UNDERSTANDING LEADERSHIP ROLE OF UNIVERSITY MANAGEMENT AND GOVERNANCE IN PROMOTING INNOVATION AND USE OF LEARNING MANAGEMENT SYSTEMS IN GHANAIAN UNIVERSITIES

by

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I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the thesis to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at University of South Africa (UNISA) or another qualification or at any other higher education institution.

_____   24th November, 2021
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DEDICATION

I dedicate this thesis to my My God Almighty, My Husband Michael Akyeampong who encouraged me to pursue my doctoral degree and our Beloved children, Kodwo and Ewurama Akyeampong

ABSTRACT

The integration of e-learning technologies into course delivery has given rise to the adoption of Learning Management Systems (LMS's) which has become a critical component of the educational process in the "new normal" of world order after the outbreak of the COVID-19 pandemic. Although leadership is supposed to promote positive consequences in the workplace, universities appear to be conditioned by traditional processes and thus find it difficult to accept change, thereby preventing the adoption of innovation. Additionally, in the pursuit of innovation, the internal culture of a strong institution may also be a significant preventive factor. The Study explored the leadership role of university management and governance in promoting innovation and use of learning management systems in universities in Ghana. Purposive random sampling was used to select two hundred and ten (210) respondents from the accessible population based on their relevance with regards to the phenomenon under investigation.

Mixed methods of the sequential explanatory design were the research design for the study. This method approach was used to obtain different but complementary data on the topic to best address the research problem. To link the quantitative and qualitative findings, quantitative and qualitative data were gathered and analysed separately before being combined into one overall interpretation. Combining the quantitative and qualitative research paradigms with the other theoretical perspectives helped to elucidate the issues concerning the use of Learning Management Systems and how their successful implementation is dependent on the leadership role played by both management and governance in universities.

The study reveals that, as a result of the growing student population and the Covid-19 pandemic, the use of Learning Management Systems to facilitate teaching and learning has become critical in the expansion of universities. The findings show that implementing innovation in universities requires management-level policy, clear objectives, strategy, leadership and commitment, funding, and priorities that meet user needs.

KEY TERMS

Innovation, Leadership, Innovation in Universities, Learning Management System, Management, Governance, COVID-19, E-learning

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ACRONYMS AND ABBREVIATIONS

GTEC: Ghana Tertiary Education Commission

ICT: İnformation and Communication Technology

IT: İnformation Technology

LMS: Learning Management System

NCTE: National Commission for Tertiary Education

SRL: Self-Regulated Learning

TAM: Technology Acceptance Mode

QUAN: Quantitative

QUAL: Qualitative

UNISA: University of South Africa

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CHAPTER ONE
INTRODUCTION

1.1 ORGANISATION OF THE CHAPTER

Chapter one provides the introduction and background of the study. This is followed by the problem statement, the purpose of the study, the significance of the study, primary research question and sub-questions. It further discusses the theoretical framework underpinning the study and its relevance. In addition, the philosophical perspective and the paradigm of research, data collection and analysis are presented. The parameters of the study are adequately explained, the definition of terms is operationalized and the limitations of the study are outlined. Chapter one is concluded with an overview and a brief description of the organisation of the dissertation.

1.2. BACKGROUND TO THE STUDY

In the last decade, globalization, the changing nature of employment, growth of the student population and technological innovation has generated pressing demands for creative universities. In addition, the requirement for Higher Educational Institutions (Universities) to adopt innovative strategies to remain relevant (Gasper & Marbic, 2015) is revealed by knowledge-driven teaching methods, university financial needs and pedagogical awareness. Broadly, universities in Ghana fall within the domain of HEI's in Ghana. HEI's in Ghana function as the centre of human intellectual development as well as the basic producers of knowledge, which are translated into valuable goods and services. The sector in Ghana has recorded tremendous growth in the past decade due to major policy reforms. The World Bank Collection of Development Indicator revealed that tertiary enrolment in Ghana was 15.69% in 2018, compared with an average increase of 6.3% in sub-Saharan Africa, enrolment increased by 8% throughout ten years (UNESCO Institute for Statistics, 2018). However, as enrolment increases, universities need to stand out and offer the kind of education that will make graduates relevant to society. Similarly, as technologies become more instrumental in education delivery, universities should inevitably be innovative and creative to satisfy the demands of societies in addition to staying globally relevant.

Unequivocally, the outbreak of the COVID-19 pandemic has changed the way people throughout the world receive an education (UN, 2020). Currently, the old concept of formal education which takes place in a single physical location is becoming increasingly obsolete in the new normal of world order. Contemporary learners are dissatisfied with the conventional stand-and-deliver method of education delivery, which mandates attendance times, learning venues, and modalities of involvement, leading to the adoption and implementation of learning management systems in institutions throughout the world. Also, the face-to-face teaching methods are unsafe due to the need for social distancing and the increase in the student population. Educational institutions have embraced an interactive online learning Management system that facilitates the provision of education, distance participation of students, and course management (OECD,2020). Without converging in a physical area, the LMS allows institutions to implement technologies that help satisfy the demands of a new generation of information consumers.

Learning Management Systems (LMS) has become a critical component of the educational process as a result of the outbreak of the COVID-19 pandemic which has plunged the world into uncertain times. During the 2020 COVID-19 pandemic, LMS became a critical component of any instructional cycle, as the conditions made it unsafe to proceed with the traditional in-person and personal instructive engagements. According to a recent report by the World Economic Forum, 2020, educational institutions are willing to spend up to $350 billion by 2025 on instructional technology. Learning management systems, video conferencing, virtual tutoring, are examples of such tools. LMS are software solutions that help universities to manage the administration, centralized repository of learning materials relevant to the course, monitoring, and reporting of online courses and training programmemes. It functions as a virtual classroom, allowing instructors to engage with their students and undertake online learning activities. Dias, Hadjileontiadou, Diniz, & Hadjileontiadis (2017) and Ghazal, Al-Samarraie, & Aldowah (2018) submit that the two most valuable aspects of LMS are efficiency and flexibility. Though LMS provides numerous opportunities and benefits to education stakeholders all over the world, there is a need to investigate the issues and challenges associated with its deployment, acceptance, use, and management in developing countries, particularly in African countries where colleges and universities

were completely shut down due to the COVID-19 pandemic Jacob, Abigeal, & Lydia (2020). Many research studies into e-learning adoption in universities have evolved as a result of this. However, studies on the role of universities leadership in promoting the use of LMS, on the other hand, are scarce in the literature, particularly in developing countries. Nonetheless, according to Dei (2018), university management in Ghana has built good justification for adopting e-learning as a new educational delivery model and has shown commitment by investing in developing the technological infrastructure required for e-learning.

Moreover, recent developments reveal that innovation requires considerable resources, a network of support from the organisational hierarchy, planned focus and a culture that nurtures creativity. Bel (2010) has described innovation as an action taken to generate an idea that can be transformed into a new product or service that make consumers better off. It includes finding better and improved ways of doing things and new ways to look at problems. Innovation in Universities is essential if such institutions are to remain relevant in this contemporary society. However, challenges like divergent ideological positions and contradictory motives (Mahmood, 2016) between institutional governing bodies and senior administrators in the universities seem to undermine innovation in this sector. And these are the challenges facing Universities in Ghana which must be seriously considered more than ever to ensure effective and immediate transformation.

