorporate technology in contemporary teaching. Those factors, in addition to the nature of the College as a small institution where academics and college principals gather on regular basis, made academics more actively involved with VLE implementation and usage in addition to involvement with other ICT solutions, which are discussed below. Moreover, when academics explained the challenges they faced in relation to the system, they tended to suggest solutions from their perspective, which also indicates how actively they were involved with the system. In fact, as the system is mandatory, this could act as the main motive for active involvement, which can take different forms, as the next sub-sections shows.

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4.2.2.3.1 Awareness of Training Needs

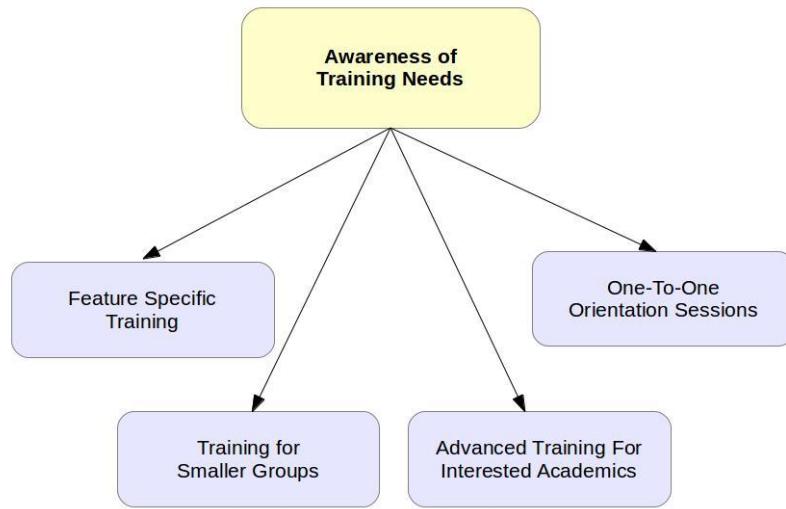


Figure 37 Awareness of Training Needs

During interviews with different stakeholders, it has been realized that regular training sessions and workshops were being held on a regular basis for both academics and students. Nevertheless, these general training sessions were not satisfactory for some academics, and they had different perspectives in how these training sessions and workshops could be more beneficial and cater for all needs. It is worth mentioning that academics' awareness of training needs varied, depending on their use and their general interest and perception of the system. For instance, academics showed awareness of their training needs through suggesting the following:

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4.2.2.3.1.1 *Feature Specific Training*

During interviews, when academics expressed the challenges they faced with certain features, they suggested that they were given training sessions specifically for these features:

“Grade book is good... I haven’t gotten into the nitty-gritty..., like I don’t know how to calculate columns yet. The college has not done a great job in training us at all”; “Totally, they should encourage Faculty to use is and not only that, they should train them.”,I4

“There has to be more effort in educating the faculty about all the features... in details, not generally about blackboard.” I8

“Blackboard, mainly how to do the quizzes and how to do it quickly, you know, it would be great.” I17

The previous quotes demonstrate how academics were aware of their training needs in term of needing more specific training. They showed awareness of the routine sessions held by the IT department, but they anticipated more feature-specific training, which reflects their active involvement with the system. However, during interviews with I26, she mentioned that they conducted feature-specific training for interested academics *“For Faculty, we have more than twelve. We are categorising it by functionality, so we give basic and then we give assessment and then we give grade centre and then we give collaboration and also we asked each major—you know, we sent an e-mail to ask any major if they wanted any additional features to be displayed,, and we’ve done it for them.”*. This could link back to the lack of communication between academics and college principals and IT personnel, which could lead to academics missing valuable training opportunities. According to I26, such training had been running for 2 years, so for academics not to be informed

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about these types of training suggests a serious need to bridge the gap between them and IT personnel.

4.2.2.3.1.2 *Training for Smaller Groups*

During interviews, academics expressed that they were aware of the training held routinely by the IT Department. However, it was mentioned that conducting the training for large numbers of people did not yield fruitful results:

“More training in small groups is needed because giving the same workshop to bigger group really generates of a lot of unnecessary questions.” I9

“Small group training, for example, or at least one orientation on the most common features that are obligatory for Dar Al-Hekmar to use... should be delivered... in the very first days.” I12

“To answer the previous question about what the college can do to address this issue, we can propose that they might deliver these kind of workshops with a smaller number and more personalised.” I6

From the academics' perspective, providing training for smaller groups would enhance the quality of training and eliminate the unnecessary questions resulting from offering the same training for new and returning academics: “*We had in the same class people who had no clue about technology and people who were using technology on a daily basis. So then it is frustrating for both, for the advanced people who are bored and for inexperienced people who feel shy about asking questions*”, I12. Such suggestions reflects academics' involvement with the system and how they can get the most out of training offered.

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4.2.2.3.1.3 One-to-one Orientation at the beginning of Employment

During the course of the researcher's employment at Omega College and specifically when she was employed at the IT department, providing orientation sessions for new employees was a routine. It is true, however, that during the course of her employment as a user the support the system was not then deployed and even after the initial deployment, she left before it was mandatory, therefore, the orientation one-to-one session did not include a brief on VLE. I12 mentioned that academics used to have orientation sessions specifically for VLE: "*The new Faculty used to have an orientation on Blackboard within their first days of being in the college. Like right now, I have three new Faculty members... They haven't received any training and they are required to start using Blackboard as of now*".

Suggesting routine VLE orientation with a mechanism to ensure that it takes place within the first days of an academic's employment reflects how actively users were involved with the system, which might enhance academic's experiences with the system.

4.2.2.3.1.4 Advanced Training for Interested Academics

Interviewed academics varied on the level of their interests on the VLE system in particular and in technology in general. While some academics expressed that they only used mandatory features, others demonstrated more advanced use, which resulted from their personal interest in system features. Academics who were interested said they would appreciate receiving more advanced training that would help them use the system to its optimum capacity:

"If there are any advanced sessions, yeah I would like to."

I21

"There needs to be an orientation session which later in the semester can be followed by targeted training sessions for the people who are interested in one or another particular feature." I12

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“They do orientation but it always seems related to classes and is given to new faculty. They do not really focus on old faculty. So again... there are a lot of things which I do not know about blackboard, so I feel that I am only using part of it and I could do much better.” I14;

Previous quotes demonstrate an awareness of academics' needs for more advanced training by the IT department. This awareness was tied to their active involvement with the system; apart from it being mandatory to use, it became a novel part of academics' routines, and therefore, they were more involved with its details. Depending on their level of interest, they expressed the need for more advanced training.

Academics awareness of different training needs reflects their active involvement with the VLE system. It has been discussed in the previous Section 4.2.1.6.4 that training issues created challenges for academics in some ways. When academics demonstrated awareness of their own system training needs, it reflected active involvement with system details. It is true that the system use was mandatory; however, awareness of one's training can be seen as a means that enable changes in teaching practices to occur. For example, when an academic was aware that she needed more training in how to share materials, this illustrates that such features aid communication between academics and students, allowing more discussions in classrooms and more active learning styles (see 4.2.1.1.1 improved communication through uploading materials and 4.2.2.1.2 motivating more active learning styles).

4.2.2.3.2 Awareness of need for Specific Support and R&D

As has been discussed in sub-section 4.2.2.3.1, academics' awareness of their different training needs demonstrates active involvement with the system. In addition to this, some academics demonstrated other forms of involvement, represented by the suggestion of specific system support and R&D. I7, who happened to be part of the committee responsible for the initiative taken to reinitiate the system and re-introduce it to academics and then make it mandatory, suggested

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the establishment of a special centre for learning technologies: “*I would say Academic Affairs in collaboration with IT or how I don't know that they always need to have someone or a centre who are aware of all the latest technologies that can be used in teaching, and then help the faculty of how they can be trained and use these kinds of technologies, and then you leave it to everyone... and they can... customize it and integrate it into their classroom practice*”. Such centres might be responsible for R&D for any educational technologies and could feedback directly to Institutional Advancement, such suggestions demonstrates considerable amount of active involvement with the VLE system and with educational technologies in general and reflects awareness of the importance of ICT in education.

4.2.2.3.3 Awareness of Specific Complementarity VLE Features

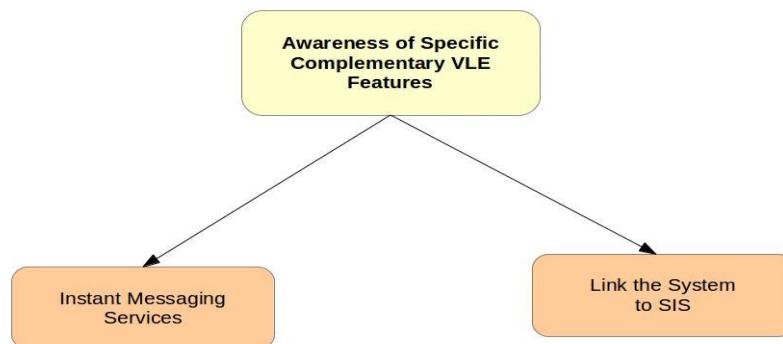


Figure 38: Awareness of Specific Complementarity of VLE Features

During interviews, when academics expressed the challenges and barriers they faced with the system, and some pointed out some complimentary features that could enhance their experience with the system. This demonstrates active involvement with the system and how they anticipate it to be. The following subsections will discuss complimentary features suggested;

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4.2.2.3.3.1 *Link System to SIS*

One of the challenges facing academics with their system use was the need to enter final grades at the SIS system at the end of the semester, which is considered redundancy, as they used VLE throughout the semester for posting all grades (see 4.2.1.6.6.2, VLE not integrated with other systems). It has been suggested that the system was to be integrated with the main SIS to remove redundancy and create better experience for academics: “*You cannot put the final grad until the submission was done and then there is the registration. I wish I could see all these parts in one programme, where the registration and the course; everything somehow is organized in one programme which can do everything and especially toward the end of the semester*”, I14. Such a suggestion reflects prior knowledge and awareness of the ability of systems to be integrated, and demonstrates active involvement with the VLE system, and by allowing such links between systems, academics will have more time to dedicate to teaching, which aids in improving teaching practices.

4.2.2.3.3.2 *Instant Messaging System*

It has been mentioned during interviews that Whatapp is being used among academics as a mean of communication between them and their students. When they were asked about the reasons behind the usage of Whatsapp, it was mentioned that the instant messaging feature was appreciated: “*I realized it really helps because these students in the middle of the night and when they are toward the end and they have to submit when they are really panicking and they need support and when they find me immediately able to help them or they send me a picture and they tell me ‘Miss, what is this option and which option is better and what is your feedback’, It puts them at ease*”. I14.

As has been mentioned and discussed previously in the chapter (see 4.2.1.1.1 Improved Communication), communication enhancement is an appreciated feature of VLE, and providing instant messaging system through it can enhance academics experience. Such a suggestion reflects active involvement with the system and anticipation for it to be more beneficial. By allowing instant communication to take place, communication will be further improved and as a result, will impose more

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responsibilities on students and aid in making them responsible for their own learning, which will lead to more student-centred learning (see 4.2.2.1.3, more discussion in classroom as part of student-centred learning).

4.2.2.4 Active Involvement with other ICTs

The use of ICT in teaching and learning processes is not limited to VLE at Omega College only. It is true that this study is about the perception of change in teaching practices which have resulted from VLE, nevertheless academics mentioned the use of other ICT tools, ranging from use of other tools complementary to VLE to the use of tools resulting from VLE's failure to satisfy specific requirements.

Academics reported the use of several ICT tools to complement VLE. I6 reported the use of Clickers: "*It's a website that creates a kind of virtual classroom where you post for active participation, you know. I was posting a kind of question for the students and then the students answer. I can have statistical analysis for the answers so that I know how many students answered wrong or right and it was counted like, you know, active participation and they obliged us to count them for the participation, grades*". For her, this tool complemented the VLE and aided in engaging the students and helped her in assessment, as she was able to quantify student participation.

I8 reported the use of Lynda.com which provides courses and workshops for different subjects. According to her, they were beneficial for both students and academics in case an academic need to improve her skill in a specific field, like finance, or even specific software, like Microsoft Excel. Lynda.com provided I8 with a reliable means where students can have information and skills: "*For example, in research methodology, I do not give them how to use excel, ok, to calculate things they took it before so I take it as a refreshment and I ask them as a requirement to open this class and this class of course and read it, and then I ask them about it, so definitely instead of me spending a whole class or 2 refreshing their memories about excel and how to use it and how to use the functions, I just ask them to do this*". Lynda.com for I8 complements VLE, from her perspective; VLE is more for communication while Lynda.com provides courses and information. In addition to Lynda.com, I8 reported the use of Clickers like I6, and said they were

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encouraged to use it: “*We really hot about technology and blended learning and student-centred activities, involving the students more in class*”. For her they did not continue using it due to problems faced with internet connection in classrooms. The use of websites related to the subject academics taught was reported by several academics and they expressed that VLE sometimes acted as a means of sharing these websites. This part was discussed previously in the chapter on benefits (see 4.2.1.1 Perceived Benefits). I15 reported the use of Slideshare.com. Sharing slides on VLE differs than Slideshare.com, as the latter provides a wide range of presentations made by other individuals worldwide and complements materials she shared on VLE.

Academics could be engaged with other ICT tools as a result of VLE not meeting their requirements. I14 reported that she used Whatsapp groups within her classes to contact her students. She reported that although they purchased the mobile version of VLE and downloaded it on their mobile gadgets, they could not benefit from the instant messaging feature provided by Whatsapp: “*Last year we had our blackboard on our phones. We had to buy the application but you cannot immediately get that message*”. Another tool used by academics as a result of VLE not meeting course requirements was Dropbox. I18 reported that she used this on her courses to share materials with her students, since they dealt with high resolutions images, and uploading these onto VLE was not possible due to space limitations: “*Most of my students have Dropbox accounts anyway and we're sharing massive... TIF files sometimes. Dropbox is enough for me*”. Likewise, Dropbox was used by I14. According to her, space limitation in VLE was an issue for her on her courses, therefore Dropbox was used: “*We have a problem with very big file; we use Dropbox*”.

Other academics used other tools, as they perceived VLE as not being suitable for their specialists, and therefore, I13, Math used ‘my math lab system’ as the VLE did not provide her with the features she needed, as discussed in Section 4.2.1.7.3.2.

I13 perceived the system as being beneficial and had a positive attitude toward it, the use of Mymathlab being due to its unsuitability for Math courses from her perspective. On the other hand, I10 used alternative websites created by her instead of VLE due to her perception of the system as being dull and not user-friendly.

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Likewise, I11 perceived the system not to be user-friendly and sometimes she used emails to communicate with her students instead of VLE.

Academics use several ICT tools besides VLE in their teaching and communication with their students, like Lynda.com, World Wide Web, Flip classrooms and Clickers, as complementary to VLE. It is a fact that VLE usage was mandatory and therefore academics are obliged to use it, nevertheless they were not obliged to be actively involved with other ICT tools, so this active involvement suggest academics' genuine interest in ICT solutions and reflects the college vision and anticipation "*We are all about eLearning because that's where the world is heading, that's technology. If we don't do that we are not on the same page with students*", I25. Academics involvement with ICT which complements VLE was encouraged and supported by College principals, the use of hand-held devices seen as a healthy means of acquiring information inside classrooms instead of the classic vision that hand-held devices divert students attention from the lesson "*We are preparing our students for a global experience, so eLearning is at the top of the list... so eLearning, learning how to flip the classroom, being supportive of ebooks, so our students can start using their ipads and ipods and iphones and I whatever else, is important*", I25.

The use of tools that require handheld devices could be limited in case not all students had one. Referring back to the context, the College was a private HEI which recruited and attracted the elite in the city of Jeddah. At the same time, it has a comprehensive scholarship program which provides 100% scholarship for students with good grades and less resources. Moreover, King Abdullah program for internal scholarships provides 100% scholarships for eligible students, creating student diversity, which might raise the issue of a digital divide, where not all students own handheld devices. During interviews, academics were asked whether this issue affected their use of ICT tools. Their answers varied. I8 addressed the issue by allowing students to work in groups: "*The problem was that not all the students had smart phones, so we had to do it as groups*". I6 made the students share their smart phones: "*As long as she can just take the phone from her friend and log in with a different user and just do it*". Academics tried to find solutions when using ICT tools that required the ownership of smart phones, and while working in groups and sharing smart phones might be viable in some cases, this

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might not be a long term solutions and it might suggest that the College employs a program that provide handheld devices to all students, as the use of ICT tools becomes the norm. The use of ICT tools beside VLE is a positive trait and the reflects college vision once obstacles mentioned are overcome.

It is worth concluding that the active involvement with other ICTs besides VLE enabled changes such as the use of handheld devices, more active learning styles and more materials sharing. Moreover, these changes aided in overcoming some of the challenges and barriers presented previously in 4.2.1.6.2, specific specialist requirements, and 04.2.1.6.2, implementation deficit. Overcoming usage barriers and challenges creates better teaching and learning environments for both academics and students.

4.2.2.5 *Relationship with Students*

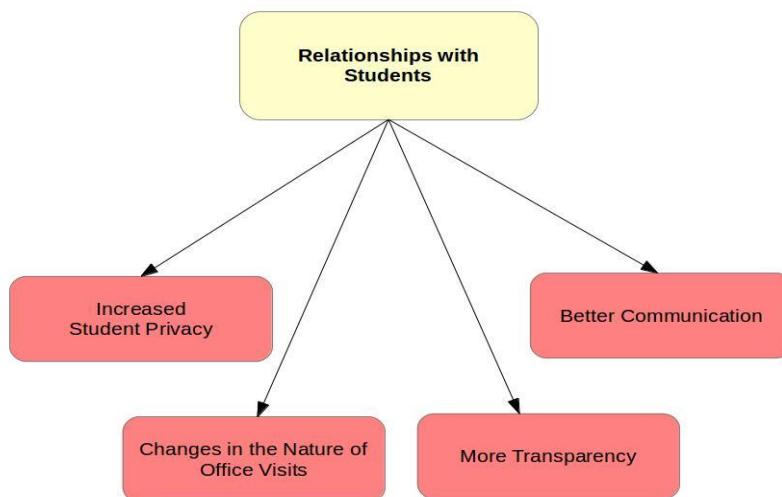


Figure 39: Relationship with Students

During interviews, academics mentioned their relationships with their students using different terms. As discussed previously in the chapter, specifically in the benefits section, academics reported that the VLE have improved their communication with the students (see 4.2.1.1 Improved Communication), which is considered a type of relationship. Relationship between academics and students is an important aspect in determining changes in teaching practices due to VLE. As

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has been discussed in the literature review (see Chapter 2 Learning Process), teaching and learning processes entails interaction between academics and students. In this sense, changes in relationship in general are important to determine how actual changes in teaching practices have taken place. In this sub-theme, different aspects of academics relationships with students which has been affected by the VLE will be discussed.

4.2.2.5.1 More Transparency

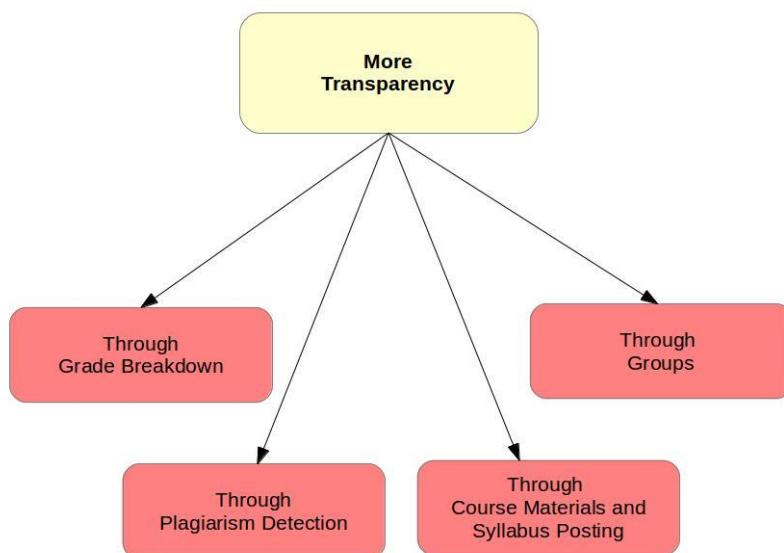


Figure 40 More Transparency

Before system deployment, transparency in term of grades, plagiarism, group work and other aspects was an issue. Students might not be satisfied with their final grade, and so would try to receive justifications from academics, which could lead to conflicts in some cases. When academics assign students to groups in order for them to work as a group there used to be problems with students not working equally, resulting in conflicts. When accountability issues were discussed (see 4.2.1.1.8 holding students more accountable), it showed that VLE was being used to generate evidence in case of conflicts from data, not just used for

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accountability, in case of conflicts; it also helps preventing conflict through improved transparency, achieved through the utilization of the following tools:

4.2.2.5.1.1 *Through Grades Breakdown*

The Gradebook was one of the mandatory features at VLE. Academics were required to post all grades throughout the semester in the VLE for the students to view. They were required to post assignments, quizzes, tests and all assessed work grades and at the end of the semester to post the final grade on the main SIS. Before VLE, academics were required to only post the final grade on the SIS; students received their other grades like assignments and quizzes through means determined by their teachers. Posting grades in the system increased transparency: “*We put the breakdown of the grades out and then... we just post the final grade. I think it's very good in terms of being very transparent... It brings a lot of transparency, otherwise the students would be coming in the office... You're relaxed and they're relaxed*”, I3.

This transparency can be further improved by the utilization of the Comments feature, as academics can post the grade and a comment that justifies it. In that sense, students were well informed about their progress: “*I do post their grades and the comments so that they know what was wrong with them and what wasn't so they don't come to my office to ask this*”, I6. Increased transparency could be linked back to accountability, by posting detailed grades throughout the semester, students are well informed of their progress and this might aid in conflicts or complaints: “*Putting the grades clearly, ok, helped a lot with the complaints... about grades, when they used to say they were not notified and hadn't got their grades. Everything is documented clearly by date and time on Blackboard*”, I8. The grades breakdown feature aids transparency which in return can raise students' satisfaction levels and help in ensuring system sustainability.

By increasing transparency through providing students with grade breakdowns, trust will be increased, which will result in better learning experience for students.

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4.2.2.5.1.2 Through Plagiarism Detection

Plagiarism is a serious academic offence. In recent years systems like ‘turnitin’ have mitigated the negative consequences resulting from plagiarism. In addition, these system ensure academic honesty and integrity in all submitted work, especially for students who have recently graduated from secondary school, where copying texts from books was a normal practice, reflecting good memorization (see 4.2.1.7.1 General Learning Culture). The VLE deployed at Omega College was equipped with a plagiarism detection system, which helped to elevate the standards of students and encourage them to use academic methods in citing others’ work. Moreover, these systems increase transparency as they detect plagiarism with evidence that cannot be concealed, which achieves more transparency between the academic and her students;

“I use blackboard to assess the student’s level of commitment... and trustworthiness, in the sense I can check if she has any plagiarism... Its other tool that we can use.”

I7

“Safe Assign, which is a plagiarism detection tool is a very powerful tool and is very useful; instead of me looking at their papers and not knowing whether it has been plagiarised or not, it gives you everything and you can go to it via the website, so you can detect plagiarism.” I8;

A plagiarism detection system increases transparency between academics and their students. As has been discussed previously in 4.2.1.1.8, ‘holding students more accountable’, the ability to hold students accountable for their actions is appreciated by academics. It can be concluded that a plagiarism detection system, by increasing transparency contributes to holding students accountable in case plagiarism is detected; likewise, procedures followed were clear, with evidence, which serves transparency, and thus elevating the ethical standards of students, which will serve the college vision in preparing students for the global experience (see 4.2.1.4.1.1, ‘Preparing Students for Global Experience’). Moreover, more active learning styles are allowed when standards of students are elevated (see 4.2.2.1.2, ‘motivating more active learning styles’).

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4.2.2.5.1.3 *Through Course Materials and Syllabus Posting*

As mentioned in Section 4.2.1.1.4, Increased Availability, the ability to upload materials and syllabus on the system benefits academics by providing the permanent availability of materials, and by saving papers and time. Likewise, posting materials and syllabus online increased transparency between the academic and her student, by agreeing that students were responsible for any material or announcements posted on the VLE, so both academic and students were clear about their duties and obligations, which aided accountability as well: “*I think you should because it’s the same as if you go into the classroom, you hand in your brief in print and then the student says, “I lost it. I don’t have a copy of it.” Now you have no excuse because you can download it anytime. You can print it anytime. It’s more reliable and you can hold them accountable*”, I10.

This type of transparency aids in elevating students' levels and preparing them to be more responsible, which aligns with the college vision. Moreover, by having materials and syllabus posted, students were constantly reminded of course structures, assignments, exams, etc. This helps to change behaviours and open the door for more active learning styles (see 4.2.2.1.2, ‘motivating more active learning styles’).

4.2.2.5.1.4 *Through Groups*

The Groups feature allows instructors to create groups of students in VLE to work collaboratively and exchange materials. Through monitoring these groups, the instructor is able to see who is contributing in the group and whether a member of the group is not contributing much: “*With the group feature, I can actually see who is contributing and who is not contributing, because I will see each student submitting a specific section, but still I am trying to avoid that whole headache, but it’s very useful... especially if you are forced or if you have to use a group assignment, it’s an excellent tool where they can share information and I can view*

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all of their submissions,” I5. Such features improve transparency and aid in conflicts, if any occur.

When transparency between academics and students is increased through the use of group features in VLE, students are taught how to ethically work in a team and how collaboration should take place in group work, which will improve their negotiation and teamwork skills. Such skills are essential in preparing student for global experiences (see 4.2.1.4.1.1, ‘preparing students for global experience’).

Increased transparency between academics and students through the use of different VLE features brought changes in teaching and learning practices at Omega College. The use of grade breakdowns improved trust between academics and students, which should result in better teaching and learning processes, based on interaction. In addition, the increase in transparency which resulted from the use of plagiarism detection systems and group features lifted student standards and equipped them with skills for competing in the job market and prepared them for a global experience, which aligns with the college vision for their students. Elevating standards of students through the use of VLE allowed more active learning styles and paved the way for the adoption of student-centred learning styles (see 4.2.2.1.3 ,’more discussion inside class as part of students-centred learning’).

4.2.2.5.2 Change Nature of Office Visit

At Omega College, academics who were full time needed to deliver their lectures and allocate two office hours for their students for each course, while part time lecturers needed one hour. During interviews, academics said the deployment of VLE had changed the nature of student’s visits to their offices. It was reported to have led to a decrease in the number of office visits, thus:

“It’s decreased quite clearly, lots.” I3

“It’s getting less, yes.” I7

“It lessened... the knocking on doors.” I8

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Thus the academics noticed that students visited to their offices less, which they thought was due to the availability of materials on the system, in addition to the use of the system as a mean of communication: “*It lessened the number of students coming in office hours; I mean they have everything clear in blackboard so they don't have to come and ask about the details because they are on blackboard, they don't come back and ask about it*”, I8.

On the other hand, other academics reported that they received more students at their offices after system deployment, for different reasons:

“*It will be more saying 'I want to see my grade'. That's the first thing they would say.*” I4

“*No it becomes more... because grades are posted at once but before... it used to take us a longer time to issue the grades but now... they are posted altogether; sometime I have over 15 students on my door asking or complaining about their grades at the time when announced, they come together and discuss critical issue and come back and knock on my door.*” I9

“*Actually, they come to you more, saying, 'Oh Miss, that thing you said you'd posted on Blackboard didn't come. Oh Miss, that thing you posted on Blackboard isn't there'. There's always a problem with something that I posted on Blackboard or something that I didn't post on Blackboard or how come we can't open it today.*” II8

“*No, it actually increases the number of students who come to my office asking... They become more motivated, you know like, they are more interested in using this software.*” I15;

The previous quotes show that the increased number of students could be due to a wish for elaboration on their assigned grades, as a result of problems faced due to

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VLE use and student interest. Posting grades on the system was a mandatory feature, and academics were required to post all grades for all assessed work throughout the semester. Other academics overcame the issue of students coming to their offices asking for grade justifications by posting comments: “*When I grade assignments I put in actual comments..., so that's minimizing the number of students who comes to complain or they want to understand what's the mistake, but in terms of let's say review or wanting more explanation or wanting help, they still come to the office, so it minimizes let's say 20% of the visits*”, I5. With regard to the increased number of office visits due to problems with VLE, academics were advised to report the issue to the IT department, as discussed in the previous section, as the College tried to provide reliable technical support to all users to help them overcome any technical obstacles (see 4.2.1.2.2 Availability of Reliable Technical Support). For students who visited their academics out of interest in the system, it has been reported positively by academics and it could reflect better communication between academics and students.

Other academics noticed little change in the number of visits. I12 reported that “*Yes, less office-hours communication. My class hours remain the same but I have less walk-ins for administrative questions. I still have walk-ins for academic issues but definitely less walk-ins for administrative ones.*”

Although some academics perceive the decreased number of office visits positively, I6 perceived this as a double-edged sword: “*It's very important that they come. They need to know and we need to discuss what was wrong. They only come when the grade is not fine. They come to this course but this should be a healthy process across the board, not only once the grade is not good. They need to know what was wrong and what was good, which is not possible with Blackboard*”. Her opinion can be linked back to the communication aspect of VLE: although the system is perceived by academics as a communication enhancer, it might act as a personal communication barrier, bearing in mind that face-to-face communication is the richest form of human interaction.

It can be concluded that the deployment of VLE changed the nature of students' visits to their academic's offices. These changes involved a decrease in the number

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of overall visits, a change in the nature of issues communicated through the visits, or increases in the number of visits due to students' interest in or problems with the system. These types of changes affect the overall perception of the system by academics.

4.2.2.5.3 Better Communication

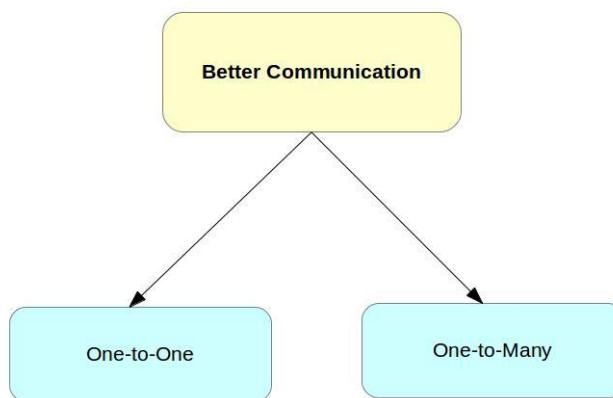


Figure 41 Communication

Previously in the chapter, it has been mentioned that improved communication is one of the perceived benefits from the usage of VLE from academic's perspective (see 4.2.1.1 Improved Communication). In this section, communication will be discussed as a change in the relationship between academics and their students. In other words, this section will discuss the change in the relationship between academics and their students which resulted from the perception of the VLE system as a communication enhancer. Communication is an important pedagogical aspect. Teaching and learning processes are based on interaction, therefore communication and its types are important in determining changes in teaching practices. Both types of communication will be discussed; one-to-one and one-to-many.

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5.2.2.5.3.1 One-to-one Communication

As has been discussed in the benefits section, the academics perceived VLE as a communication enabler, for them, being able to post announcements and upload materials, improved communication between them and their students. On the other hand, when academics were asked about the effect of the VLE on students' visits to their offices, their perception varied (see 4.2.2.5.2 Change Nature of Office Visit)

I1 mentioned that the one-to-one communication determined by academic was not tied to VLE: "*I usually have one-on-one discussions... at least twice or three times every semester on the writing course... They usually come. This is something I don't think is related to the Blackboard in any way; they have to know that whenever they need to come, they have my office hours and they can come then*". According to this interviewee, students should utilize office hours for one-to-one communication and VLE has no impact on this: "*I think this is because of the teacher not because of the VLE*".

Likewise, I9 thought that VLE did not affect the one-to-one communication between academics and their students and that students still communicated personally with academics: "*Students, whether they use the Blackboard or not, they still love communicating one-to-one without the presence of their friends; the method of communication they still prefer is face-to-face, but what has happened is now they come to my office and say I have posted a message on Blackboard and they have not read it*".

This shows that personal communication is a personal preference and that VLE might not play a vital role in enabling or disabling it. However, it is worth mentioning that, although VLE might not enable or disable personal communication, it has been reported that VLE has enhanced the quality of issues communicated through face-to-face communication, according I12: "*My class hours remain the same but I have less walk-ins for the administrative questions. I still have walk-ins for the academic issues but definitely less walk-ins for the administrative*". This indicates a change in issues communicated through office visits, instead of routine administrative inquiries, now after VLE, inquiries are more academic.

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5.2.2.5.3.2 One-to-many Communication

As has been discussed previously, being able to convey important messages to groups of students through a reliable means is a feature at VLE appreciated by academics: “*Access to the student, access to the information is better delivered... I can access them easily, deliver the information quickly, that's it*”, I6. By ensuring that students received all messages and materials through the VLE, academics could hold them accountable for anything posted (see 4.2.1.1.8, Holding Students more Accountable). This could suggest that VLE helped change relationship between academics and students, from students expecting academics to be the sole provider of information and from highly depending on them, to a more mature relationship, where students are responsible for satisfying their own information needs: “*I don't have to chase after the students, you know, I just post it and they're responsible*”, I3. The deployment of VLE could also play a role in changing the relationship between academics and students to become more formal, by relying on the VLE as a formal means of communication, and by decreasing the amount of personal communication:

“It has become more formal... but more at ease, at the same time, and they are more comfortable in addressing anything at any time they want, but they know that when they address anything through the blackboard they know they have to be formal in addressing their teacher, which helps them a lot later on in their dealings in life or in college.” II

The previous quote suggests that the VLE enabled the relationship between academics and students to become more formal through reliance on the system as a formal means of communication.

VLE as a mean of communication has changed the relationship between academics and their students, especially in the one-to-many type of relationship. While relying on the system to convey messages to students has made students more responsible, there was no strong evidence from the data that the one-to-one relationship between the academic and her students had changed, with the exception of the change in the

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nature of issues communicated through one-to-one sessions.

However, it is worth saying that, by utilizing office hours for academic issues, academics benefitted from the VLE and this could be perceived as a positive change of practice. When academics and students use office hours for academic issues, this will strengthen the benefits students receive from their courses, which in return will improve student's quality of performance. This aligns with the college's vision of preparing students for the global experience (see 4.2.1.4.1.1, preparing students for global experience).

4.2.2.5.4 Increased Student's Privacy

During interviews, academics expressed how the deployment of VLE helped retain students' privacy in terms of her grades and other issues. By posting grades on VLE, only the student has access to her grade, unlike previously, when academics used to post grades on walls with students' IDs;

"What we used to do was to post an Excel sheet template with all the grades but then last semester we informed the students that they could pick up their ID numbers and find each other's grades. But now we have to enter the data into the system one-by-one for students, so... the communication between me and the students is more personalized." I9

"We used to post the grades on our doors, now we do not have to do that as they can access them via the backboard."

I14

Posting grades on doors and walls used to jeopardize students privacy by allowing others to trace her ID and reveal the grade. According to I25, posting grades on doors was a bad practice and could cause conflicts: *"We had faculty members post grades but they didn't go through the grade centre, they posted a document, with all the students' ID numbers and grades, which is wrong, coz then you have all students looking at all of the grades".*

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The extension of privacy brought about by VLE can help create a more trusting relationship between academics and their students, knowing that their information will be kept safe. Developing trust in the relationship between academics and students is a positive trait, and leads to better teaching and learning processes.