It should be stressed that various challenges have been faced by higher education, including shifts in labour demand, economic transition, and a decline in government funding (Mathew, 2010). However, Swanger (2016) argues that the structure of traditional university governance can generate resistance to innovation. Also, the concept of shared governance which allows members to share their opinions and make their voices heard in the decision-making process can slow down innovation on the university campus. Minor changes may come easily while major changes are much more of a challenge. Nonetheless, the real challenge is the urgency with which educational leaders respond to these developments that emerge from the government and the private sectors. To remain relevant in present-day society, universities, including those in Ghana, must maintain a balance between their identities and respond favourably to both the external

and internal pressures. Tierney and Lanford (2016), support the view that innovative solutions are necessary for universities to meet government demands, adjust their programmemes to suit the aspirations of the public and ultimately translate to addressing societal challenges.

Strategically, universities need to find innovative ways of enhancing creativity, developing programmemes, delivering on key student outcomes, promoting diversity and improving processes and efficiency. The current challenges of higher education cannot be overcome without strong institutional leadership and policy reforms that promote innovation. Researchers posit that one of the competencies required to promote innovation is effective leadership that can promote organisational innovation and knowledge sharing among employees to drive growth (Li, Bhutto, Nasiri, Shaikh, & Samo, 2017). Also, the concept of innovation in HEI's remains topical due to the continuous call on Universities to develop new ideas and practices to meet the growing demands of stakeholders. Managing innovation requires developing a plan and strategy, creating organisational structures and culture that will facilitate the implementation of ideas and increase sustainability with a long-lasting effect on productivity. An innovative style of leadership generates new ideas, a vision and a plan that contributes to the creation of an institutional structure and an entrepreneurial culture that encourages growth and development. The topic of innovative leadership, despite this basic observation, is largely unexplored in Ghanaian universities.

Although the study is on understanding the role of leadership in promoting innovation in universities in Ghana, however, governance has a major role in the effectiveness of leadership. If governance is undermined, leadership is made ineffective. A brief discussion on governance in a University setting is therefore also appropriate. In a typical University operation, governance comprises decision-making structures and processes, development and execution of policies to guide the work of universities (Hladchenko, Antonowicz & de Boer, 2017; Kwiek, 2015; Shattock, 2013). Good governance involves sound leadership that focuses on academic freedom, encourage participatory governance, promote accountability and strive for academic excellence. It is a critical step to bridge the gap between aspiration and performance. Furthermore, education leadership must beless risk-averse, especially during this world of disruptive change. It is not a choice to keep

to traditions, innovation and acceptance of change are now prerequisites for survival, hence the interest in the study.

1.3. RATIONALE FOR THE STUDY

The impact of leadership on an organisation's ability to innovate is a contemporary topic for innovation ((Dunne, Aaaron, McDowell, Urban, & Geho, 2016) and there is a great deal of evidence that leadership is fundamental (Denti & Hemlin, 2012). Furthermore, leadership promotes innovation in general (Domínguez-Escrig, Mallén, Lapiedra, & Chiva, 2018b), while innovation can be applied to a variety of contexts in higher education, this research focuses on innovations related to higher education delivery modes and how higher education leadership supports or adapts to these innovations. The motivation for this study is that whereas most industries are becoming increasingly digital, higher education has remained remarkably resistant to digital transformation. Although some higher education programmemes provide virtual learning opportunities, the majority of programmemes are still offered in person. Online learning platforms are also falling behind and need to be upgraded to be more accessible. The changing educational environment has created a need for leadership that promotes innovation. Because institutional leadership and strategy are critical forces that either support or inhibit innovation and link the institution around a sense of purpose, there is the need for an educational environment that generates a demand for leadership that encourages innovation.

Through launching and pushing innovation projects, implementing innovation initiatives, and overcoming obstacles, leadership plays a critical role in boosting organisational creativity. According to Bel (2010), different leadership styles are known to have a significant influence on employee loyalty, motivation and commitment, which influences the culture for innovation management. In light of this, the research aims to understand the role of leadership in developing an organisational culture that promotes innovation in universities in Ghana. Research in this area is necessary for the development of theory and policy that guides practice. Besides, the research findings contribute to a deep knowledge of leadership and innovation, and measures the university leadership can take to increase innovation performance. Further, due to the rapid

evolution and adoption of digital technology in the post-COVID-19 era, it is worth contributing to the most recent research in the field hence the study.

1.4. THE PROBLEM STATEMENT

Today's university educational leader is confronted with the challenge of the rapid rise in enrollment, reduced government funding, enhanced emphasis on employable skills, demand for greater accountability by stakeholders and dealing with complex issues daily (Mathew 2010). Also, the integration of technology in higher education following the onset of the COVID-19 pandemic has taken on a whole new significance with universities in Ghana being forced to increase their technical infrastructure for teaching and administrative purposes. According to research, educational processes are digitally being shaped by the outbreak of the pandemic and university leaders are critical players in the establishment of digital culture: thus they must build relationships with a diverse group of stakeholders and focus on facilitating collaborative processes in challenging conditions while addressing important ethical issues (Kruse, 2020).

The pressures on higher education demand that universities innovate and adopt strategies to manage the challenges to survive. However, breaking new ground may not necessarily offer appropriate solutions, as they are prone to failure unless academic leaders embrace the idea of new visions, strengths, strategies and strategic objectives. Even though the pressure has grown over the last two decades, it has been incredibly difficult for many institutions to embrace innovation.

Government demand for higher education efficiency and the conditions of the new normal calls for proactive innovative institutional frameworks and innovative teaching methods (Goddard, 2012), however, according to Tellis (2013), universities appear to be conditioned by traditional processes and thus find it difficult to accept change, thereby preventing innovation from being adopted. Additionally, in the pursuit of innovation, the internal culture of a strong institution may also be a significant preventive factor. For instance, it can make it more difficult for universities to shift from their "status quo" to introduce or test radical theories. The same may apply to administrators of universities who may be hesitant to pursue any new management initiatives (APPA, 2018). Fundamentally, the success of innovation in universities is influenced by the leadership

capabilities of institutional governing bodies and senior managers (Cruz et al., 2016). Notwithstanding this, the level of success of innovation in higher education (Campbell & O'Meara 2014) can be constrained by structural factors such as institutional structures, traditions, attitudes, preferences and practices. Despite this axiomatic reality, Ghana seems to have under-researched how the leadership skills of institutional governing bodies contribute to innovation universities. In addition, it appears that in the COVID-19 era, there is a dearth of information about the role of leadership in supporting the implementation of Learning Management Systems (LMS) in universities. The research aims to understand this and make clear recommendations to address this shortcoming.

1.5. AIM OF THE STUDY

The ultimate goal of the research is to explore the leadership role of university management and governance in promoting innovation and the use of LMSs in Ghanaian universities.