4.3 Summary of Findings

This chapter presented and discussed the key findings of the study. It started by briefly describing the process followed by data analysis, which was followed by presenting the main list of themes in addition to the main concept map. A narrative of themes, sub-themes and codes was presented and discussed. Through the use of quotes from interview transcripts and interpretation from the researcher, the narrative took into account how themes and sub-themes were related and how factors of change in teaching practices occurred, thus answering the research question and achieving research objectives.

Figure 16 Main Concept Map, which features the main concept map of the study, represents the relationship between the main themes and sub-themes which have emerged from the study. Data analysis using thematic analysis to uncover changes in teaching practices in term of **teaching styles, teaching strategies, active involvement of VLE implementations and exploitation, active involvement with other ICTs in education and relationship with students**, and certain factors emerged from the data which need to be presented.

These factors **are perceived benefits, institutional aims, institutional pressure, institutional support, pressure from the digital generation, perceived challenges and perceived barriers**. The main concept map featured in Figure 4 represents a model. The proposed model answered the research question and achieved the research objectives. As the findings show, several changes occurred in teaching practices as a result of the deployment of VLE at Omega College, and these were identified and discussed, based on the factors that led to them and the

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consequences resulting from them. The following list of factors that led to changes in teaching practices show how the research questions have been answered:

- Perceived Benefits. Through the realisation of benefits from the system, such as communication enhancement, paper- and time-saving, increased availability, ability to collaborate with other institutions, enriched classroom experiences, aiding in business continuity during crises and holding students more accountable, certain changes have occurred in teaching practices. For instance, through holding students more accountable, the relationship between academics and students changed in terms of transparency. Log data generated from VLE show, for instance, when a particular student accessed certain materials. Therefore, both academics and students are clear on their rights and obligations, which is considered a change in teaching practices. Likewise, the increased availability benefit perceived by academics offering permanent access to learning materials changed teaching strategies at Omega College. For instance, by providing discussion materials beforehand and making them available for students, more discussions occurred inside the classroom, which served a student-centred learning approach. This adoption involved a change in teaching practice, which had, as in most HEIs worldwide, been based on an instructor-led or faculty-centred approach.
- Institutional Support. This factor involves types of support provided by the institution that aided in the use and exploitation of VLE feature, and, as a result, allowed changes to occur in teaching practices. For instance, by providing teaching styles workshops, academics were motivated into using and exploiting different system features that enabled the application of knowledge gained from such workshops. This type of support leads to changes in teaching styles in terms of transforming the role of academics from information spoon-feeders to learning facilitators. Features such as materials sharing and discussion boards aid in these changes.
- Institutional Pressures. This factor includes different types of pressures that the institution puts on academics to adopt the system and use it. For

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instance, by making the system mandatory for all academics, changes in teaching strategies, such as providing instant feedback, occurred. When the academic is obliged to post, for instance, grades for assignments, as soon as she has finished grading, students have instant feedback, which is a change from the old practice where they used to wait for academics to inform them about their grade.

- Institutional Aims. This factor involves the aims of the institution implementing the VLE system. For instance, the college's aim represented by its strategy stated that it promotes student-centred learning. The VLE system was used to achieve this aim by academics, by the uploading of materials beforehand; more discussions took place inside classrooms, as part of the student-centred learning approach. This is a change in teaching practices.
- Pressure from the Digital Generation. This factor explains how the VLE deployment was affected by pressure from the current digital generation. This kind of pressure influenced VLE usage; academics used VLE features to cater for the current generation. For instance, University students these days appreciate permanent access to academics. By using of VLE announcement feature, one-to-one communication between academics and students changed, and now academics can reach students, regardless of time boundaries, which is a change in practice.
- Perceived Barriers. This factor is concerned about barriers that prevent academics from fully exploiting VLE features. Perceived barriers such as lack of feature-specific training, led to making academics more actively involved with system implementation and exploitation, and led them to demand more tailored training. This active involvement is a change in practice.

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- Perceived Challenges. This factor is concerned about challenges faced by academics in VLE usage. For instance, there was a general learning culture where students used to have their academics as their sole information provider. Through the exploitation of VLE features, academics' teaching styles have changed and now they are more learning facilitators than information spoon-feeders. Such a challenge encourages more exploitation of VLE features, which yielded changes in teaching styles and strategies.

The previous points provided examples of how changes have occurred. Narratives of factors and resultant changes explained how factors led to changes in detail.

Through discovering VLE features that are frequently used by academics, such as announcements, materials sharing, grading and syllabus posting, it was determined how VLE changed and affected teaching styles and strategies, how it affected academics economy of efforts in term of time-saving; the ability to upload teaching materials, instead of printing them; the ability to communicate with a batch of students through announcements; and the ability to electronically post grades without the need to print them and provide them individually to students. As a result, it was determined how VLE affected teaching processes at Omega College. These have achieved the research objectives, as stated above.

From the above narrative, the following key findings have emerged:

- The VLE system was used as an accountability tool for both academics and students;
- Academics perceived the ability of students to access materials and announcements permanently as communication enhancement;
- The VLE system was used during crises to ensure business continuity;
- The deployment of VLE was a strategic decision made by the college's Board of Trustees and is part of a bigger strategy to use ICT in an attempt to prepare students for the global experience;

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- System mandating resulted in achieving 100% use among academics, and, as a result, the system was perceived to be a good investment by college principals;
- Despite system mandating, academics who perceived the system as not being fit for purposes challenged the system's sustainability;
- Actual teaching inside classroom did not change after VLE deployment;
- Academics referred to student-centred learning and blended learning as terms more than as actual teaching practices that they adopted;
- VLE was perceived as a system that enhanced transparency between academics and students;

The next chapter will discuss the findings in light of the existing body of knowledge and, based on that, contributions to the literature will be identified, along with recommendations for future work. The next chapter will also conclude the study.

Chapter 5 Discussion and Conclusion

5.1 Introduction

This chapter aims to compare and contrast findings from this empirical study to the existing relevant literature in the field of educational technologies in higher education. Discussion is important in defining contributions of the study to the existing body of knowledge in the field. Both theoretical and practical contributions will be presented. Theoretical contributions show what the current study has added to the current existing body of knowledge, while practical contributions show how the study will help- practitioners in the research context and within the field apply changes. Such discussion will place the current study within the existing literature and will define its significance.

The chapter will also conclude the conducted study. A conclusion will restate the research question and how the conducted activities have answered it. Likewise, it will demonstrate how research aims and objectives were achieved through different activities. The conclusion also includes the limitations of the study, which all research inevitably has. By acknowledging these limitations, the researcher will be able to identify prospective future work and further studies that will aid in overcoming these limitations.

The chapter is constructed as follows;

Section 5.2 provides a summary of activities conducted during the study; this will feature how each activity aided in answering the research question and in achieving research objectives.

Section 5.3 presents discussion of findings that compare and contrast findings from the study against the current literature. This discussion will feature findings that corroborate with existing literature and contradict with them as well. It will also feature and discuss new context-based factors.

Section 5.4 lists research contributions based on the discussion, both theoretical and practical.

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After this, a response to the research question will be provided that includes restating research questions and aims and how the research answers them. Limitations of the study will then follow, and lastly, future work based on research limitations will be suggested.

5.2 Summary of Activities

This study has five chapters. Chapter 1 provides background to the study in addition to providing research aims, questions and objectives. The chapter also provided significance of the study, in addition to researcher's personal motives; which acted as the main drivers in conducting the study. In this chapter, the researcher provides an account of ICT utilization in HEIs around the world. In addition, the usage of VLE in particular is mentioned as one of the most deployed ICT solutions in HEIs worldwide. Moreover, the researcher provided facts about how Saudi Arabia is spending in education in general and in higher education in particular. The study was conducted at a HEI in Saudi Arabia; therefore, it provides background on the country and how they perceive education to be necessary.

The researcher explains the significance of the study, mentioning that academics' perceptions are vital in HEIs in Saudi Arabia in particular and in the world in general. The general lack of qualitative studies that tackle this issue in the literature has made such studies important. Academics and students are the main users of VLE, so that understanding their perceptions of the system are vital for its durability and sustainability. Students' perceptions have received attention from scholars while those on academic's perceptions are rare in the literature.

The research aims were then presented with the research question. The research has aimed to investigate the impact of VLE deployment on teaching in HEIs in Saudi Arabia. And to achieve that aims, a proper research context was chosen and a research question was formulated. The research aimed to answer this question: What are the perceptions of change in teaching practices resulting from the deployment of VLE at Saudi HEIs? Through answering the research question, research objectives, which identify and discuss VLE features mostly used by academics; and discuss the consequences for academics in respect of their teaching strategies, economy of efforts and expected learning behaviours. Although the study

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is inductive, the researcher reviewed the literature in an attempt to provide another background to the study, in addition to equipping her with tools to construct interview scripts.

A background based on accounts from IT personnel about VLE system deployment was then provided. Such a background is important as it aided in setting the scene for the study and equipped the researcher with information that help her construct interview scripts and identify participants. Moreover, the background of the research context and VLE deployment influenced the choice of methodology and research design most appropriate for the study.

After this, Chapter 2 presents a review of the current literature in VLE usage. The main aim of this a review was to equip the researcher with knowledge in the field that allowed her to construct a comprehensive interview script that would aid her in answering the research question, and achieve research objectives.

The research is mainly concerned with the use of VLE inside the classroom. As a result, the researcher starts by reviewing the literature in school history and norms of classrooms.

After this, literature on learning processes and different teaching styles adopted within the context of classrooms in HEIs were reviewed. Such an explanation was important and relevant as it defined the VLE's role in the learning process. In addition, it aided in discovering whether VLEs had changed or enhanced pedagogy within the classroom environment, as reported in the literature.

After this, the researcher reviewed literature on learning in women-only HEIs. This research was conducted in a women-only HEI in Saudi Arabia. It is true, however, that all HEIs in Saudi Arabia are gender segregated, but what makes the research context on which this study was conducted unique is that it has no male branch. It is fully internally operated by females, with few exceptions. The Board of Trustees members are male, in addition to a few academics who teach students in separate parts of the building to avoid mixing with other female students and staff. Reviewing the literature of women-only HEIs was important in this research, as it aided in discovering how the phenomenon of VLE usage operated in female-only contexts and how decisions to deploy such systems were taken. This was achieved

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by examining the managerial and teaching styles in women-only HEIs worldwide in general, and in the Arab world in particular. And accordingly, the researcher developed an interview script specifically for members from upper management.

This is followed by reviewing the literature on technology and e-learning in classrooms. It was important before proceeding to the use of VLE in classrooms to set the scene in how technology as a principle was used in the classroom. In addition, defining the concept of e-learning was necessary, as VLE is considered to be an application of e-learning.

This was followed by reviewing the literature of VLE and other technological solutions in HEIs. Literature featuring different VLE types, structure & components and interactive facilities were reviewed. And in order for the researcher to gain an insight into how VLE was actually being used, the researcher acquired access to a full demonstration of Blackboard Learn release 9.1. The demonstration allowed access to both faculty's and students' views. Academics' and students' descriptions of features are provided. This is followed by a discussion of VLE's advantages and disadvantages, as reported in the literature. Lastly, the researcher attempted to review literature about VLE in Saudi Arabia. Such a review was important, as the study was conducted at Saudi Arabia. The chapter then concludes the key points on which discussions of the perceptions of change in teaching practices, as yielded by the empirical study, were realised.

Chapter 3 explains research methodology and design; the researcher examined different methodologies and designs before it was decided which to adopt. The chosen methodology was based on the chosen research context, nature and culture, as explained in the introductory chapter (see Research Context), which was taken into consideration when different methodologies were examined. The chapter started by discussing philosophical considerations, which set the scene for the research and determined researcher position in the research.

This is followed by an explanation of the research approach in general and why an inductive, case study approach was chosen. After this, the chosen methodology was explained. Firstly, it was decided that the study would follow a mixed-methods approach, where which the researcher would conduct a qualitative study using

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semi-structured interview as a data collection tool, and after analysing it, a quantitative study, using surveys as a data collection tool.

After data was collected for the qualitative part of the study, and after the researcher started analysing data, it was discovered that theoretical saturation was reached. Based on the original plan, the theory generated from the qualitative study was going to be used to design self-administered survey for the quantitative part of the study. After several supervisory meetings and after carefully examining results from the qualitative study, the students and supervisor decided that the quantitative study is not needed as it would not yield more results. Therefore, the study was conducted qualitatively with semi-structured interviews being the main source of data collection. The researcher travelled to Saudi Arabia to conduct the interviews, except of one interview which was conducted via Skype.

Research design was explained, such as how interview scripts were prepared, how participants were chosen, that a list of all participants was provided and how interviews were conducted.

The chapter provides a background about the type of research context. It included information about its establishment, vision and mission, and the number of staff and students, academic programs and information about staff and student nationalities. It also includes information about the nature of the Omega College as an elite small HEI, in addition to providing a comparison between private and public HEIs in Saudi Arabia. This background is important as it informed the researcher about the nature of the research context and aided in constructing interview scripts and identifying participants.

After this, data analysis was explained. The researcher explained the chosen data analysis method, which is thematic analysis. The researcher explained how the analysis process, using thematic analysis, was conducted, and how themes were identified. Subsequently, the researcher presented different alternative data analysis methods and explained why thematic analysis was chosen for the current research. This was followed by presenting ethical issues concerning the study. It was explained that the study obtained ethical approval from the Information School (See 3.6 Ethical Issues) prior to data collection. The researcher has also obtained

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ethical approval from the research context which granted her access for data collection purposes. The chapter then concludes.

Chapter 4 explains the study's Findings, explaining the results from the research and showing how research questions were answered and how research objectives were achieved. Moreover, findings led discussions and identified contributions of the study to the current body of knowledge, which is a core part of any research.

The chapter started by describing how the analysis process yielded the proposed findings. Steps of thematic analysis were explained along with screen shots from Nvivo software, which was used to handle qualitative data. A list of themes that emerged from the data analysis were presented, along with the main concept map; which explained relationships between themes, sub-themes and codes. After that, narratives of all themes, sub-themes and codes were provided. In thematic analysis, themes are not ordered, nevertheless the researcher started by narrating the factors that led to perceived changes by academics at Omega College. In fact, it was explained in the findings chapter that data analysis yielded, in order for changes to occur in teaching practices at Omega College, as certain factors that emerged from the data need to be presented. Therefore, the researcher started by narrating the factors that led to changes in teaching practices, followed by the changes in teaching practices, as perceived by academics. Findings suggested that changes had actually occurred in teaching practices as a result of the factors presented; these changes formed the answer to the research question. The chapter then concludes by presenting a summary of findings, including an explanation of how the research question was answered.

The current chapter 5 will discuss findings and conclude the study.

5.3 Discussion of Findings

This section will discuss empirical findings from the current research in relation to the existing body of knowledge. Such a discussion is important in any research, as it highlights the contribution of the current research to the body of knowledge; will identify aspects that corroborate the existing body of knowledge which will aid in formulating models and frameworks for interested researchers and help them in future work; and identify the limitations of the current research. The Findings

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chapter elaborates the analysis of all emergent themes and sub-themes, generalizing and choosing themes most relevant to the existing body of knowledge.

Before conducting the empirical study, and in order to design informed interview scripts for the semi-structured interviews, a literature review was conducted. The conclusion of the literature review yielded the following points:

- A. Classrooms in principle have not changed throughout history;
- B. Technology use is a trend in HEIs;
- C. From the literature, the behaviourist teaching style is the dominant one in different educational settings;
- D. VLE systems are being promoted worldwide as a constructivist tool, but from the previous studies reviewed, VLEs in practice seems to be neither constructivist nor behaviourist;
- E. VLEs' role depends to a great extent on the users' behaviour, and whether VLE promotes and changes pedagogy remains blurred;
- F. The decision to deploy VLE is a strategic one and models of deployment and system usage promotion and enforcement depend on the leadership style in the HEI.

Points B 'Technology use is a trend in HEIs' & F 'The decision to deploy VLE is a strategic one and models of deployment and system usage promotion and enforcement depend on the leadership style in the HEI' represent factors that lead to changes in teaching practices due to VLE in particular and ICT in general, while the other points represent changes in teaching practices as reported in the literature. This empirical study suggested that, in order for changes to occur, certain factors need to present. Consequently, discussions of key factors that led to changes in teaching practices at Omega College will be discussed first; discussions will include B & F but will not be limited to them, as empirical data yielded more factors that led to change. This will be followed by discussions of perceived changes in teaching practices against points yielded from the literature review.

The proposed model in this study; which was presented in the findings chapter as the main concept map (see Figure 16 Main Concept Map) explained the relationship between factors of change in practice and actual changes that occurred as a result of these factors, is tied to the current research context and cannot be compared to

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existing knowledge. Nevertheless, factors and changes in empirical data yielded sub-themes that are relevant and in other instances contradict the literature, and also yielded other factors that are new and tied to the current study.

For instance, the factor of improved communication was mentioned and discussed in the literature, but not as a factor that influences changes in teaching practices due to VLE, which is unique in this study.

A description of these factors will be given and discussed. It is worth saying that this model has aided in answering the research question. By realising what drives changes in teaching practices, determining these changes and how they took place is possible, and thus they are presented in the Findings chapter (see 4.2 Findings Narratives) .

In the literature, pre-existed models were used to assess VLE usage in HEIs, mostly from student's perspective. For instance, Ngai et al (2007) and Sanchez-Franco(2010) used Technology Acceptance Model (TAM) to asses' students acceptance of VLE (see 2.6.5 VLE Advantages, Challenges and Previous Research) , and McGill & Klobas (2009)used task-technology fit to assess the use of ICT in education, nevertheless, teaching academics' perspective is absent in the literature.

The proposed model might aid in providing framework that can be utilized by researchers to determine teaching academics 'perceptions of VLE in HEIs. More about this model will be discussed in the chapter (see 5.4.1 Theoretical Contributions).

5.3.1 Factors of Change in Teaching Practices due to VLE

In this study, several factors influenced changes in teaching practices due to VLE deployment at Omega College. This section will discuss emergent factors against the existing body of knowledge in the field. Each factor, corroborating, contradictory and new context-based, will be presented and discussed.

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5.3.1.1 *Perceived Benefits*

5.3.1.1.1 Corroborating Factors

One of the factors that shape changes on teaching practices at Omega College is perceived benefits. The limited existing body of knowledge on VLE use have approached the aspect of VLE benefits from different angles. According to Jusoff and Khodabandelou (2004), blended learning (on which VLE is based) increases the interaction between students and their instructors and decreases the distance. Moreover, it has been reported in the literature that the use of interactive tools in VLE, such as Messaging, emails, Announcements and Bulletin Boards help students and academics feel connected to each other, referred to as *Social Connectedness* (Lee & Robbins, 1998, p. 338, as cited in Costen, 2009). This corroborates findings from this study, which discovered that academics at Omega College perceive VLE deployed as a communication enhancer and as a tool to bridge the gap between academics and their students (see 4.2.1.1.1 Improved Communication).

Moreover, one of the discovered benefits from VLE use at Omega College is increased availability and better access to academics and student peers (see 4.2.1.1.4 Increased Availability), which corroborate with the literature, as they are forms of *Social Connectedness*. At Omega College, different tools aided in enabling communication, such as Announcements, Discussion Board and Materials Upload (see 4.2.1.1.1 Improved Communication). Although this corroborates with the literature, nevertheless considering materials upload as a communication enhancer is novel in this study. It has been discovered that academics consider materials upload and the ability of students to reach materials at anytime to be a form of communication.

Moreover, as has been explained at the Findings chapter (see 4.2.1.1.1 Improved Communication), academics perceived information reachability and availability for students as communication enhancement, which opens the door to more research in types of communication occurring through the use of ICT tools and their effectiveness in education. This will be discussed in future work.

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From empirical data, it was discovered that one of the benefits from VLE is that it helped cater for large classes (4.2.1.1.7.2 Catering for Large Classes), a point corroborated in the literature. In an empirical study conducted at the University of Manchester which examined a campus-based management course taught to 270 engineering undergraduate students, the study examined whether the selective use of learning technology can overcome the challenge of teaching large cohorts. It was discovered that face-to-face teaching remains the priority; nevertheless VLE was found to improve students learning, given certain conditions (Saunders & Gale, 2012).

Other benefits of VLE use as reported in the literature are flexibility and increased cost-effectiveness (Bonk & Graham, 2006). Empirical data showed that permanent materials availability was a benefit appreciated by academics which corroborated the literature, as it created flexibility. Increased cost-effectiveness, as reported in the literature, can be attributed to less paper use and less office time for academics. These factors corroborate with current empirical data which shows that academics appreciate materials upload and other features in VLE that aided in creating a less paper-dependent environment and saved them time previously wasted in printing course materials for all students. The factor of “less time at offices” was not proven in empirical data; nevertheless academics reported changes in the frequency of office visit by students, which will be discussed later on the chapter. Time was saved in class as a result of materials being uploaded beforehand, and all course information being posted, which limited the amount of unnecessary questions asked (see 4.2.1.1.3 Time Saving and 4.2.1.1.2 Paper Saving).

In the current research, it was reported by academics that the less printing advantage offered by the use of VLE aided in creating a greener environment, represented by less paper consumption and less use of printers, which comprises energy and toner consumption (see 4.2.1.1.2 Paper Saving). It was not reported in the empirical data that the deployment of VLE aimed to create a greener environment; nevertheless the actual usage revealed this advantage and academics, along with college principles, appreciated it. The issue of green philosophies in higher education have received attention from scholars in recent years (Lozano, et al., 2014) & (Wang, et al., 2013). In the case of Omega College, the deployment of the VLE system made them realize the green outcome from it, and for such a

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prestigious institution, greening is important. This could open the door for more research in how to exploit VLE in particular to create greener HEIs.

5.3.1.1.2 New Context-Based Factors

The analysis of empirical data yielded perceived benefits for academics at Omega College that were not mentioned in the literature as far as the knowledge of the researcher ascertains. One of these benefits is **Holding Students more Accountable**.

As has been discussed in the Findings chapter, academics used the VLE deployed at Omega College as an accountability tool, exploiting features of the system which allowed them to know whether a particular student had accessed a certain file or not. It also allowed them to provide proof that a particular material was uploaded at a certain time and date. In this case, and in case of conflict or complaints from students, academics could provide evidence. The system was also used by college principles to hold academics accountable (see 4.2.1.1.8 Holding Students More Accountable).

As the system was mandatory for academics and there was a threshold that all academics had to meet, college principals generated reports that showed the levels of use of each academic, in order to check whether they were meeting the threshold, and thus evaluate system use. Moreover, if a student complained to an academic, they used the system to generate evidence, and in that sense it can be concluded that the system was used to hold academics accountable for their actions as well.

The use of the VLE system as an accountability tool could be attributed to several factors. Firstly, the nature of the college plays role. The College is a private fee-based higher education institution which usually attracts elite students, and in such an establishment, in the context of Saudi Arabia, students felt that they preserved the right to question academics, unlike their rivals at public HEIs, where students hold less power and where academics are powerful entities with no clear system for accountability. In such an establishment, the use of the system to generate evidence is appreciated by both academics and principals, as it can be used in case of conflicts. Such a use is unique to the current research context and has not been

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reported in the literature; moreover, such a use is not promoted by commercial VLE systems providers, which adds to the uniqueness of the current finding.

Another factor that plays a role in the propagation of such use is the size of the college. The small size played a role and made students feel that academics and principles could be easily approached; the whole college is housed in one building and the college dean met with staff and students on a regular basis, and in such an atmosphere, students felt more at ease and tended to exercise what they perceived to be their rights more often. In addition, the college is one of the few HEIs in Saudi Arabia that has Student Government, which reflects the power the students have in this establishment. Using VLE as an accountability tool is unique and tied to this research context; this finding could open the door to more research in this area.

Another perceived benefit that is unique for the current research context is **the use of the system during times of crisis**. It is true that disaster recovery and business continuity plans are part of the strategy of most institutions, either educational or other, nevertheless the use of VLE in the case of Omega College was unique. The crisis was blurred as it had to do with administrative issues regarding academic sponsorship, and the college was not entirely shut but classes were disrupted, with the absence of certain academics. Therefore, it was decided among departments that they would try to use the VLE as much as they could, so classes were not entirely cancelled. Such use opens the door to more research on other uses of VLE and its benefit as a business continuity tool.

Benefits realized from the use of VLE that corroborated with literature were found to be communication enhancing to a certain extent, bringing flexibility & availability; catering for large classes; and saving paper and time. Benefits found empirically included the use of the system for accountability purposes and during times of crisis. More discussions will be presented in the ‘future work’ section

5.3.1.2 *Institutional Support*

5.3.1.2.1 Corroborating Factors

Institutional support is a factor that influenced changes in teaching practices resulting from VLE deployment at Omega College (see 4.2.1.2 Institutional

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Support). Armitage & Jenkies (2009), in a study conducted by the Learning and Teaching working group of UCISA (Universities and Colleges Information Systems Association) highlight some of the headline findings from the UK focused Management and Implementation of Virtual Learning Environments (VLEs) survey. It was found that the introduction of VLEs to UK HEIs was considered a new development in most, this corroborates with the current study, as it was reported by college principle that the VLE deployment made a change and that academics needed to adapt to that change or not teach. From the administered survey, it was reported that, at surveyed UK HEIs, central IT and specialized support units, such as Learning Technology Support Units (LTSUs) and Educational Development Units (EDUs), were the most used services in terms of staff support, particularly in the pedagogy and development of new courses.

It is true that Omega College provided reliable technical support for academics in addition to the on-going training and workshops offered and through providing teaching styles workshops (see 4.2.1.2.1 System's Training and Workshops4.2.1.2.2 Availability of Reliable Technical Support). However, they didn't provide a unified service that connected technology to pedagogy. According to Bloxham & Armitage (1999), as cited in (Armitage & Armitage, 2009), bridging the gap between technical possibility and pedagogical requirements is the role of educational technologist, role not in place at Omega College.

It was suggested by an interviewee that a centre for educational technologies should be established at Omega College to aid in realizing benefits from different tools provided for academics. This suggests that creating the role of educational technologist could aid in maximizing the benefits from different educational technologies offered for academics at HEIs.

The absence of educational technologist at Omega College did not affect the fact that reliable technical support was appreciated by academics, as previously mentioned (see 4.2.1.2.2 Availability of Reliable Technical Support). This is corroborated by the literature, a study conducted by Nagi et al. (2007) which extended the Technology Acceptance Model (TAM) to include technical support, in addition to perceived usefulness and perceived ease of use, concluded that technical support was found to have a direct effect on perceived usefulness and perceived ease of use.

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5.3.1.3 Institutional Aims & Pressure; and Pressure from the Current Generation

5.3.1.3.1 Corroborating Factors

Institutional aims & pressure and pressure from the current digital generation are among the factors that influenced changes in teaching practices resulting from VLE deployment (see 4.2.1.4 ‘institutional aims’, 4.2.1.3 ‘institutional pressures’ and 4.2.1.5 ‘pressures from digital generation’). Institutional aims, represented in HEIs’ strategies and visions and how they influence the use of educational technologies, is mentioned in the literature in different contexts. Omega College, through its strategy, is following the global trend in using technology to improve education, which corroborates with the literature represented by point B from conducted literature review.

(Technology use is a trend in HEIs)

Pedroâ (2001) argued that probably there is not a single HEI worldwide that does not consider ICT both as a source of opportunity and of constant concern. The great advances in information technology in addition to the rapid exchange of information and networking have played vital roles in encouraging most universities worldwide to deploy ICT solutions in their strategies (Al Hogail & Mirza, 2011). Omega College follows this trend by strategically planning ICT solutions to be deployed as needed (see 4.2.1.4.2 Strategy). The college provides training and support services in order to ensure that technological solutions are utilized (see 4.2.1.2 ‘institutional support’), in order to fulfil its vision of being a pioneer HEI (see 4.2.1.4.1 ‘vision’).

At Omega College the decision to deploy VLE was a strategic one, according to college principals (see 4.2.1.4.2 ‘strategy’). This corroborates the literature, represented by point F from the literature review results.

(The decision to deploy VLE is a strategic one and models of deployment and system use promotion/enforcement depend on the leadership style in the HEI)

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According to Morgan (2003), VLEs play a vital role in fulfilling the strategic academic goals of higher education. Despite this, Selwyn (2007) argued that billions of dollars are invested on an annual basis in ICTs in HEIs worldwide, yet the fact remains that students and academics make little formal use of these application in their teaching and learning. In the case of Omega College, they attempted to overcome the underutilization by strategically making the system mandatory to use, a strategy which enabled the college realize a return on investment and increase the formal usage of the system to 100%. It is true that mandating use across college was applicable due to its small size, nevertheless it can be argued that system mandating aids in making ICT investments generate returns, despite the expected resistance and the need for more training and technical support that ensues, thus there is a need for more research on other types of HEIs to be able to conclude whether system mandating is a factor that aids in maximizing benefits from ICT application or not.

With regard to system brand, at Omega College and according to the IT principal, the choice was based on global popularity and was non-open source (see choice of system brand). Based on the literature, open-source systems such as Moodle are offered to institutions free of charge and give them the ability to modify source codes and apply changes as required (President's Information Technology Advisory Committee, 2000, as cited in Rooij & Williams, 2009). In contrast to it are commercially available VLEs like blackboard, where the source code is not open and they are offered to institutions on a license basis.

Omega College chose a non-open source in an attempt to have more reliable technical support and the ability to acquire on-going system modifications (see 4.2.1.4.1.2 ‘system brand’). In fact, an open-source system offers more flexibility in term of system modification, as the source code is offered, but whether commercial VLEs are better in term of available after sales services and on-going updates and modification services needs more research and context-based studies to investigate this matter.

Omega College, like most HEIs around the world aspire to use technology to cater for the digital generation and prepare them for the current job market (see 4.2.1.5 ‘pressure from digital generation’). This is corroborated in the literature, as

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Debande and Ottersten (2004) argued that the inclusion of ICT in education can be related to four rationales, one being economic or vocational, which is concerned with ensuring that the educational system is preparing students for the current job market, which normally requires skills in technology. The inclusion of ICT in HE is satisfactory for the current generation as they were born in the information age and they expect HE to be digitally mediated.

5.3.1.4 *System Challenges and Barriers*

Perceived challenges and barriers in system usage were identified as being among the factors that shaped VLE use and influenced changes at Omega College. Perceived barriers and challenges were discussed in relation Bonk and Graham (2006) and Jackson and Fearon (2014). Bonk and Graham (2006) categorized the issues and challenges faced by blended learning adopters (VLE users in this case) into six categories, namely the role of live interaction; the role of learner choice; models of support and training; finding a balance between innovation and production; cultural adaptation; and dealing with the digital divide. Jackson and Fearon (2014) discussed barriers and challenges differently, presenting a table that discussed barriers to VLE adoption along with challenges associated with them, generated through a review of the current literature on VLE adoption (see Figure 7: Barriers to VLE Adoption). Both corroborating and contradictory factors will be presented and discussed.

5.3.1.4.1 Corroborating factors

Bonk and Graham (2006) argued that models of support and training are among the challenges faced by VLE users. Jackson and Fearon (2014) also suggested that one of the managerial barriers to VLE adoption is the training challenge. Empirical data shows that insufficient training has a direct impact on academics' perception of the system (see 4.2.1.6.4 Perceived Lack of Feature- Specific Training), which corroborate with Bonk and Graham (2006) and Jackson and Fearon (2014). System use at Omega College was mandatory, therefore the issue of system training led to active involvement with the system (see 4.2.2.3Active Involvement with VLE Implementation and Exploitation) rather than preventing individuals using the system.

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Academics at Omega College said that the lack of sufficient time for learning and utilizing different features at VLE was a challenge for them, and this factor corroborates with Bonk and Graham (2006) and Jackson and Fearon (2014). Bonk and Graham (2006) argue that finding a balance between innovation and production is considered a challenge for blended learning adopters, while Jackson and Fearon (2014) suggest that time/work constraints is one of the teacher-centered challenges that affect VLE adoption.

Dealing with the digital divide poses some challenges at Omega College and academics tried to overcome the issue by sharing gadgets inside class or by providing extra submission time for students who had difficulties accessing the system outside college (see 4.2.1.7 Perceived Challenges in VLE Usage), which corroborates with Bonk and Graham (2006).

Jackson and Fearon (2014) argued that technical problems represented by interoperability issues, the unreliability of technology and problems with systems access and authentication pose challenges to VLE adoption. Such factors corroborate with Omega College. It was discovered that technical issues and how the system was accessed inside and outside college sometimes acted as barriers to system utilization (see 4.2.1.6.6 Technical Problems). Nevertheless, these barriers did not stop users from using the system. On the contrary, these challenges and barriers encouraged users to become actively involved with its implementation and exploitation (see 4.2.2.3 Active Involvement with VLE Implementation and Exploitation). This active involvement is tied to the decision to make system use mandatory for staff and students, so users were forced to find solutions to challenges and barriers, since not using the system was not an option.

5.3.1.4.2 Contradictory Factors

Bonk and Graham (2006) argued that it is a challenge to get students to participate in live discussions through the system, unless they are motivated by grades. Empirical data proved that at Omega College, academics who use discussion boards use different techniques to motivate students to participate and one of these, techniques grading, is mentioned in the Findings chapter (4.2.1.7.2 Lack of

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Student's Interest). Academics are not limited to grading and discussion boards are sometimes used without grades being given. Therefore, this factor did not cause challenges at Omega College, which contradicts Bonk and Graham (2006).

With regard to the role of learners' choices and how the system could make students feel that they did not need to attend sessions, this does not apply to Omega College, as students were obliged to attend and academics took attendance in class, which suggests that this factor was not considered a challenge at Omega College.

Cultural adaptation did not apply to Omega College as the developed curriculum adhered to the local culture and this was a requirement for them to be licensed. It is important that all subjects adhere to the Islamic rules and this is inspected by the Ministry of Higher Education (see 3.5.1.1.1 Omega College).

Jackson and Fearon (2014) argued that the lack of funding was considered to be an institutional barrier that challenged VLE system adoption. This contradicts the findings from the current study. Omega College's decision-makers were willing to invest in providing support in terms of training, system maintenance and even investment in new educational technologies was a strategic vision for the college (see 4.2.1.4.2.1 IT Investment)

5.3.1.4.3 New Context-Based Factors

The Findings chapter included several challenges and barriers tied to the current research context, such as system interface, general learning culture, perceptions of college policies and culture and the implementation deficit (see 4.2.1.6 Perceived Barriers in VLE usage4.2.1.7 Perceived Challenges in VLE Usage). The lack of qualitative research examining teaching academics' perceptions of VLE participated in the number of challenges and barriers found in the study not mentioned in the literature, in addition to the fact that the culture and the size of research context played a role, as academics could communicate their issues to college principals more easily than is probably the case in large establishments. In addition to the fact that the system is mandatory meant that the academics became familiar with the system and realised its challenges and barriers.

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In conclusion, factors that led to changes in teaching practices that corroborated the literature were as follows

- Perceived benefits. Benefits such as communication enhancement, increased availability, paper and time saving, catering for shy students and for large classes;
- Institutional Support in term of providing reliable technical support and the ongoing encouragement of ICT use.

Factors that led to change in teaching practices are important, but this research aimed to discover the perception of change in relation to teaching practices from the academics' perspectives. The following section discusses actual changes that occurred in teaching practices. They will be compared to those presented in the literature review.