1.6. HYPOTHESES

H1: Extraversion positively influences the use of LMS platforms in universities in Ghana

H2: Neuroticism will influence the use of LMS platforms negatively in universities in Ghana.

H3: Conscientiousness will influence the use of LMS platforms positively in universities in Ghana.

H4: Openness to experience will influence the use of LMS platforms positively in in universities in Ghana.

H5: Personal innovativeness with technology will influence the use of LMS platforms positively in universities Ghana.

1.7. MAIN RESEARCH QUESTION

How does leadership promote innovation and the use of LMS in Ghana's universities?

1.7.1. The Sub-Research Questions

1. What are the current innovations and learning management systems in Ghana's Universities?

2. What is the role of university leadership and governance in driving innovation and the use of LMS in Universities?

3. What are the factors that influence the promotion of innovation and the use of LMSs in Ghana's Universities?

4. How do leadership competencies drive innovation in Universities in Ghana?

5. What are the possible intervention strategies that can be recommended to promote innovation and the use of LMS in Ghana's Universities?

1.7.2. Objectives of the Study

The specific objectives of the study are:

1. To identify the current innovations and learning management systems in Ghana's Universities.

2. To investigate the role of leadership and governance in driving innovation and the use of LMS in Ghana's Universities.

3. To examine the factors that influence the promotion of innovation in Universities in Ghana

4. To examine leadership competencies needed to drive innovation and the use of LMS in Universities in Ghana

5. To suggest strategies that can be used to promote innovation and the use of LMS.

1.8. SIGNIFICANCE OF THE STUDY

The research findings aim to contribute to a deeper understanding of the relationship between leadership and innovation, and what actions management can take to increase innovation performance. Also, the results of the research may broaden the knowledge on the roles of leaders in stimulating the organisation's innovative activity. Moreover, Leadership is a key factor in the promotion of individual, team and organisational innovation and creativity. Research in this field is highly promising to develop intriguing theories and impactful policy implications. In general, a clearer understanding of how to promote, develop and sustain innovation in higher education can be of enormous significance to administrators, decision-makers and governments.

1.9. RESEARCH PHILOSOPHY AND PARADIGM

The philosophical position for this research comes under the epistemology (the study of knowledge) perspective as opined by Creswell (2009). Epistemology is concerned with the investigation of what distinguishes objective assessment from opinion to learn more about a phenomenon of interest and to find a common acceptable knowledge that addresses the facts accordingly. In addition to the epistemological consideration of observable and measurable facts, specific questions, causal explanations and predictions as a contribution to knowledge are used to convey the position of the research.

There are various designs and methods for researching phenomena within social research, and the choice of an acceptable methodology is largely dependent on the research intent and questions being asked. The quantitative and qualitative paradigms, which reflect two fundamental ontological and epistemological extremes regarding the essence of being, its interpretation, and language, are contested as key theoretical domains for exploring and understanding social reality. It is important to choose an approach and strategy that resonates with these to navigate a consistent path to new information. Methodologically, quantitative (survey) and qualitative (interviews) research approaches are applied to obtain objective and comparable data. The basis for justifying the use of mixed-method research methodology has been proposed as pragmatism (Mertens, 2014). The data analysis involves systematically combining data sources with existing literature with the intent to generalize empirical findings (Bryman, 2012).

1.10. THE RESEARCH METHODOLOGY AND DESIGN

Mixed methods of the sequential explanatory design were the research design for the study. Using thematic analysis, the sequential explanatory design combines quantitative (questionnaire survey) and qualitative approaches (semi-structured interviews). The first phase involved the use of a web-based survey to collect quantitative data and statistical data. These surveys contribute to the use of data collection from multimedia data. In the second phase, through individual semi-structured interviews, a qualitative approach was

used to gather document data to help understand why some external and internal variables tested in the first phase could be important predictors of the effect of leadership on innovation in universities. The reason for the mixed approach is that by itself, neither quantitative nor qualitative approaches are adequate. Mixed methods offer greater analysis and stronger outcomes of the issue being examined (Creswell, 2015), so the study used a mixed-method design to provide a deeper understanding of higher education leadership and innovation phenomena.

1.10.1. Sources of Data

1.10.1.1 Instruments of Data Collection

In this mixed-method study interview and survey, methods were used for the collection of qualitative and quantitative data.

1.10.1.2 Questionnaire

A five-point Likert scale questionnaire was developed and used for data collection. Through selecting whether they "strongly disagree" (5), "disagree" (4), "neutral" (3), "agree" (2), and "strongly agree" (1), respondents were allowed to tick their views on statements. the questionnaire was developed based on the principles of the conceptual framework adopted for the research.

1.10.1.3 Interview

The face-to-face interview approach was used to collect qualitative data. The qualitative data helped to interpret quantitative findings that require more clarification and to select the qualitative research participants deliberately.

Open-ended interviews were used to solicit qualitative data from the participants of the study. Interviews allow study respondents to express their views, beliefs and feelings regarding a phenomenon. This helped the researcher to obtain a comprehensive and detailed account of the role of leadership and governance on innovation in universities in Ghana.

1.11 DATA ANALYSIS

Data from primary and secondary sources were collected, analysed and presented using statistical software. The researcher confirmed that secondary data can be sourced from existing open-source data repositories, universities, and government and industry associations.

1.11.1 Method of Quantitative Data Analysis

The Statistical Package for the Social Sciences (SPSS) was used to analyse quantitative data using frequency tables, basic percentages, central tendency and dispersion measurements.

1.11.2 Method of Qualitative Data Analysis

The analyses were carried out using qualitative data analysis techniques and a computer-assisted qualitative data analysis software programmeme (NVivo). The computer-assisted qualitative data analysis software (CAQDAS) assisted the researcher in obtaining an accurate and transparent analysis of the results.

1.12 DELIMITATION OF THE STUDY

The research delimitations include:

1. The study does cover all universities in Ghana.
2. The researcher limited this study to only public universities.
3. The three institutions were purposively chosen to cover location, areas of focus and speciality.
4. The study was limited to the adoption and use of Learning Management Systems in Ghanian universities.
5. The study was delimited by the survey's use of only closed-ended Likert scale responses rather than adding open-ended responses.
6. The responses of participants expressed is limited to their personal experiences.

1.13 POPULATION OF THE STUDY

The study population can be defined as a complete set of elements (people or objects) who share some common characteristic defined by the researcher's sampling criteria. The target population, which includes all the 15 Public Universities in Ghana, is the entire

group of people or objects to which the researcher wishes to generalize the study findings, whereas the accessible population is the portion of the population to which the researcher has reasonable access and may include a subset of the target population. The three accessible universities that were used for the study are the University of Professional Studies, Accra (UPSA) public university, University of Energy and Natural Resources (UENR) and the University of Ghana, Legon.

1.13.1. Sample Size for the Study

Purposive sampling was used to select participants and respondents from top management positions, deans, heads of departments, lecturers and student leaders because of their experience and the role they play in bringing about innovation in universities in Ghana. It is possible to describe the sample size for the study by selecting the research participants that are representative of the entire study population (Sekaran & Bougie, 2010). Furthermore, the sample size is a sub-group that has the same characteristics as the target population for a scientific analysis to be performed. The study used Yamane formula to select a sample size of 210 participants. This sample size was divided among three institutions in equal proportion to ensure even distribution and collection of data.

1.14 TRUSTWORTHINESS AND TRANSFERABILITY, AND VALIDITY AND RELIABILITY OF THE DATA

To determine the validity and reliability of the questionnaire, a pilot test was conducted on a sample with the necessary information relevant to the study (Dillman, Smyth, & Christian, 2014). To complete the questionnaire, participants from both private and public universities were chosen at random. Cronbach's alpha was used to assess the internal accuracy of questions. Participants were asked to indicate any ambiguity in questions about wording, understandability, completeness, and navigation issues.

1.15 CONCEPTUAL FRAMEWORK FOR THE STUDY

The proposed conceptual framework for the study was developed through a review of relevant literature and existing frameworks.

1.15.2 Leadership Styles Model

The Leadership Styles Model framework explains the impact of different leadership styles on innovation management through the four key dimensions of the "people-means-effect-goals" all the key dimensions are specified with regards to particular leadership Styles. This helps to determine the strategies and actions that leaders should be using to influence innovation performance. This was adapted and used as shown in figure 1.1 below:
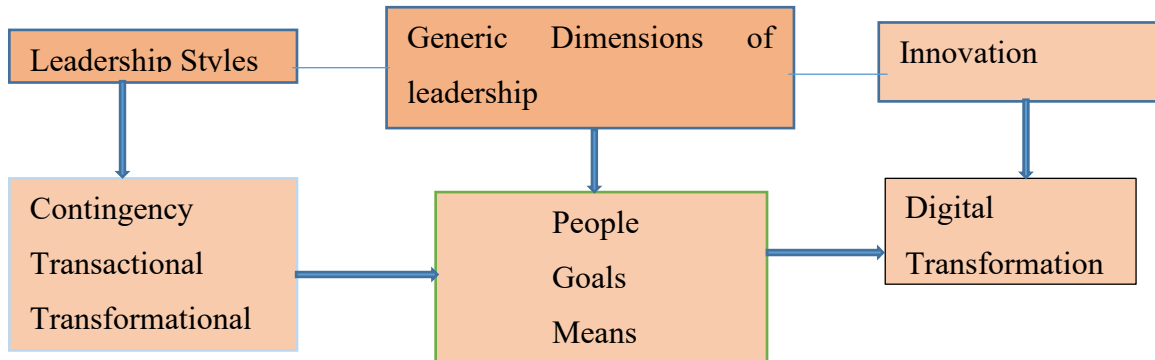
Source: (Researcher's own. Adapted from Kesting, Song & Ulhoi, 2015)

Figure.1.1: Leadership Styles Model

Within universities, innovation rarely occurs by itself. Most of the time, it has to be initiated. Processes, systems, structures, culture and competencies, and networks are all important enablers of innovation. Various types of leadership interact with these factors in various ways. According to research, organisations that take a structured approach to innovation perform better.

It is indeed difficult to comprehend the connection between leadership and innovation. It entails examining leadership styles, their effects on the organisational context, and their connections to various facets of innovation. The following are the basic connections: Leadership has an impact on the organisational setting, which has an impact on innovation. Different but complementary ideas of leadership are supported by the leadership theories adopted. The leader as a motivator and the leader as an architect, with an emphasis on motivating and administrative coordination, are the different types of leadership styles. From an educational perspective, to enhance expertise, commitment, effectiveness, create a conducive teaching and learning environment, application of

various leadership strategies, communicate goals and plans for change the Crue-TIC Model was adapted and used as indicated in Fig. 1.2 below:
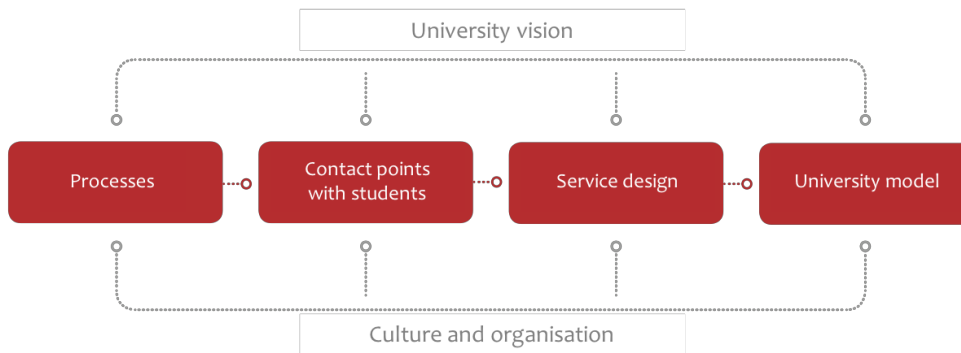
Figure 1.2: Digital transformation model for the university

Source: (Crue-TIC, 2018), adapted and translated from (RocaSalvatella, 2016)

The Digital Transformation at the University (Crue-TIC, 2018) presents an adaptation of the RocaSalvatella Model (RocaSalvatella, 2016) to universities, based on six pillars: vision, processes, contact points, services and products, university model and culture and organisation (figure 1.2). The model suggests two transversal impact axes (the organisation's vision and culture) and four functional axes that affect the entire university and are thus necessary to drive digital transformation (the vision and culture of the organisation) (Llorens, 2018).

1.16 ETHICAL CONSIDERATIONS

The ethical rights of participants and/or respondents in a study are the right to privacy and voluntary participation, anonymity and confidentiality, according to Bryman & Bell (2011) and Easterby-Smith, Thorpe, & Jackson, (2015). This outlines the subsequent ethical considerations that were incorporated in this analysis for quantitative and qualitative studies.

1. Respondents were informed before the interview about the intent of the research, the scope of the data being collected and the application of the data. The respondents were given the chance to pose questions.

2. The personal data of the respondents (names, email addresses, telephone numbers) was used solely for this study and anonymity was preserved. As the persons were not identifiable, it would not be possible to conclude from the responses. No third party had access to the confidential information of the respondents.

3. The researcher cautioned the respondents that the interview was being recorded.

4. Respondents were not pressured to move in any direction or make comments that they do not want to make.

1.17 CLARIFICATION OF CONCEPTS
For the research, the following terminologies have been described as such:

1.17.1 Innovation

 As a novelty that adds value or makes improvements to a product or process, innovation is the discovery and implementation of creative ideas and methods.

1.17.2 Leadership

Leadership is a method of establishing guidance and actively influencing a group of individuals to achieve a shared purpose.

1.17.3 Innovation in Higher Education

Higher education innovation is an effort that promotes progress in higher education in a product or method.

1.17.4 Higher Education Institutions

Higher education institutions are those established institutions that provide post-secondary, tertiary and university education leading to the award of some degrees, diplomas and certificates.