5.3.2 Changes in Teaching Practices due to VLE

Influenced by various factors, several changes in teaching practices occurred at Omega College. This section compares these to the changes noted in the existing body of knowledge. Likewise, corroborative, contradictory and new factors will be discussed. Changes will be discussed against changes extracted from the literature review conducted before the empirical study was done. The changes are listed above (see 5.3 Discussion of Findings)

5.3.2.1 *Changes in Teaching Styles & Strategies*

5.3.2.1.1 Corroborated Factors

Point A suggests that classrooms throughout history have preserved a traditional setting.

(Classrooms in principle have not changed throughout history)

Omega College classrooms have a traditional shape, comprising desks and chairs and a lecturer standing in front or moving around the class and delivering lectures, as described by (Cole, 2005), which corroborates the literature. In fact, academia are well known for their solid, traditional approach rather than their innovative power (Westera, 2004), and university life maintains long-standing educational

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practice, which include formal academic programs taught in formal classrooms (Jamieson, 2009). Omega College is no exception to this model. Empirical data showed that no actual change in teaching delivery inside classrooms took place as a result of VLE deployment (see ‘teaching styles’). This could be linked to the traditional nature of the college, which is based primarily on lecturing. Formal lecturing does not entail that teacher-centred learning is the dominant approach at Omega College, which will be discussed next (see contradictory factors, 5.3.2.1.2)

Findings from the literature review, represented by points D & E, also suggest that VLE systems are being promoted as constructivist tools, and it is suggested that determining the nature of these tools depends on academics’ use;

(VLE systems are being promoted worldwide as a constructivist tool, but from the previous studies reviewed VLEs in practice are neither constructivist nor behaviourist)

(VLEs’ role depends to a great extent on user behaviour, and whether VLE is promoting or changing pedagogy remains blurred)

It is worth mentioning first that the concept of faculty-centred learning and student-centred learning at Omega College is blurred. In the literature review chapter (see 2.3 Learning Process), the researcher presented a comprehensive comparison between traditional teaching or faculty-centred learning (behaviourist) and student-centred learning (constructivist) and the role of VLE in enabling/not enabling student-centred learning, and it was concluded that VLE is either behaviourist or constructivist and that it’s the use that determines this (see Costen (2009), McGill and Hobbs (2009), McGill and Klobas (2009)).

The situation at Omega College corroborates the literature, as the academics saw teaching in the traditional way. During interviews, it was mentioned in several instances that technology had shifted the traditional, academic-centred methods into more active student-centred methods, “*using technology to replace traditional, you know, traditional format classes where the teacher is present in front of the students*” 16. Moreover, others perceived that the use of Powerpoint in principle reflects a shift in teaching methods from traditional to more student-centred or active learning: “*A traditional teacher who is a person who likes to do things by*

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hand: record notes by hand, take attendance by hand, lecture on the board, don't use any facility where there is an overhead projector or... I would call a professor who still uses a projector with slides a traditional one, not a PowerPoint presentation, you know, the slides" I10.

It is worth mentioning that, although technology might be incorporated into teaching by some academics, nevertheless it does not necessarily entail this academic moving away from traditional methods. An academic might use PowerPoint traditionally by displaying slides and reading them without incorporating students into the teaching process: "*maybe you write on the board or you show a presentation, even slide presentation is not considered hi-tech these days," I17.* The lecturer can still use VLE and yet maintain her traditional methods: "*Using the minimum of features of the Blackboard, like uploading the syllabus, posting the grades and then still do the old-fashioned lecture. That's possible, yes* ", I12. VLE is perceived by academics as an enabler or a helping tool for more active learning styles and in shifting from teacher-centred styles into more student-centred ones: "*We need to re-focus from teacher to students and Blackboard is one of the tools that is helping in this transition*", I12.

However, the use depends to a great extent on the academic's own perception, as mentioned earlier. VLE can be utilized with no tangible change in teaching styles and strategies. Likewise, academics who have the desire to shift from teacher-centred to student-centred learning might achieve the shift with the minimum use of technology: "*I don't think it's about the tools really. You can just sit in a circular layout and be the teacher and they are the receivers. They have no interaction whatsoever. I think having interaction...The Blackboard has facilitated that and encouraged it big-time. It broke the barrier between the teacher and the... and I usually go around the students so that not to make them feel like I'm the... you know, sitting in the front of the class and... they attend*", I17. She said that VLE is a tool that can be used as a change agent for teaching styles and strategies or a tool to fulfil managerial and academic requirements. This shows that at Omega College, VLE is either behaviourist or constructivist and that it is up to academic's perception and use to determine that.

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5.3.2.1.2 Contradictory Factors

The literature review, represented by point C, suggested that most HEIs adopt a behaviourist teaching style,

(From the literature, the behaviourist teaching style is the dominant one in different educational settings)

HEIs, as traditional establishments, mostly adopt a teacher-centred or behaviourist style in their educational processes. In most cultures, teachers are at the centre of education. This is often referred to as a ‘teacher-centred’ or ‘instructor-led’ approach; it entails teachers setting objectives, and determining and directing activities designed to help students achieve those objectives, and then assessing their learning (Pedersen & Williams, 2004).

Lecturing is the most common form of teaching in most universities. Not all lectures are purely didactic, but in general they feature little student activity (Kember, 2009).

This factor contradicts the current study. Omega College aspires to adopt new teaching styles and strategies and encourages staff to adopt new teaching styles and strategies that promote student-centred learning and blended learning (see 4.2.2.2 ‘changes in teaching strategies’). This can be linked to institutional support offered to academics; they receive teaching styles workshops that promote new teaching and learning styles (see 4.2.1.2 Institutional Support). The College also invests in new technological solutions that promote the adoption of new teaching styles. It is true, however, that claiming that academics at Omega College fully adopted a student-centred approach is not accurate. Empirical data shows that academics perceptions of the system played a role in shaping their usage (see 4.2.1.7 Perceived Challenges in VLE Usage 4.2.1.7.3 Academic’s Perceptions). It is worth saying that, due to the novelty of system mandating, it is too early to conclude whether academic-centred learning is still the dominant style in the college.

5.3.2.1.3 New Context-Based Factors

The study yielded changes in teaching practices that are new and bound to the examined research context. The use of VLE at Omega College changed the

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relationship between academics and students in terms of transparency. The Findings chapter (see 4.2.2.5 Relationship with Students) showed that the exploitation of different VLE features, such as grades breakdown, plagiarism detection systems, materials uploads and group discussions increased transparency between academics and students, which is a change bound to the current research context.

This type of change is due to several factors. Firstly, the nature of the college, as a small, elite HEI for girls, where students had the right to question academics, which meant that VLE was used for accountability purposes (see 4.2.1.1.8 Holding Students More Accountable) and to improve transparency (see 4.2.2.5.1 More Transparency). By providing grades breakdown for student throughout the semester, students were well informed regarding their progress, and when the course syllabus was uploaded at the beginning of the semester, academics and students were clear on their obligations and duties, and therefore transparency was improved.

Moreover, the general culture plays a role in forming relationships between academics and students. In the Arab world in general and in Saudi Arabia in particular, academics at universities are powerful entities. Academics are arguably more powerful at public HEIs; nevertheless academics at private HEIs are still considered powerful. Omega College, as a private elite HEI where students have the right to question their academics, might experience conflicts. By exploiting VLE features to improve transparency, this problem was mitigated and the nature of the relationship between academics and students changed.

Findings from this study suggested that academics active involvement with system implementation and exploitation involved a change of practice at Omega College. Such a change resulted directly from perceived barriers, perceived challenges and institutional pressure, represented by making system use mandatory for all academics (see 4.2.1.3 Institutional Pressure4.2.1.6 Perceived Barriers in VLE usage4.2.1.7 Perceived Challenges in VLE Usage), and such a change is tied to the current research context.

In conclusion, changes in teaching practices resulted from VLE deployment that corroborate the current body of knowledge which indicates that changes in teaching

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styles & strategies, though with no change in actual teaching delivery inside classroom. This is due to the fact that Omega College maintains the traditional classroom setting. Moreover, the system, although promoted as a constructivist tool, depends on the way it is used, which ultimately determines whether it is behaviourist or constructivist.

Changes that contradict the literature are that the behaviourist style is the dominant one in HEIs around the world. Omega College was trying to promote student-centred learning. It is too early to conclude that behaviourism is still the dominant approach.

Changes in teaching practices that are novel and context-based in this study included the change in relationship between academics and students in terms of transparency and active involvement with VLE implementation and exploitation.

The next section will discuss the contribution of this study to the existing body of knowledge.

5.4 Contributions

The current study contributes to the knowledge in pedagogy and the use of ICT in HE. The study filled a gap that was found in the literature with the lack of empirical studies that investigate academics use of ICT solutions in general and VLE in particular. In Saudi Arabia in particular, as far as the researcher could ascertain, there are a lack of studies on VLE use in education in general, and HE in particular.

Contributions made by this study can be categorised into theoretical and practical. Theoretical contribution add to the body of knowledge in the field of ICT in education, while practical contribution provides solutions that could enhance academics' practice and impacts other stakeholders such as students, decision makers and system's vendors.

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5.4.1 Theoretical Contributions

The current study is a qualitative context-based study. It is well known at these types of studies that results are not to be generalized due to the special nature of the research context which influences the study. Nevertheless, due to the fact that academics' perceptions are generally lacking in the literature, context-based studies like this add to the existing body of knowledge.

The current study provided a model that describes the factors that led to changes in teaching practices due to VLE deployment. This model explains the relationship between factors of change in teaching practices and the actual changes that occurred due to the presence to these factors, and is similar to the concept map presented at the findings chapter. Figure 42 presents the model proposed in this study, which is similar to the main concept map presented in chapter 4 (see Figure 16 Main Concept Map).

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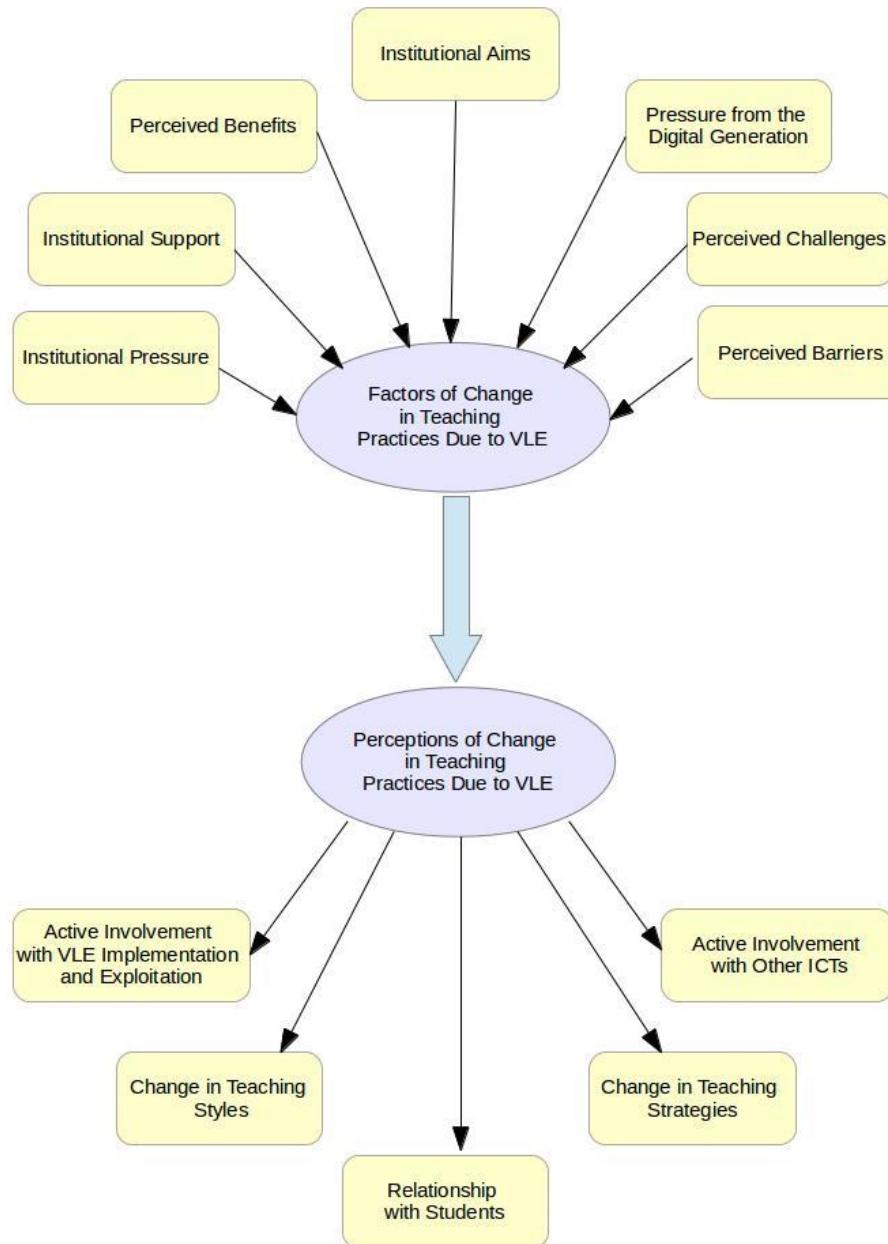


Figure 42 Proposed Model

The model proposed that, as a result of VLE deployment, in order for changes in teaching practices from academics perspectives to occur, certain factors needed be

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presented, such as perceived benefits; institutional aims, support & pressure; pressure from the digital generation; perceived challenges and perceived barriers,, all of which directly influenced and led to changes in teaching styles & strategies; changes in relationship with students; active involvement with VLE implementation and exploitation and active involvement with other ICTs.

It is a fact that the proposed model is context-based; nevertheless it can be used at similar institutions. Moreover, it can be exploited in comparative studies, and extended, based on the context.

In terms of perceived benefits, the study discovered a form of system usage that was not mentioned previously in the literature; **the usage of the VLE as an accountability tool.**

The use of the system to generate evidence and hold either students or academics accountable for their actions was novel in this study. It is true, however, as mentioned previously, that this form of use is context-based, given the size and nature of the college; nevertheless this form of use could open the door for more research in improvised use of the system and whether this use would be acceptable and beneficial in other types of HEIs or not. It could be argued that such use is controversial and that the sole purpose of VLE should be teaching and learning support, not monitoring users and their actions on the system., Nevertheless, this use was supported and exploited by both academics and upper management.

This is a theoretical contribution to the existing body of knowledge and can be added to existing usage mainly for teaching and learning processes (see (Abdelmalak & Trespalacios, 2013) (Akar, Ozturk, Tuncer, & Wiethoff, 2004) (Arenas-Gaitán, Ramírez-Correa, & Rondán-Cataluña, 2011) (Awidi, 2008) (Jamieson, 2009) (Pedroâ, 2001) (Pulford, 2011) (Sanchez-Franco, 2010) (Selwyn, 2007) (Wang, 2009) (Westera, 2004) (YI & Hwang, 2003)).

The study has also shown that, at Omega College the **VLE was used during crises times to ensure continuity of learning.** It is true that most HEIs around the world like other types of businesses have disaster recovery and business continuity plans, nevertheless this use is unique and context-based. The crisis it went through was due to legislation; they attempted to use VLE and Whatsapp groups to connect with

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students and provide teaching materials, so the use of VLE as a business continuity tool in a traditional HEI, based on attendance, is unique and worth further investigation. More research is needed to assess whether VLE is ready to serve teaching and learning through crises and whether the currently available tools are sufficient to ensure continuity of teaching and learning, bearing in mind that the major method for teaching delivery is face-to face lecturing. Moreover, the model extracted from empirical data stated that, in order for changes to occur in teaching practices after deployment of VLE, there needed to be a set of factors that drive these changes. As has been mentioned, this model is contextual; nevertheless it is worth further investigation in other similar HEIs.

The empirical study indicates that challenges and barriers, such as system's interface, the general learning culture, perceptions of College policies and culture and an implementation deficit are factors that influenced changes in teaching practices, such as active involvement with VLE implementation & exploitation and active involvement with other ICTs. These types of challenges and barriers are novel in this study. They can be linked to the proposed model, which suggests that factors of changes need to be present for actual changes in practice to occur.

Empirical data suggests that academics facing challenges with the system become actively involved with it in terms of suggesting more training and demanding more features be provided.

This active involvement can be linked to institutional pressure. The college, in an attempt to better utilize the VLE system and make a return on investment, made system use mandatory (see 4.2.1.2 Institutional Support).

This relationship between system mandate and active involvement is unique in this study. It can be suggested that, by making system use mandatory for academics in HEIs, academics became actively involved with it.

One of the changes in practices that emerged from the study was change in relationships between academics and students through increased transparency (see 4.2.2.5 Relationship with Students). At Omega College, several VLE features were used to increase transparency, such as grades breakdown, materials and syllabus upload, plagiarism detection system and groups. Such changes in practice

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that resulted from VLE system use is novel. This contributes to the existing body of knowledge by providing a new use for the system. It is true that such use is tied to the current research context and is influenced by general culture; academics at Arab states in general and in Saudi Arabia in particular are powerful entities; transparency in term of providing students with detailed information and justification for all teaching and grading aspects can be an issue in such a culture. The use of system features helped to mitigate the implications of these issues. Nevertheless, such uses offer opportunities for more research in similar contexts or comparative studies.

The proposed model presented findings from the study that both corroborated and contradicted the literature, in addition to new context based findings. The next model will stress on new context based findings in both main categories; factors of change in teaching practices and actual resulted changes. This model aims to summarize theoretical contributions for the current study.

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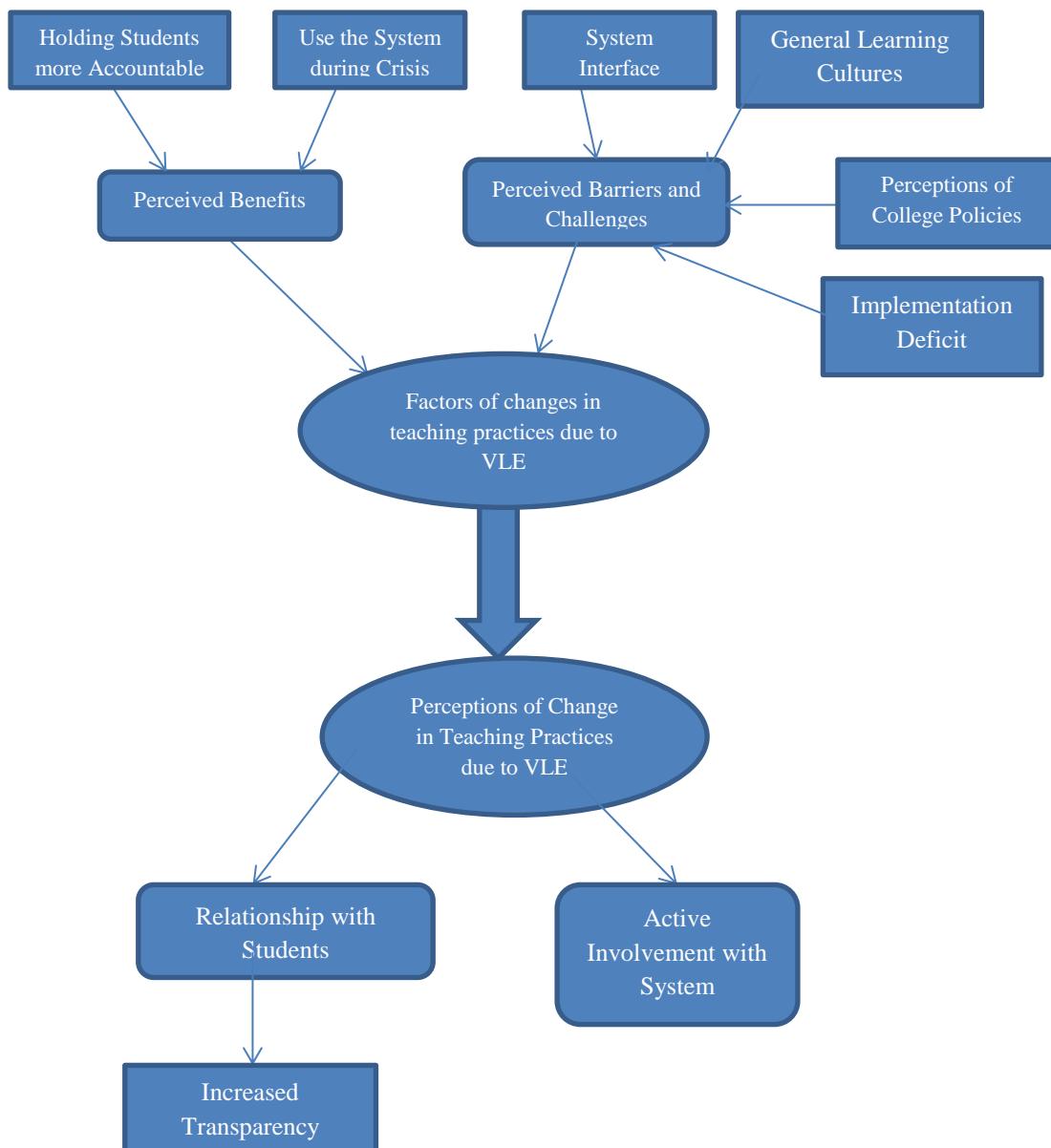


Figure 43 Contributions Model

In addition, the study as described suggested direct relationship between system's challenges & barriers and academics active involvement with the system, such relationship is novel and tied to the current study (Figure 44)

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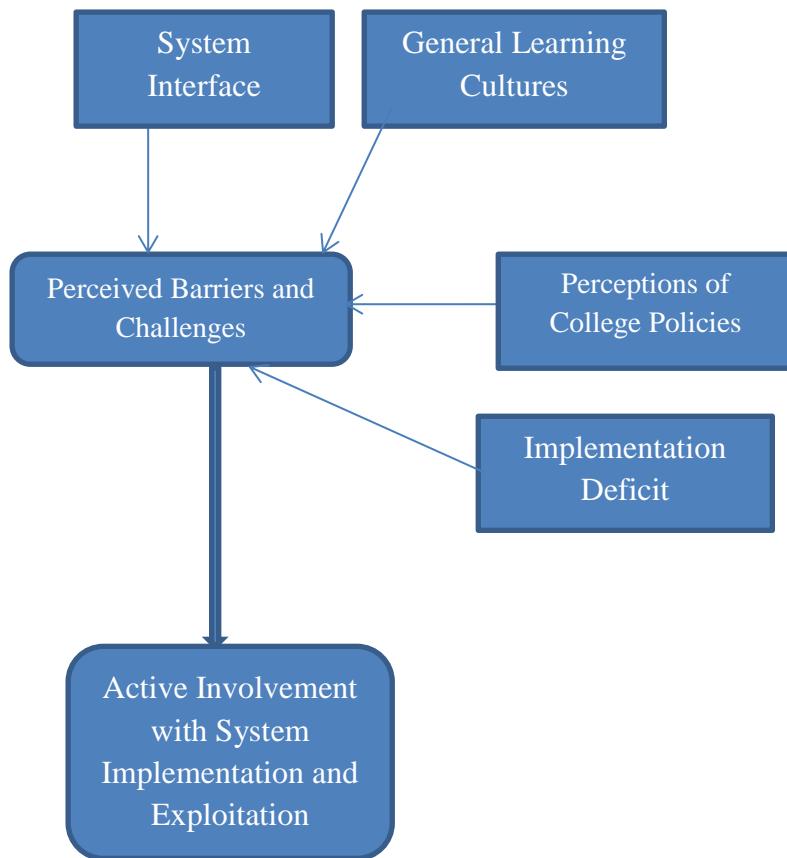


Figure 44 Relationship Between Perceived Barriers and Active Involvement

Moreover, the study found out that benefit such as holding students more accountable is directly connected with changing relationship with students to be more transparent, and such benefit, as mentioned, is novel to this study

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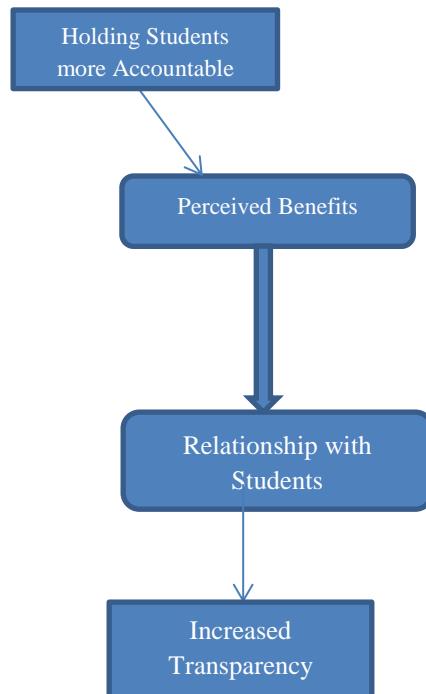


Figure 45 Relationship between Perceived Benefits and change in Relationship with Students

The contributions in this section are additions to the existing body of knowledge. The next sub-section discusses its practical contributions for different stakeholders at Omega College.

5.4.2 Practical Contributions

This study investigated the changes in teaching practices which resulted from the deployment of VLE from the academics' perspectives. Nevertheless, the study identified several stakeholders who might be informed by its findings, such as academics, students, upper management, IT personnel and VLE system vendors. How different stakeholders can be informed by the findings will be explained.

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5.4.2.1 *Implications for Academics regarding Teaching Practices*

Academics were the main stakeholders in this study. They used the system to upload teaching and learning materials, and upload grades, syllabus and assignments. These features were the mandatory ones, on which they were evaluated for their yearly performance.

The academics also used several features that were not mandatory in order to achieve perceived benefits, such as communication enhancement and to hold students accountable for their actions (4.2.1.1 Perceived Benefits). Features such as announcements were among the features most used by academics and it helped them communicate with their students and hold them accountable for whatever was posted on the VLE. Accountability was achieved through the use of a Students Activity monitoring feature, where academics can access log data that monitor a student's interaction with the system.

The use of log data to hold students accountable for their actions is considered a theoretical contribution (see 5.4.1 Theoretical Contributions); such a use is novel and is bound by the context. It is due to the nature of the college, its culture and small size. The fact that it is an elite higher education institution makes such use of the system valid and beneficial to them, though contextual.

Limiting the usage of log data to accountability purposes means the college missed on opportunities that this data highlights.

The use of activity monitoring tools has received attention from scholars in recent years, and the concept has been presented differently in the literature (see (Agudo-Peregrina, Iglesias-Pradas, Conde-González, & Hernández-García, 2014) (Ali, Asadia, Gašević, Jovanović, & Hatalaa, 2013) (Ali, Hatala, Gasevic, & Jovanović, 2012) (Gómez-Aguilar, Hernández-García, García-Peñalvo, & Therón, 2015) (Macfadyen & Dawson, 2010)). Activity monitoring tools provided by packaged VLE systems are referred to in the literature as learning data analysis, most popularly known as learning analytics (Agudo-Peregrina, Iglesias-Pradas, Conde-González, & Hernández-García, 2014). They can be defined as “*the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which*

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it occurs" (Ferguson, 2012, as cited in Agudo-Peregrina, Iglesias-Pradas, Conde-González, & Hernández-García, 2014).

Learning analytics primarily focus on the analysis of data automatically captured from VLEs in an attempt to study student behaviour (Phillips et al., 2012, as cited in Agudo-Peregrina, Iglesias-Pradas, Conde-González, & Hernández-García, 2014).

According to Gómez-Aguilar, Hernández-García, García-Peñalvo, & Therón (2015)

"The increasing involvement of students, the pervasiveness of information and communication technologies (ICTs) and the potential benefits derived from direct observation of the learning process have led to the current state of affairs where technology may be used to monitor and analyze learning experiences in real-time, which in turn makes it possible to infer and take action almost instantly at any stage of the learning process." (P 60).

Moreover, Ali, Hatala, Gasevic, & Jovanović (2012) argue that the ability of educators to access learning analytics about student's completion status of lessons and tests scores should enable them to assess the following: the ability of students to follow and understand the course contents; what students found difficult, and student's social interactions, and the like. Therefore, scholars perceive analytic tools to be a diagnostic tool that should inform academics about early signs of student weaknesses, in an attempt to tackle them early.

Although academics at Omega College reported the use of activity monitoring tools with students, they said they used it mostly for accountability purposes, and occasionally to monitor students' behaviours, such as when they have accessed a certain material during which time in the day (see 4.2.1.1.8.3 Student activities monitoring). These tools were used for early intervention in case a student was not performing in a manner that would enable her pass the course, as proposed by Gómez-Aguilar et al. (2015). Likewise, academics reported the use of grades breakdown for this purpose, instead of activity monitoring (see 4.2.2.5 Relationship with Students4.2.2.5.1.1 Through Grades Breakdown). This opens the door to more

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opportunities in system utilization. As discussed in the Findings chapter, college's principals were open to opportunities and anticipated system use would improve teaching and learning processes in many aspects (see 4.2.1.4 Institutional Aims 4.2.1.2 Institutional Support).

Achieving a new understanding and usability of a VLE system is one of the aims of the study. And the use of learning analytics is a new use that will positively impact on academics.

5.4.2.2 Implications for Students' Learning Processes

The main users of the VLE system are academics and students. Findings from this study have a direct impact on students. Catering for large classes and for shy students are among the benefits perceived by academics from VLE deployment (see 4.2.1.1.7.2 Catering for Large Classes 4.2.1.1.7.1 Catering for Shy Students). Ensuring the inclusion of different types of students is normally satisfactory for students. Through the exploitation of features such as Discussion Boards, students in large classes have more opportunities to participate. Likewise, students who are shy in class now have a means where they can participate freely, which has a positive impact on the student cohort.

The system is being used as an accountability tool by academic (see 4.2.1.1.8 Holding Students More Accountable). This use has direct implications for students. It elevates their standards by teaching them responsibility, in addition to providing them with a means whereby they can hold their instructors accountable in case of conflicts. This has increased transparency as well (see 4.2.2.5 Relationship with Students).

Moreover, the change in teaching style resulted from the role of academic transforming from information spoon-feeder to learning facilitator, which had a direct impact on students, elevating standards and making them responsible for their own learning, which is important in the current environment, where the emphasis is more on cognitive skills rather than on the amount of information held by students. The VLE plays a role in this transformation, and therefore system deployment has implications for students.

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As was discussed in Implications for Academics (see 5.4.2.1 Implications for Academics regarding Teaching Practices), more usage of learning analytics would be useful to academics. Such use is useful for students as well and will have a positive impact on them. Using learning analysis generated from VLE will aid in tackling issues before they occur, which is appreciated by stakeholders.

5.4.2.3 Implications for College Principals in terms of their ICT Investment Decisions

College principals are responsible for investments in technological solutions. Ensuring satisfactory use is important. Understanding the change of practices resulting from the system deployment might allow them to make informed decisions regarding administrative issues in the system and might guide future investments as well.

Institutional pressures, represented by making the system mandatory aided in achieving 100% use by academics, which, according to College principal, was a positive return on investment. 100% use was considered to be a successful investment.

Perceived system barriers and challenges, such as hatred toward the system and perceptions of college policies and culture might be beneficial for college principals if they are informed by them (see 4.2.1.6 Perceived Barriers in VLE usage 4.2.1.7 Perceived Challenges in VLE Usage). By being informed that a number of academics hate the system, principals would be aware of possible system resistance, and could decide to take precautionary actions, like providing more training, in coordination with IT. And by being informed that a number of academics perceived some college policies as system barriers, they might act and clarify these procedures before they become permanent barriers. They might decide on holding more meetings with academics or send informative emails that clarify problematic issues.

5.4.2.4 Implications for IT Service Providers and their Support Services

The IT department, represented by IT service providers, was responsible for providing technical support to all system users, providing training and workshops and contacting vendors in relation to all after sales services. Understanding

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academics' perceptions of the system in terms of training and technical support needs (see 'perceived barriers and challenges', 'institutional support') will help to bridge the gap in communication between academics and IT.

Referring back to usage barriers and challenges in findings chapter (see 4.2.1.6.4 Perceived Lack of Feature- Specific Training), academics mentioned that they demand feature specific training, and they mentioned that the general training held by IT department is not sufficient. At the same time, IT personnel expressed that they hold training for different features like grade centre, materials sharing and interactive facilities. The lack of communication in this case might lead to resource wasting and increased dissatisfaction among academics.

As has been mentioned, in the research context (see 3.5.1.1.1 Omega College), the college aspires to excellence and the use of ICT solutions to enhance teaching and learning is part of the College's strategic plan. It has been suggested by I8 that the college need to have a staff member or even a centre that is responsible for learning technologies. Appointing a learning technologist might add value and aid in bridging the current gap between academics and IT. Appointing such a person might have a positive impact in terms of communication for both academics and IT.

5.4.2.5 *Implications for System Vendors' After-sales Support*

The VLE system brand was chosen based on its popularity and the fact that it was non-open source (see 4.2.1.4.1.2 System Brand Choice), so after sales service was expected and the IT department was the medium of communication between the college and vendor. Understanding academics perceptions of the system might be helpful for a system vendor. For instance, a number of academics perceived the system to be not fit for purpose, as it was not equipped with math modules (see 'perception of system as not fit for purpose'). Communicating such issues to the vendor might enable new applications of the system catering for specific courses, or it might fix existing problems faced by academics.

To conclude, this study contributed to knowledge both theoretically and practically. Theoretical contributions to the knowledge included the use of the VLE system as an accountability tool; the use of the system for business continuity during crises; perceived barriers and challenges, such as system interface; how general learning

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culture influences changes such as perception of college policies; and that cultural and implementation deficits are factors that influence changes in teaching practice, such as active involvement with VLE implementation & exploitation of other ICTs. Moreover, the relationship with students in term of transparency was a novel use and contributes to the existing body of knowledge.

The study has also yielded practical contributions. Implications of the study for different stakeholders were identified; and the study was found to have practical implications for academics, students, college principals, IT service providers and system vendors.

5.4.3 Response to Research Question

The research attempted to answer the following research question:

What are the perceptions of change on teaching practices resulting from the deployment of VLE at HEIs in Saudi Arabia from academics perceptions?

The research investigated the impact of VLE deployment in an attempt to discover the perceptions of change in teaching practices from academics' perspectives.

Moreover, the research attempted to achieve the following objectives:

- To determine the benefits and facilities offered by use of commercial VLEs, as reported in the literature;
- To determine the benefits and facilities offered by the use of the VLE deployed at the research context;
- To identify the changes and consequences for academics in the following aspects:
 - Teaching strategy;
 - Teaching Styles;
 - Economy of effort;
 - Expected learning behaviours.

Using the design explained in the methodology chapter, the researcher was able to answer the research question.

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Several sets of changes in teaching practices at Omega College due to VLE deployment were identified and explained.

At the end of the Findings chapter, the researcher demonstrated how each factor of change in teaching practices had caused actual changes. The identification of changes itself answered the research question.

By reviewing the literature, which was used to prepared informed interview scripts, the research objectives, which was set to determine the benefits and facilities offered by use of commercial VLEs, as reported in the literature, was achieved. Several benefits were identified, such as improved communications, increased availability; cost effectiveness and catering for large classes (see Chapter 2 Literature Review).

Another objective for the research is to determine the benefits perceived by academics in the research context.

After conducting the study, the findings suggested that one of the factors that shape academics perceptions of change in teaching practices is perceived benefits. Improved communication, paper saving, time saving, holding students more accountable, the use of system during crisis, increased availability and classroom enhancement are empirical system benefits that emerge from data. The identification of such benefits achieves the research objective.