1.17.5 Learning Management System

Learning Management Systems (LMS) are online learning systems that allow you to create, manage, and deliver course content in a digital environment. A well-designed e-learning system facilitate other teaching and learning activities such as quizzes, written examinations, and discussion forum

1.18 LIMITATIONS OF THE STUDY

The study's limitations include:

1. The sample might not be representative of the population, as convenience sampling was used in the quantitative phase of the study.

2. It was not possible to cover a larger number of universities because it would have taken a significant amount of time, resources, and other logistics.

3. There is a high possibility of a non-response error in the quantitative phase of the survey because of the variations between those who respond or those who do not.

4. In the qualitative analysis of data, there is a potential for bias. Due to the interpretative aspect of qualitative research methods.

5. This study's scope is limited because it focuses on the leadership role of university management and governance in promoting innovation and the use of learning management systems in Ghana's universities

6. The findings may not be applicable in other contexts, necessitating a replication of the study.

7. The qualitative approach used for analysis has its limitations due to the small sample size. As a result, the findings may not be generalizable, despite efforts to reduce small sample size errors by recruiting interviewees from diverse backgrounds and demographics.

1.19 STRUCTURE OF THE THESIS

Chapter One provides the introduction and background of the study. This is followed by the problem statement, the purpose of the study, the study's significance, primary research question and sub-questions. It further discusses the theoretical framework underpinning the study and its relevance. Also, the philosophical perspective and paradigm of research, data collection and analysis are presented. The parameters of the study are adequately explained, the definition of terms is operationalized and the limitations of the study are outlined. Chapter one is concluded with an overview and a brief description of the organisation of the dissertation.

The literature review connected with the studies is Chapter Two. The main literature topics and themes are discussed in this chapter, allowing for the definition of the topics to be addressed in the thesis. These themes direct the primary data set. The chapter provides the theoretical structure that was used in this study.

The methodology is presented in the third chapter. This section presents research strategy, research design, population and sample, data collection techniques, pilot study, quantitative data validity and reliability, qualitative data reliability, ethical considerations, and data analysis procedures.

The quantitative and qualitative data analysis techniques are presented in Chapter Four. The mathematical procedures used in data processing the quantitative and qualitative approaches were disussed in this chapter.

Chapter Five explores the results of the quantitative data analysis based on the main statistical methods used, drawing conclusions and making recommendations. Similarly, this section explores a synthesis of key arguments extracted from the evidence and related literature to better explain the theoretical context.

1.20 CHAPTER SUMMARY

This chapter has delineated an overview of the thesis. The following were included: history and introduction to the problem, goals and objectives, hypothesis, research questions, limitations, the research-methodological approach which outlines the theoretical context, the research design, sampling strategies, data collection and analysis

techniques; and a discussion of the study's importance and reliability. The chapter is concluded by the research outline and definition of basic concepts

CHAPTER TWO
REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

This chapter reviewed the literature on the role of university leadership in promoting the use of learning management systems and presents it as a conceptual and theoretical framework for the study. The literature reviewed included the following subheadings: Background to Higher Education in Ghana, Trends in Higher Education Innovation, a General Overview of the Nature of Technology, Innovation in Ghanaian Universities, Defining the LMS Concept, Evolution of LMS Development, LMS implementation in Ghanaian universities: opportunities and challenges. It also discusses the concept of leadership, the role of leadership and governance in the implementation of LMS, the leadership skills/competencies needed to drive innovation in universities, leadership styles and theories, and leadership styles influencing the innovation. In addition, the theories on the use of information technology and the theory of personality traits form the theoretical framework.

2.2 OVERVIEW OF THE EDUCATION SYSTEM IN GHANA

The Republic of Ghana has a land area of 238,533 square kilometres (92,098 sq miles). Ghana, with a population of 30.8 million people, is regarded as among the most stable countries in West Africa since the country's transition to multi-party democracy in 1992. Ghana, formerly known as the Gold Coast, gained independence from Britain in 1957, becoming the first Sub-Saharan nation to have independence.

Figure 2.1: Map of Ghana

Source: UN Cartographic Section

Figure 2.1 depicts a map of Ghana, a country in West Africa, and its neighbouring countries with international borders, which are bordered by the Gulf of Guinea in the south, Cote d'Ivoire (Ivory Coast) in the west, Burkina Faso in the north, and Togo in the east, as well as the region boundaries.

The Structure of Ghana's education system is made up of basic education which lasts eleven years – comprising early childhood education (two years), primary (six years) and junior high school (three years) followed by second cycle education consisting of senior high school grammar and technical education, as well as other post basic skills-development programmemes, including the National Apprenticeship Programmeme and Tertiary level education-comprising diploma programmemes at teacher training institutions and polytechnics, as well as undergraduate programmemes spanning a minimum duration of three years (for diploma programmemes) and four years (for undergraduate degree courses). Master's degree programmemes usually have a duration of one or two years.

Higher education encompasses all post-secondary education, training, and research provided by educational institutions such as universities that have been designated by state authorities as institutions of higher learning. The number of students enrolled in Ghana's public universities (264,994) was much higher than the other universities as of 2019. With 64,870 students, private universities and colleges came in second place (National Commission for Tertiary Education, 2018). Since the late 1990s, conditions in universities have improved significantly, with the number of accredited tertiary education institutions now standing at 191, with 94 public and 97 private institutions (GTEC, 2020). Since independence, the education system has undergone significant policy reforms, interventions, and directions, as well as structural changes to meet modern educational standards. Within the continent, Ghana has a solid reputation for education, even though the sector is facing quality and financial issues. Even though the sector has grown quickly to meet demand, a lack of funding means that tens of thousands of qualified applicants have declined admission each year due to insufficient facilities. The majority of difficulties impacting inaccessibility include a shortage of amenities due to the huge demand for higher education across the country (Kwadwo, Okrah & Adabor, 2010). Unlike other sectors of development, higher education development has lagged behind the pace with the fast demand for higher education due to the high population growth rate. The rising demand for higher education has resulted in higher education admissions corruption and examination malpractices such as the fabrication of entry requirements.

Ghana's higher education reforms were primarily focused on increasing access to close the demand gap. However, this innovation generated increasing competition, notably among Ghana's private tertiary institutions. According to competitive market forces should encourage increased efficiency in the university admission process and improved resource utilization performance. Furthermore, in a market-oriented higher education system, the strength of a student's choice of a university and programmeme is impeded by the chosen institution's admissions standards and the prospective students' educational performances.

The Ghana Tertiary Education Commission was founded by the government and is responsible for the regulation, funding, quality assurance, and delivery of higher

education in Ghana. To this end, the Education Strategic Plan 2010–2020 outlines Ghana's primary focus areas for educational growth. Accessibility, quality, and management are identified as the major policy drivers defining priority interventions in the Strategic Plan. Furthermore, the government has identified science and technology as key areas for improvement, having recognized their relevance over time.

The rapid expansion of Tertiary Education in Ghana in recent years due to the Government of Ghana's effort to widen and allow private sector participation is yielding considerable success. This gives rise to practical and innovative strategies to absorb and promote greater student enrolment and knowledge distribution across geographical boundaries to become a regional education hub.