Factors such as perceived benefits, institutional support, aims & pressures and pressure from the current generation have aided in identifying changes and consequences in academics teaching strategies, teaching styles, economy of effort and expected learning behaviours. For instance, the Findings chapter (see Findings, Time saving) shows that the deployment of VLE, represented by the use of a materials upload feature, spare academics the effort of printing and distributing materials, which is considered a better economy of effort. The identification of changes in teaching practices, in addition to exploring how these changes have occurred, based on which factors, are the responses to the research question.

The study has also aimed to establish a new understanding of the usability and practices of VLEs in Saudi HEIs. This aim was achieved; several new system use were discovered such as the use of the system as an accountability tool and as a tool

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that ensure business continuity during crisis. Such types of use, although context based, are transferable. More will be discussed in limitations.

Although this research has achieved its stated objectives, limitations are inevitable, and the next section explains the limitations of the study.

5.4.4 Limitations of the study

The study aimed to investigate the impacts of VLE deployment on teaching in Saudi HEIs. The study was concerned with academics perceptions of change in teaching practices resulted from the deployment of VLE, and given the fact of the large number of HEIs at Saudi Arabia, a case study was chosen. The researcher chose a private higher education institution for girls to conduct the study. The research context is unique from many aspects (see 3.5.1.1.1 Omega College), in addition to the fact that it is a woman-only college in Saudi Arabia. Based on this, generalizing the findings of this study and applying it to all HEIs, especially public HEIs in Saudi Arabia, is a challenge. Private and public HEIs in Saudi Arabia bear generic differences in admission & enrolment, management and leadership styles. And therefore, findings from a study conducted in a private HEI cannot be generalized to public ones.

In fact, generalization in social science research is a challenge, unlike research in the natural sciences. According to Bassey (2001),

“The educational researcher, in common with other social scientists, has the problem that there are many variables and usually little data. In consequence scientist generalisations cannot be made, nor usually probabilistic generalisations. The teacher may give what appears to be the same lesson in exactly the same way in a second classroom, but the outcome of the second lesson may be quite different because some un-noted variables of the setting, or the class, or individuals within the class, are sufficiently different to affect the outcomes. The option of repeating the lesson in a number of other classrooms and giving a probabilistic generalisation is not usually possible.” (P 7)

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To overcome the challenge of generalization in social science research, Bassey (2001) suggested the concept of fuzzy generalization, where the results of a study that took place in another context can be used to predict results but not to determine them.

Another suggestion for overcoming the issue of generalization is to transfer the decision as to whether the results from the study are generalizable or not. According to Dzakiria (2012) “Qualitative researchers should not worry if their research findings are not generalizable. By virtue of the Theory of Relatability, we can resolve this issue and put more focus on the research” (P 46). According to him, where only when one research finding is related to one’s interest, then these findings are generalized to his/her research. It is not the initial researcher that holds the power to determine the extent to which his/her research is generalised to bigger populations.

Despite the fact that the issue of generalization exists in social science research, findings and results from this study could be applicable to similar HEIs in the Kingdom. For example, there is another HEI in Jeddah which is women-only and bears resemblances in management and leadership style to Omega College. Moreover, there are 47 private colleges and universities in the Kingdom, to which findings from this study are applicable. Based on this, generalizing the results on HEIs around the world might not be valid.

However, results from this study can be transferrable. The fact that results are not to be generalized offers the opportunity for more research in the field. Moreover, the proposed model in this study, which describes the relationship between factors of change in teaching practices and the actual change in teaching practices, can be used with other educational technologies as well. This use of the model is applicable, bearing in mind that it is a solution used in teaching and learning processes, therefore it might be applicable to educational technology solutions that are concerned with teaching and learning processes.

The next section, Future Work, will discuss prospective future research that might be undertaken, based on results from this study and from the limitations.

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5.4.5 Future Work

The use of ICT in education has been a fashionable topic in the past decade. The usage of VLE in particular has received, and is still receiving attention from scholars. Research opportunities on ICT usage in education are vast. HEIs, with the fast pace of advancement in technology, is a fertile land for research in general.

The conducted study is context-based, and proposes a model that suggests a particular form of relationship between factors of change in teaching practices and the actual changes which occur.

The proposed model can be tested for applicability and generalizability in other forms of HEIs in Saudi Arabia, like male-only, public or mixed gender. It can also be tested for applicability and generalizability in the Middle East and even worldwide. Moreover, the model can be extended and changed as needed. More factors of change can be added, which might lead to other forms of change in teaching practices being identified, due to VLE deployment in different types of HEIs.

Findings from this study suggest that the system is being used to enhance communication between academics and their students. Studying the type of communication that occurs between academics and students through the use of VLE was beyond the scope of this research. Nevertheless, it offers opportunities for future work in studying what types of communication occur and how they can be enhanced. Such studies are important to maximize the use of educational technologies in general and VLE in particular. Communication is a core part of teaching and learning, and studies that tackle it are important.

The Kingdom of Saudi Arabia has a vision of education as a fertile land for educational research, and bearing in mind the differences between public and private HEIs at the country, findings from this study could be used to conduct comparative studies with other HEIs in Saudi Arabia. For example, the proposed model that explains relationships between factors of change in practices and actual changes can be used to test whether factors that lead to changes in teaching practices due to VLE at Omega College might cause the same changes in teaching practices at public HEIs in Saudi Arabia. Such studies are important and might aid

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in maximizing the benefits of educational technologies and guide future expenditure on ICT.

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Appendices

Appendix 1(Faculty's View)

The screenshot shows the Blackboard Learn™ Preview interface. At the top, there is a header bar with the title "Blackboard Learn™ Preview" and a user profile icon for "Hatoon Qadi". Below the header, there are navigation tabs: "My Preview", "Courses" (which is highlighted in yellow), and "Community". The main content area is titled "Tools". On the left side, there is a sidebar with a collapsed menu titled "Preview Account Sample" containing links for Announcements, Course Info, Course Material, Course Resources, Discussions, Tools, and Help. The main content area displays several tool cards:

- Announcements**: Create and view Course Announcements.
- Lecture Capture**: Experience ground-breaking lecture.
- Blackboard Help for Students**: Open Blackboard Help in a separate window.
- McGraw-Hill Higher Education**: Access and Manage McGraw-Hill products through Blackboard.
- Blogs**: Create and manage blogs for Courses and Course Groups.
- Messages**: Create and send private and secure messages to members.

APPENDICES

The screenshot shows the Blackboard Learn™ Preview interface. At the top, there is a navigation bar with tabs for "My Preview", "Courses" (which is selected), and "Community". On the far right, a user profile for "Hatoon Qadi" is visible. Below the navigation bar, there is a banner image of a beach scene. The main content area is titled "Announcements". It displays two entries: "testing on Jan. 16" posted on Monday, January 16, 2012, and "my own announcement" posted on Friday, January 13, 2012. A sidebar on the left contains a "Preview Account Sample" section with links to "Announcements", "Course Info", "Course Material", "Course Resources", "Discussions", "Tools", and "Help".

The screenshot shows the Blackboard Learn™ Preview interface. At the top, there is a navigation bar with tabs for "My Preview", "Courses" (selected), and "Community". On the far right, a user profile for "Hatoon Qadi" is visible. The main content area is titled "Course Info". It displays two sections: "Faculty Profiles" (with icons for a book and a person) and "Exploration of the Seas" (with an icon of a document). The "Exploration of the Seas" section provides detailed information about the book, including its title, author, ISBN, publisher, and publication date. A sidebar on the left contains a "Preview Account Sample" section with links to "Announcements", "Course Info" (selected), "Course Material", "Course Resources", "Discussions", "Tools", and "Help".

APPENDICES

The screenshot shows the Blackboard Learn™ Preview interface. The top navigation bar includes "Blackboard Learn™ Preview", a user profile for "Hatoon Qadri", and tabs for "My Preview", "Courses" (which is selected), and "Community". On the left, a sidebar for "Preview Account Sample" lists "Announcements", "Course Info", "Course Material" (selected), "Course Resources", "Discussions", "Tools", and "Help". The main content area is titled "Course Material" and contains two sections: "Introduction - Read Me First" and "Study Guide".

Introduction - Read Me First

Welcome to *Introductory Oceanography*. This section of the course is comprised of various resources. This section will contain the following resources:

- Objectives
- Lessons
- Key Terms
- Suggested Reading
- Web Resources

All of your assignments, handouts, and chapter exercises will be integrated within the folder(s). After reviewing the material, please be sure to complete and submit your responses by the specified date.

[Mark Reviewed](#)

Study Guide

This wiki will serve as your study guide for the course final. Each student should post a response for each chapter. Be sure to check the other students' work so that you are studying the information for the final.

The screenshot shows the Blackboard Learn™ Preview interface. The top navigation bar includes "Blackboard Learn™ Preview", a user profile for "Hatoon Qadri", and tabs for "My Preview", "Courses" (selected), and "Community". On the left, a sidebar for "Preview Account Sample" lists "Announcements", "Course Info", "Course Material", "Course Resources" (selected), "Discussions", "Tools", and "Help". The main content area is titled "Course Resources" and contains four sections: "General Links for Oceanography", "Introductory Oceanography Glossary", "Plugins, Players and Viewers", and "Photoshop Tutorial".

General Links for Oceanography

These general links will help give you an overview of the variety of topics that are covered throughout the textbook.

Introductory Oceanography Glossary

Important terms are defined here. If there are any terms undefined that you find yourself looking up, please [send me an email](#) and we'll update this master document.

Plugins, Players and Viewers

Download these common Plugins, Players and Viewer applications to access certain files found throughout the course.

Photoshop Tutorial

APPENDICES

Blackboard Learn™ Preview

Hatoon Qadi

My Preview Courses Community

Discussion Board

Preview Account Sample

- Announcements
- Course Info
- Course Material
- Course Resources
- Discussions
- Tools
- Help

Discussion Board

Forums are made up of individual discussion threads that can be organized around a particular subject or topic. You can use forums to organize discussions. [More Help](#)

Forum	Description	Total Posts
Class Discussions: Issues in Oceanography	This forum is for discussion of general oceanography issues and current events. Contributions to this forum count towards your class participation grade.	8
Introduction to Oceanography: Graded Discussions	This discussion room (forum) is where we will be holding our class discussions on topics pertaining to our study of Oceanography. New discussion threads will be added for each chapter. Relevant links can be found in the corresponding Chapter Resources content areas as well as here in the discussion forum.	5
[Optional] Extra Credit Discussions	This Extra Credit Discussion is an opportunity to add an additional 10 points to your cumulative score for the course. Participation is optional and will not be counted against your grade.	4

Blackboard Learn™ Preview

Hatoon Qadi

My Preview Courses Community

Tools

Preview Account Sample

- Announcements
- Course Info
- Course Material
- Course Resources
- Discussions
- Tools
- Help

Tools

Announcements  Create and view Course Announcements.

Lecture Capture  Experience ground-breaking lecture capture.

Blackboard Help for Students  Open Blackboard Help in a separate window.

McGraw-Hill Higher Education  Access and Manage McGraw-Hill products directly from Blackboard.

Blogs  Create and manage blogs for Courses and Course Groups.

Messages  Create and send private and secure messages to course members.

Calendar  View and manage course calendar events.

My Grades  View and manage course grades.

Appendix 2 (Student's View)

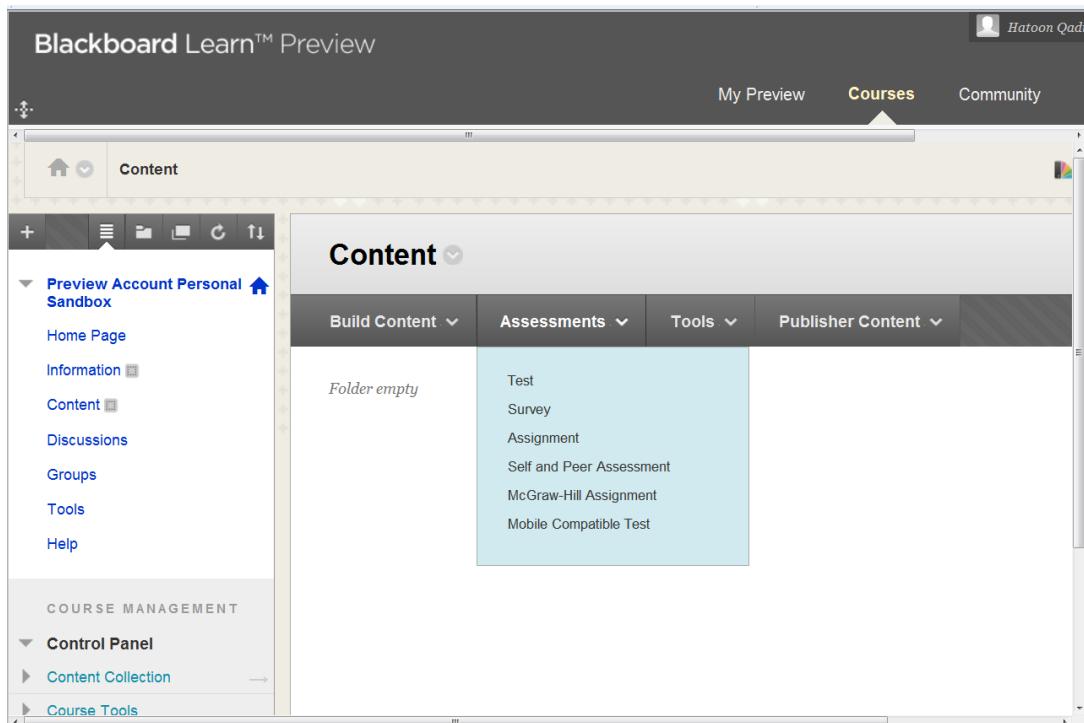
Blackboard Learn™ Preview

The screenshot shows the Blackboard Learn™ Preview interface. At the top, there is a navigation bar with links for "My Preview", "Courses" (which is currently selected), and "Community". The main content area is titled "Home Page". On the left, a sidebar menu includes "Preview Account Personal Sandbox" (with "Home Page" selected), "Information", "Content", "Discussions", "Groups", "Tools", and "Help". Under "COURSE MANAGEMENT", it shows "Control Panel" (with "Content Collection" selected) and "Course Tools". The main content area contains sections for "My Announcements" (no announcements), "My Tasks" (no tasks due), and "To Do" (edit notification settings, what's past due, all items 0). A "Customize" button is located in the top right corner.

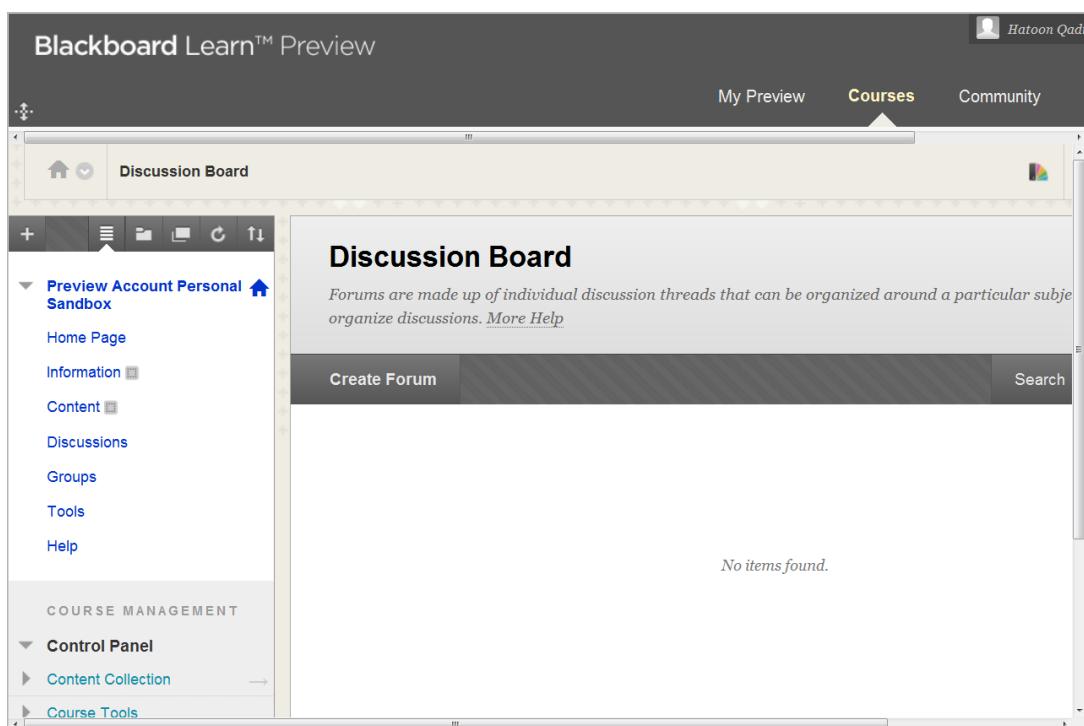
Blackboard Learn™ Preview

The screenshot shows the Blackboard Learn™ Preview interface, specifically the "Information" page. At the top, there is a navigation bar with links for "My Preview", "Courses" (selected), and "Community". The main content area is titled "Information". On the left, a sidebar menu includes "Preview Account Personal Sandbox" (with "Information" selected), "Content", "Discussions", "Groups", "Tools", and "Help". Under "COURSE MANAGEMENT", it shows "Control Panel" (with "Content Collection" selected) and "Course Tools". The main content area contains a "Build Content" menu with options like "Create" (Item, File, Pearson's MyLab / Mastering, Audio, Image, Video, Web Link) and "New Page" (Content Folder, Module Page, Blank Page, Mashups, Flickr Photo, SlideShare Presentation, YouTube Video, NBC Content). Learning Module, Lesson Plan, and Syllabus are also listed. A "Customize" button is located in the top right corner.

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The screenshot shows the Blackboard Learn™ Preview interface. The top navigation bar includes "My Preview", "Courses" (which is selected), and "Community". The left sidebar lists "Preview Account Personal Sandbox" with links for "Home Page", "Information", "Content" (selected), "Discussions", "Groups", "Tools", and "Help". Under "COURSE MANAGEMENT", there are "Control Panel" sections for "Content Collection" and "Course Tools". The main content area is titled "Content" and contains tabs for "Build Content", "Assessments", "Tools", and "Publisher Content". A message states "Folder empty". To the right of this are links for "Test", "Survey", "Assignment", "Self and Peer Assessment", "McGraw-Hill Assignment", and "Mobile Compatible Test".

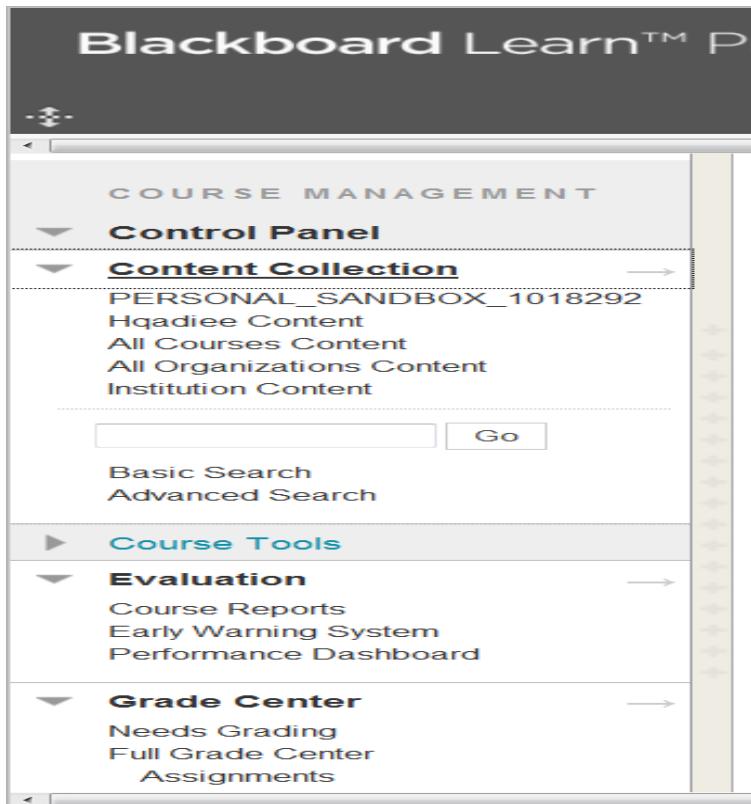


The screenshot shows the Blackboard Learn™ Preview interface. The top navigation bar includes "My Preview", "Courses" (selected), and "Community". The left sidebar lists "Preview Account Personal Sandbox" with links for "Home Page", "Information", "Content" (selected), "Discussions" (highlighted in blue), "Groups", "Tools", and "Help". Under "COURSE MANAGEMENT", there are "Control Panel" sections for "Content Collection" and "Course Tools". The main content area is titled "Discussion Board" and contains a message: "Forums are made up of individual discussion threads that can be organized around a particular subject or topic. You can use forums to organize discussions." Below this is a "Create Forum" button and a "Search" button. A message at the bottom right says "No items found."

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The screenshot shows the Blackboard Learn™ Preview interface. At the top, there is a navigation bar with tabs for "My Preview", "Courses" (which is selected), and "Community". On the far right, a user profile for "Hatoon Qadi" is visible. The main content area is titled "Groups". A descriptive text block explains that the Groups tool allows Instructors to organize Students into Groups of any size. It mentions collaboration tools, self-enrollment, manual enrollment, and more help. Below this, there are two buttons: "Create Single Group" and "Create Group Set". A message "No items found." is displayed at the bottom of the content area. The left sidebar contains a "Groups" section under "Preview Account Personal Sandbox" and a "Control Panel" section with "Content Collection" and "Course Tools".

The screenshot shows the Blackboard Learn™ Preview interface. At the top, there is a navigation bar with tabs for "My Preview", "Courses" (selected), and "Community". On the far right, a user profile for "Hatoon Qadi" is visible. The main content area is titled "Tools". It lists several tools with icons and descriptions: "Announcements" (Create and view Course Announcements), "Journals" (Create and manage journals that can be used in a group for the purposes of ...), "Blackboard Help for Students" (Open Blackboard Help in a separate window), "Lecture Capture" (Experience ground-breaking lecture ...), "Blogs" (Create and manage blogs for Courses and Course Groups), and "Calendar" (Access and Manage McGraw-Hill products through Blackboard). The left sidebar contains sections for "Groups", "Tools", and "Help" under "Preview Account Personal Sandbox", and "Content Collection", "Course Tools", "Evaluation", and "Grade Center" under "Control Panel".



Appendix 3 (codes definitions and quotes tables)

A100 X ✓ f For LY, her teaching was affected in term of she might reduce what she teach inside class giving the fact a discussion is going on on VLE,

A	B	C	D	E	F	G
Main Theme	Definition	sub-themes	definition	sub-themes	definition	Remarks
5 6 7 8 9 10 11 12	Main Theme Perceived Benefits of VLE Benefits from the VLE system deployed at the College as perceived by the academics	Accountability	The use of VLE to hold users accountable of their actions and to provide evidence in case of complaints or conflicts	Student's activities monitoring	Use the feature in blackboard that allows academic to monitor when students have accessed a certain material or the last time she logged into the system	This is a trendy theme and has been referred to using different terms (documentation, saving academics back, proof in case of conflicts), it can be related to the fact that the College is private and small in size which gives students power to question academics unlike large public universities
		Less office Visit	The availability of resources on the VLE resulted in less office visits for academics	transparency	Information regarding course and students grades are all available through the system which yields to less office visit. Some academics also post grades comments to increase transparency and decrease unnecessary office visits	
		Paper Saving	Uploading course materials on the VLE resulted in less printing			
		Time saving	The VLE system with its different features aided in saving academic's time inside and outside classrooms			
		Availability 24/7				this feature could also be linked to the fact that due to cultural and administration reasons, students are not able to stay at the College after working hours, which makes this feature an important one for collaborative work
		The digital generation students	Using technology to create an attractive environment for the digital generation students			
		Efficient utilization of class time	Eliminate unwanted questions and discussions and replacing them by VLE			
		Materials documentation	VLE as a storage tool			

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Main Theme	Subthemes	Quotes	Subthemes
Perceived Benefits of VLE	Communication	<p>"I told you it facilitated the communication between me and the students"</p> <p>"all my communication with students, having a chat room with a set of time, any questions students feel they need to post I encourage them that they have to do it through blackboard,"</p> <p>"if you are talking about mode of teaching I wouldn't say blackboard is now changing the mode of teaching, it is changing the mode of communication to a certain limit, but its not changing the modes of teaching yet,"</p> <p>"from the beginning of the course "look every communication between</p>	<p>Through announcements</p> <p>"mmmmm it is as I said if they want to reach me by email and didn't know my email address, they can always contact me from there, ammm communication between me and them is for example posting announcements, so they can see it and mmm yeah"</p> <p>Through discussion boards</p> <p>, so when we started the blackboard and I started this tool of communicating with them at least (laugh) I started to ah see that (if we don't find her in office we can access her over the blackboard) (which means) which is at least (which means) I can say improved but the can find me, they can find me so this is one way of ahhhh (which means) that's how I can see students they can (which means) Miss we can find you specially during the period before final exams and before mid terms you know students they want to ask lots of questions and so so I ask them post it on the blackboard and I usually respond to students within 24 hours of posting any any issues (which means) so at least they find the answer for something that mmm that they are struggling with</p>

Appendix 4 (List of Themes)

- Factors of Change in Practice due to VLE
 - Perceived Benefits
 - Improved communication
 - Through learning materials upload
 - Through announcements
 - Through discussion board
 - Paper saving
 - Time saving
 - Increased availability
 - Availability of learning materials 24/7
 - Access to peers
 - Access to teacher
 - Ability to collaborate with other institutions
 - Enriching classroom experience
 - Cater for shy students
 - Cater for large classes
 - Holding students more accountable
 - Materials and assignments upload
 - Announcements
 - Students activities monitoring
 - Institutional support
 - System's training and workshops
 - Teaching styles workshops
 - Academic rewards and acknowledgments

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- Availability of reliable technical support
- Institutional pressure
 - System usage become mandatory and included in academic's performance measure
 - Departmental pressure
- Peer pressure
 - Colleague pressure
 - Pressure from appointed champion
- Institutional aims
 - Strategy
 - Focus on student-centred learning#
 - Enforcing the adoption and use of technologies
 - IT investment
 - Vision
 - System brand choice
 - Preparing students for global experience
- Pressure from digital generation
- Perceived barriers in VLE usage
 - System interface
 - Implementation deficit
 - Lack of communication
 - Perception of college's policies and culture
 - Lack of feature specific training
 - Specialist special requirements
- Technical problems
 - System not working or having feature specific problem

- VLE not integrated with other systems
- Internet connection problems
- Perceived challenges in VLE usage
 - General learning culture
 - Academic's perception
 - Hatred toward the system
 - Perception of system as not fit for purposes
 - Age / generational related perceptions
 - Lack of students interest
- Perceptions of change in teaching practices due to VLE
 - Change in teaching styles
 - No change in teaching delivery inside class
 - Teachers becoming facilitators rather than information spoon-feeders
 - Changes in teaching strategies
 - Promoting blended learning
 - Motivating more active learning styles
 - More discussions inside class as part of students-centred learning approach
 - Provide instant feedback to students
 - Active Involvement with VLE implementation and exploitation
 - Awareness of training needs
 - Feature specific training
 - Training for smaller groups
 - One-to-one training

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- Advanced training for interested academics
- Awareness of specific complimentary VLE features
 - Instant messaging services
 - Link the system to SIS
- Awareness of the need for specific support and R&D
- Relationship with students
 - More transparency
 - Through grade breakdown
 - Through plagiarism detection
 - Through course materials and syllabus posting
 - Through groups
 - Changes in the nature of office visit
 - Better communication
 - One-to-one communication
 - One-to-many communication
 - Increased students privacy

Appendix 5 (Academics Interview Script)

Before we start, I will again brief the participant about the project and will reassure her confidentiality and her right to withdraw, I will then precede.

“Hi X and thank you for agreeing into participating on my research. As I have mentioned in the information sheet, I am doing my PhD at the University of Sheffield Information School and I am part of the Information System research group. I assume that you have read the information sheet and signed the consent form. I am reassuring you that your name and identity won’t be revealed to anyone and you reserve the right to withdraw from the research without any negative consequences, is there any other thing you need to know before we start?”

Questions:

Ice breaking

1. How many years have you been teaching at the College?
2. What courses do you teach?
3. Do you know when the College started using blackboard? If no why if yes how do you know?
4. In general, what is your experience with technology in both teaching and in personal life?
5. How do you feel about using technology? Do you think its comfortable?
Why

I will then move on and ask questions about VLE concept from their perception, their teaching style with VLE, and teaching strategy.

Concept

6. Do you know what do we mean by Virtual Learning Environment (VLE)?
 - If yes tell me more what do you know and from where you get your knowledge?
 - If not tell what do you think it might mean? And why did you see it in that way?

7. Do you use the VLE system deployed at the College (I mean the blackboard)?
 - If yes tell me why and how do you use it?
 - If no tell me why?

- Do you think your students learning was affected by the adoption of VLE?
 - If yes, how do you think this happened?
 - If no why do you think that?
 - Is there anything you want to add on this point?

8. Do you think VLE is an enabler or barrier for better teaching? Why?
 - *follow up question based on the answer*
 - Trigger (you mean it restricted your teaching in a sense or other?)

9. Beside the VLE, do you use any other educational tool?
 - What is it and why are you using it?
 - If no, why are you not using IT in education?
 - if VLE does not exist, would you try and use another tool?

Appendix 6 (Principles Interview Scripts)

Before we start, I will again brief the participant about the project and will reassure her confidentiality and her right to withdraw, I will then precede.

“Hi X and thank you for agreeing into participating on my research. As I have mentioned in the information sheet, I am doing my PhD at the University of Sheffield Information School and I am part of the Information System research group. I assume that you have read the information sheet and signed the consent form. I am reassuring you that your name and identity won’t be revealed to anyone and you reserve the right to withdraw from the research without any negative consequences, is there any other thing you need to know before we start?”

Questions:

Ice breaking

1. How many years have you been teaching at the College?
2. Beside your position as a principle, do you teach?
3. What courses do you teach?
4. Do you know when the College started using blackboard? If no why if yes how do you know?
5. In general, what is your experience with technology in both teaching and in personal life?
6. How do you feel about using technology? Do you think its comfortable?
Why

Then I will ask questions about system purchase and how it was introduced

7. When was the system first purchased? How was it introduced to faculty?
Follow up question (Was it targeted to specific departments?)

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10. How is the College encouraging faculty to use the system?

I will then move on and ask questions about VLE concept from their perception, their teaching style with VLE, and teaching strategy. The same as faculty

Concept

11. Do you know what do we mean by Virtual Learning Environment (VLE)?

- If yes tell me more what do you know and from where you get your knowledge?
- If not tell what do you think it might mean? And why did you see it in that way?

12. Do you use the VLE system deployed at the College (I mean the blackboard)?

- If yes tell me why and how do you use it?
- If no tell me why?

- Do you think your students learning was affected by the adoption of VLE?
 - If yes, how do you think this happened?

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- If no why do you think that?
- Is there anything you want to add on this point?

13. Do you think VLE is an enabler or barrier for better teaching? Why?

- What specifically did it enable? In what sense?
- Trigger (you mean it restricted your teaching in a sense or other?)

14. Beside the VLE, do you use any other educational tool?

- What is it and why are you using it?

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- If no, why are you not using IT in education?
- If VLE does not exist, would you try and use another tool?

Appendix 7 (Information Sheet)

The University of Sheffield. Information School	<i>The Perceptions of Change in Teaching Practices in Saudi HEIs from Academic's Perspective</i>
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Researchers

Hatoon Kadi

Tel. 07762620463/00966-505648484

Email: lip10hq@sheffield.ac.uk

Purpose of the research

The research is aiming to investigate the impacts of Virtual Learning Environment (VLE) (Blackboard system) systems deployment on teaching in Saudi HEIs. The study will investigate how academics are interacting with the system in an attempt to explore if the traditional modes of teaching were affected by the deployment of such systems. The study will also investigate if the current level of usage justifies the investments made by the College's Board of Trustees. Such investigation will provide the College with benchmark that will guide them in how to maximize the benefits of educational technologies in a way that justify investments and guides future expenditures as well. The study also aims into establishing new understanding of the usability and practices of VLEs in Saudi HEIs

Who will be participating?

In this study, which is about the impacts of virtual learning environment systems on teaching in Saudi higher education institutions (Blackboard system), we are inviting academics according to the following criteria:

- Academics who have been using the Blackboard system since it was first introduced in 2008,
- Academics that started using the Blackboard system after it was applied to the whole College and included in the academic's evaluation (from my experience at the College, I understand that the system usage was included as part of the Academic's evaluation starting from the academic year 2010).

Meeting users who have been using the system since it was in the pilot phase and after it was introduced to the whole college and included in the academic's evaluation will help in understanding different motivations for system usage, which will aid in determining how the system is being incorporated in teaching.

The latter is only a criteria and the researcher is pledging that no questions will be asked about academic's evaluation and no information will be obtained regarding it.

What will you be asked to do?

As a participant in this research, the researcher will conduct an interview with you at your convenience either face-to-face or via telephone. The interview will take the duration of approximately 45 minutes and should not exceed 1 hour. Questions asked will be about your experience with the Blackboard system and how you're incorporating it in your teaching. You will also be asked questions about your student's system usage and how your relationship with your student's has been affected by the system.

What are the potential risks of participating?

Participating on this research should not incorporate any risks, your identity will not be disclosed and all data collected will only be used for research purposes.

What data will we collect?

The interview will be audio recorded for transcribing purposes.

What will we do with the data?

Audio recordings will be transcribed and then analysed. After that, all recordings should be deleted and no further use will be made from them. Any further use of the data will be for future research purposes either commercial or academics, and only anonymous transcribed data will be used (in case participants gave their consent for data retention).

Will my participation be confidential?

Your name will be anonymised and your true identity will remain anonymous throughout the research.

What will happen to the results of the research project?

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The results of the study will be included in the researcher PhD thesis which will be publicly available. The researcher will also send a copy of the thesis to Wisdom College.

I confirm that I have read and understand the description of the research project, and that I have had an opportunity to ask questions about the project.

I understand that my participation is voluntary and that I am free to withdraw at any time without any negative consequences.

I understand that I may decline to answer any particular question or questions, or to do any of the activities. If I stop participating at all time, all of my data will be purged.

I understand that my responses will be kept strictly confidential, that my name or identity will not be linked to any research materials, and that I will not be identified or identifiable in any report or reports that result from the research.

I give permission for the research team members to have access to my anonymised responses.

I give permission for the research team to re-use my data for future research as specified above.

I agree to take part in the research project as described above.

Participant Name (Please print)

Participant Signature

Researcher Name (Please print)

Researcher Signature

Date

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Note: If you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, please contact Dr. Angela Lin, Research Ethics Coordinator, Information School, The University of Sheffield (ischool_ethics@sheffield.ac.uk), or to the University Registrar and Secretary.

Appendix 8 (Ethical Approval)

Date: 15th February 2013

TO: Hatoon Kadi

The Information School Research Ethics Panel has examined the following application:

Title: The Impacts of Virtual Learning Environment Systems on Teaching in Saudi Higher Education Institutions: a case from Wisdom College for women in Jeddah

Submitted by: Hatoon Kadi

And found the proposed research involving human participants to be in accordance with the University of Sheffield's policies and procedures, which include the University's '*Financial Regulations*', '*Good Research Practice Standards*' and the '*Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue*' (Ethics Policy).

This letter is the official record of ethics approval by the School, and should accompany any formal requests for evidence of research ethics approval.

Effective Date: 15th February 2013



Dr Angela Lin
Research Ethics Coordinator

Appendix 9 (Concept Maps Sample)