2.3 TRENDS AND INNOVATION AVAILABLE IN GHANA'S UNIVERSITIES

In recent years, there has been an increase in demand for higher education, as seen by trends toward more diversification among students and institutions, as well as a focus on continuous learning. Higher education has expanded dramatically well overworld, though to varying extents. In 2019, 496,148 students in Ghana were enrolled in tertiary education, an increase of 52,460 students over the previous year. Over the last fifteen years, there has been a growth in tertiary enrolment (Sasu, 2020). One of the causes for this rapid increase has been that, as a society and the economy became more sophisticated, the demand for human resources who had completed higher-level education or training grew. In other words, when the average level of education among a country's population rises, organisations begin to require a higher level of education to achieve social success. Higher education has also altered at a worldwide level, moving away from the elitist approach that was common previously and toward mainstream higher education. Higher education has also altered at a global level, drifting away from the elitist approach that was popular previously and toward universal higher education. However, there are disparities between the situations in developed and emerging economies, as well as within the same countries between the poor and the rich, sexes, and ethnic groupings s (Kwadwo et.al., 2010).

One of Ghana's university novelties is the recent emergence of a knowledge-based society. To ensure that new technologies generated may be implemented in economic

operations, universities must maintain their status as sites for the creation of knowledge and maintain a close relationship with society. There has been a shift from technology-based growth to knowledge-based growth, where knowledge creation has a higher economic value. The application of science and technology, as well as the generation and use of knowledge, have now become the fundamentals of economic growth. The ability to produce and utilize this information, which is critical to economic progress, is in high demand. Universities are expected to contribute to the development of human resource capital for this innovation to engage in this type of knowledge-based economy. Higher education must first and foremost be concerned with the development and spread of technology that is directly related to society's demands to make this achievable. Furthermore, to meet changing needs, instructional material and service delivery methods must be expanded. One example is the implementation of e-learning, which can occur in tandem with technological advancements. On the one hand, society's requirements for knowledge and technology are tremendously diverse. However, the rate of technical innovation has accelerated, and the usable lifespan of specific knowledge and technology has decreased.

The process of creativity and invention will be aided by an innovative higher educational environment that promotes skill and imagination in the creation of new things. Innovation will develop a university environment that permits the university community's resourcefulness to develop, increasing the likelihood of creative outcomes beneficial to students and the community it serves.

Trends in higher education that may compel innovative responses are globalization and the rise of the knowledge economy in the twenty-first century, the astonishing development of technological and computerized systems (Frey & Osborne, 2017), increased demand for tertiary education resulting from high population growth which puts pressure on demand for more access to higher education and consequence of reduced funding and resources. Brannelly et al. (2011) highlight that throughout the world, higher education is becoming an increasingly mass phenomenon. According to Tierney and Lanford (2016), innovative solutions will be necessary for universities to maintain their compact with the government, align their programmemes with public objectives, and find solutions to societal problems. Massive open online courses may be employed to increase

course offerings while also relieving the enrolment pressure on higher education (Jones et al., 2014). The rise in demand for affordable education linked to workforce needs has placed substantial pressure on the regulatory framework for higher education to offer education services to a vastly wider market at much lower costs. Innovative solutions will be necessary for universities to align their programmemes with public objectives, and find solutions to societal problems.

Worldwide, pressures from globalisation; changing supply of and demand for higher education; and changes in higher education funding have been identified as challenges hindering the drive of innovation in Universities. These challenges determine the development and implementation of various innovative practices in a different institutional contest to address them. Higher education leaders must balance the fiscal pressures of running a large organisation influenced by external forces such as rankings and increased competition for students and faculty and internal stresses produced by boards and accrediting agencies who are demanding more transparency, accountability, and tangible evidence of success, are best served by seeking continued innovation in curricular programmemes, delivery mechanisms, support services, and operations. The growing interest in the role of leaders in HEI's is driven by global changes in the sector and the changing landscape of higher education leadership. Contextual shifts have occurred within the Higher Education sector in recent decades, particularly globalisation of the market and internationalization of institutions, development of for-profit private institutions, cutbacks in public funding and increased cross-border academic mobility (Altbach, 2011). Experts have argued that the value of many higher education credentials is no longer worth the cost of tuition, curricula do not match the needs of the workforce, business models that continue to invest in residential education are broken, and contemporary pedagogical methods of instruction are archaic. Hence, in their minds, higher education continues to be an industry ripe for disruption (Tierney & Lanford, 2014).

Revolutionists recommend that innovations be incorporated across at least seven components of traditional educational leadership preparation programmemes, including recruitment and selection procedures, programmeme structure, curriculum, instructional strategies, field experiences, and school-leader induction (Green, 2013). Authors have

shown that innovation is affected by how well change is aligned with the values and norms of the institution and structure that is the way lines of authority, communications, rights and duties of an institution are arranged directly affects the success of innovation within institutions (Hasanefendic et. al., 2017). However, these factors are not sufficient to comprehend the complexity of the phenomena because the causal processes involved at the system, institutional and individual levels are distinct (Jepperson & Meyer 2011). University governance and management structures promote innovation through institutional commitment and establishment of an institution-wide drive for innovation; providing institutional and financial support to innovation; and conducting regular evaluations of the initiatives

Innovation may provisionally disrupt the traditional organisation, system and process of an institution (a process called 'disruptive innovations' which is a process by which a product or service initially takes root at the bottom of a market and eventually moves up-market displacing established competitors (Christensen & Eyring 2011). Weise and Christensen (2014) assert a disruptive innovation first serves the bottom of a given market and has four pronounced characteristics from its competitors (1) simplicity, (2) affordability, (3) convenience, and (4) the ability to provide a product or service to non-consumers who lack an alternative. Moreover, the most troubling aspect of the theory concerns the consistent use of "disruption" as justification by managerial entities who wish to promote questionable organisational policies. Such instances result in conflicts between council members who espouse a more entrepreneurial view of the university and chancellors who may have a culture to respect the process of deliberation facilitated by shared governance. Perhaps, the disruptive innovation theory can help administrators, researchers, and other stakeholders in higher education to potentially gain a deeper understanding of technological advances in today's rapidly changing, globalized environment. Generally, sustainable innovations have had a powerful, positive impact on society and are accepted by individuals within an organisation because the change is incremental. The conclusion to be drawn from the discussion of sustainable and disruptive innovation is that universities need to fully abandon tradition to maintain their relevance but rather make a greater commitment to supporting innovations that can mitigate the challenges currently confronting the higher education sector.

Organisational leaders, particularly those from universities, must be diligent and skilled to successfully initiate and implement change projects. Any institution that does not respond positively to change will inevitably perish in the 21st Century thus forcing all sectors to respond to the new trends by adopting new ideas and processes (Barber, Donnelly, Rizvi, & Summers, 2013). Practically every university now engages in remote and online learning due to the flexibility of instruction offered by the technological explosion. Several studies have proven that 70% of change initiatives fail, with the failure mostly ascribed to leaders' ineffectiveness in implementing change (Baesu & Bejinaru, 2013) and to successfully initiate and manage it. Leaders must understand the change management process and have suitable leadership styles. Four leadership types relevant to the transformation process include transactional, transformational, and change-oriented laissez-faire.

2.4 DEFINING THE CONCEPT OF LEARNING MANAGEMENT SYSTEMS (LMS) IN HIGHER EDUCATION

In recent times, there has been a vast increase in the acceptance and use of various Learning Management Systems (LMS) in tertiary institutions, as colleges and universities in developed and developing countries have successfully deployed various online education platforms that allow students to take their lectures online, collaborate, and have access to a learning resource. As a result of the epidemic, learning management systems have probably become the single most significant software system for institutions. Most technophobic stakeholders at uni

versities have been compelled to go online as a result of the pandemic, leading those who are already familiar with LMS portals to examine their different capabilities and demand more.

LMS is a Moodle developed to enable educators, administrators, and learners with a single, reliable, secure, and integrated system to build personalized learning environments, according to Krouska et al. (2017). It includes a variety of standard and unique features to aid in the teaching and learning process. Furthermore, community-sourced applications can be used to increase system capabilities. LMSs provide not only online and in-person instruction, but also extensive behavioural research on system users

(Firat, 2016). Learning management systems, according to Phillipo and Krongard (2012), are a key enabler of many current and future educational initiatives, including personalized learning, learner-centred decision making, staff productivity, and curriculum development in support of Common Core State Standards. Chaubey and Bhattacharya (2015) list a range of characteristics that a learning management system (LMS) should have to be relevant in today's fast-paced technological society. They identified Interactivity, the ability to connect learning objectives with material, instruction, assessment, progress monitoring, and integration with existing systems are all crucial elements that an LMS should have. Because any security breach will expose the entire system to intrusion, the researchers believe that the security of an LMS should not be neglected, and also advocate a powerful security feature as the seventh characteristic.

In addition, Claar, Dias, and Shields (2014) have stated that well-organized higher educational institutions that want to use an LMS should carefully select one that can accomplish six essential tasks. These six main features of LMSs, according to them are: Use self-service and self-guided services (automated administration); quickly assemble and deliver learning content; consolidate training activities on a sustainable web-based platform; support portability and standards; and personalize content and enable knowledge reuse.

2.4.1 Evolution of Learning Management Systems

Technology has transformed the way education is delivered worldwide (Brady & Pradhan, 2020). During the last decade, LMS utilization in higher education has been an important component of information technology that has enhanced both teaching and learning. The introduction of LMSs since the early 1990s has changed the traditional concept of formal learning, taking place in a single physical location to the adoption of technologies that facilitate the provision of courses over long distances. Research indicates some of the core activities that enhance effective academic work in traditional teaching and learning environments of higher education, such as group discussion, lecture presentation, class test, assignment submission, feedback, and grading, have recently been discovered to be easily implemented in a Virtual Learning Environment, (VLE). Moodle, WebCT, or Blackboard are examples of tools that can help to improve

academic work (Walker, 2015). universities are also implementing web-based learning systems to gain a competitive advantage, due to increased enrolment, faster delivery of teaching and learning materials, faster assessment of students' performance, among many other benefits that are propelling web-based learning's global adoption (Maina & Nzuki, 2015).

In Ghana and other developing countries, student enrolment has increased at an exponential rate, resulting in a mismatch between students and educational facilities and resources. Many tertiary institutions have responded by adopting and implementing educational models such as the learning management system to admit applicants who satisfy the admission requirements (Tagoe & Abakah, 2014). Several terminologies have been used to describe online learning and the technologies that have emerged to support it. Historically LMS has been referred to and used interchangeably as with Electronic Learning Systems (ELS), Virtual Learning Environments (VLE), Curriculum Development Systems (CDS), Content Management Systems (CMS), Instructional Improvement Systems (IIS), Knowledge Management Systems (KMS), Instructional Management Systems (IMS), Integrated Learning Systems (ILS), Course Management Systems (CMS), and Collaborative Learning Environments (CLE).

The importance of LMS in 21st-century higher education delivery is undeniable. The most extensively used LMS on the African continent are Blackboard, Sakai, KEWL, and Moodle. Similarly, the Sakai platform is used by the University of Ghana for teaching and learning, while the Moodle platform is used by the Kwame Nkrumah University of Science and Technology, the University of Education, Winneba, and the University of Professional Studies, Accra.

Even though LMSs are not a fully new concept, they have gained widespread popularity and have undergone rapid evolution. This progression began in the late twentieth century with the arrival of the computer and the internet (Oxagile, 2016). According to Oxagile (2016), LMSs were utilized for classroom registration and administration in the 1970s. Computer-Based CD Training became popular in the 1980s. SoftArc's FirstClass was the first true LMS, developed in the 1990s when LMSs were employed as Web-learning and on-demand learning systems. The Open University of the United Kingdom continues to

use First Class to deliver online learning across Europe. In 1997, CourseInfo launched the Interactive Learning Network, the first LMS with a relational MySQL database. The first open-source LMS, MOODLE, was released in 2002 and is still the most popular open-source LMS available online. Many modern LMSs use the Shareable Content Object Reference Model (SCORM), which was established in 2004. Multimedia was first featured in LMSs in 2005, with online video becoming increasingly essential. With the introduction of VirtualOnDemand in the same year, NACON Consulting enabled consumers to learn using only a web browser. Eucalyptus was the first cloud-based open-source learning management system (LMS) when it was released in 2008.

Learning management systems (LMSs) made it possible to learn at any time and from any location in the 2010s. Modern SaaS LMS was created in 2012 to take advantage of cloud-based technology and applications that allowed for transmission to mobile devices over WiFi. In 2013, SCORM's next generation, the Experience API (or Tin Can API), was published as version 1.0.0. Because of its systemic design, an LMS differs from other computer-based education systems. An LMS is made up of various components that work together to provide a system that manages all parts of the learning experience (Watson & Watson, 2007). As a result, Szabo and Flesher (2002) define an LMS as a system that allows for the delivery and management of instructional content, the identification and assessment of individual and organisational learning or training goals, the tracking of progress toward those goals, and the collection and presentation of data for the overall supervision of an organisation's learning process. Content management, course writing, course registration, course administration, skills gap analysis, tracking, reporting, and communication and collaboration features are all available through an LMS (Gottipati & Shankararaman, 2016). According to Gottipati and Shankararaman (2016), most LMSs are primarily focused on faculty or management, with little attention paid to students, and so may have limited functionality for managing competency tracking in connection to student growth. They went on to say that while tests are useful for tracking students' development, they are time-consuming; hence, students' self-assessment of competency can be a more practical way to evaluate progress.

2.5   LMS   IMPLEMENTATION   IN   GHANAIAN   UNIVERSITIES: OPPORTUNITIES AND CHALLENGES

Many public and private institutions in Ghana, including schools and universities, were closed down in March 2020 at the onset of the global Covid-19 pandemic (WHO, 2020). To combat the spread of the coronavirus pandemic, the traditional education structure, which normally stresses an interactive classroom environment, immediately converted to online education delivery by adopting learning management systems. Following this, the education sector, particularly universities, has experienced an exponential rise in the adoption of e-learning platforms to help universities manage, deliver, plan, and track the learning and teaching process since the start of the 2020/2021 academic year. Many academic institutions now have Learning Management Systems (LMS) in place to provide comprehensive online learning solutions and to use the functionalities of these systems to improve learning practices. Furthermore, learning management systems are used to administer and manage online courses, track student engagements, generate learning materials, offer information to students, monitor their engagement, and evaluate their performance, according to Alenezi (2018). Technology-enhanced learning can be utilized to enable remote access, to be a part of the learning environment, or it can be combined within the classrooms, which is known as blended learning. The LMS is used by the majority of Ghanaian universities for the goals stated. The usage of learning management systems (LMSs) provide opportunities and benefits to educational institutions all over the world (Kats,2010). According to Pappas (2016), a well-implemented LMS provides students with personalized learning opportunities, limitless access to e-Learning materials, interactive learning experiences, learner progress tracking, and cost-effectiveness. In general, interactive and flexible learning refers to activities that improve learning possibilities and strive to develop self-directed and independent learners, with instructors facilitating the process.

LMS users include students who use the system for educational purposes, instructors who use the system to monitor, teach, and evaluate students, and administrators who assist all users to keep the system running smoothly. LMS can provide these stakeholders with the information for informed planning, policymaking, and evaluation through tools of monitoring, communication and decision making. LMS is considered a management information system, which is a collection of systems that assist managers in making better decisions (Thaku, 2014). As shown in Figure 2.2, the LMS implementation process

has six major components. The organisation's requirements are specified via planning. From the user's perspective, the plan should cover all of the actions required to implement the LMS. Understanding data and processes, as well as the system's data fields, functionality, and capacities, are all part of the configuration process. While integration refers to the ability to work with a variety of systems, such as those that store user accounts and profiles. When switching from one LMS to another, course and data migration occur. The data and courses from your legacy system must be transferred to the new LMS. It's a time-consuming task that necessitates following a specific procedure and fixing any incompatibilities between the legacy system's data and courses and the new LMSs. Conducting user acceptability testing is the final significant step before launching your LMS. Testing the LMS guarantees that the system is completely functional and that the configuration, courses, and data are all present and correct. Go live with the LMS once all end-to-end tests have been conducted and all defects have been fixed (Foreman,2013).
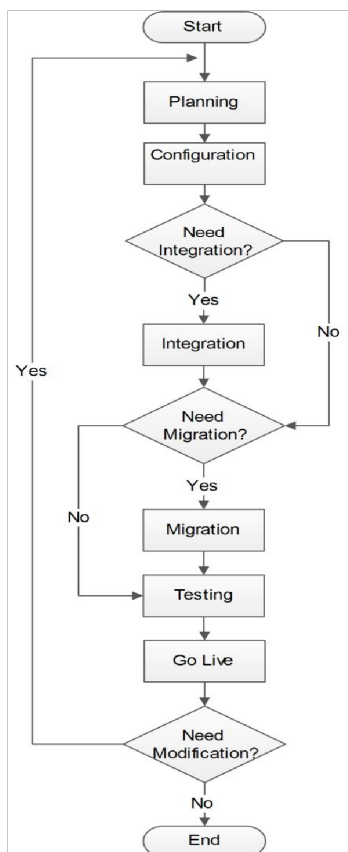
Figure 2.2: Modified Six Steps to Successful LMS Implementation

Three components that makeup DeLone and McLean's IS success model are the creation of a system, the use of the system, and the consequences of the use of the system. DeLone and McLean's IS success model was adapted by Holsapple and Lee-Post for use in the learning management system to be: system design, system usage, and system outcome (Kim & Trimi, 2012). Ozkan and Koseler (2009) used the D&M IS success model in the learning field and identified that system quality, service quality, content quality, learner perspective, instructor attitudes, and supportive issues had a considerable effect on the learners' perceived satisfaction. Results of a comparative analysis between ICT experts and faculty reveal six factors including learners' characteristics, instructors' characteristics, extrinsic motivation, service quality, system quality, and information quality that influence the acceptance of e-learning systems in developing countries (Bhuasiri, Xaymoungkhoun, Hangjung, Rho & Ciganek, 2012). Furthermore, Lwoga, (2014) confirms the findings that perceived usefulness, perceived ease of use, user satisfaction, student characteristics, instructor, LMS characteristics and organisation characteristics influence LMS success.

2.5.1 Opportunities

Technology has fuelled the emergence of new and better forms of work, facilitated economic growth and enhanced the standards of living among people in various countries. People can now store, retrieve and manipulate information faster and in better ways. Increasing technological trends indicate that severe disruptions will occur in the future years. Artificial systems that handle difficult issues rationally pose a danger to many types of jobs, but they also open up new opportunities for economic growth. Research has revealed that half of all existing work activities might be digitized using currently available technologies, allowing corporations to save billions of dollars while also creating new types of jobs (Manyika et. al., 2017).

Long-term productivity improvements, efficiency, and life transformation will result from technological innovation. Entrepreneurs will also work with innovative opportunities to create economic growth and enhance the lives of many people all around the world (Jee 2017 & Schwab 2015). The world is on the threshold of a technological

revolution that will forever revolutionize the way we live, work, and interact with others, according to Schwab (2015). In terms of extent, scope, and complexity, the change will be unprecedented in human history. We don't know how it will play out, but one thing is certain: a comprehensive and integrated response is required, involving all players in the global system, from government and business to academics and civil society. Information technology has a positive influence on the economy's education, health, and commercial sectors. It has shifted the focus of education away from traditional ways of delivery and toward new models of curriculum and teaching, bridging the gap between the physical and digital worlds. Technology has revolutionized the way colleges provide education to students in higher education (Jules 2017).

According to Wilson & Beatty (2001), the use of information technology in education allows educational institutions to reach out to students at any time and from any location. Besides accessibility, e-learning has the potential to increase engagement, collaboration, and material delivery, all of which lead to higher learner satisfaction. In addition, integrating technology into learning, particularly in higher education, can help both lecturers and learners increase the quality of their education while also realizing their educational goals. Finally, stakeholders in the educational sector of universities in developing countries, notably in Ghana, must work to integrate e-learning as a complement to teaching and learning.

E-learning is cost-effective and allows both instructors and students to access education from everywhere at any moment. E-learning also has the distinct advantages of increased responsiveness to changes, improved accessibility, and value-based service supply. Trivedi et.al., (2013) assert that major methods by which education can be imparted utilizing the internet to allow both instructors and learners the opportunity to participate in teaching and learning are computer-based training, internet-based education and web-based training.

2.5.2 Factors Influencing the Implementation of Innovation and the Use of LMS in Ghanaian Universities

The pursuit of higher efficiency levels will frequently necessitate innovation. The ability to address challenges with new technology should be embraced, but the obstacles that

come with it should never be underestimated. Information technology, as crucial as it is to our lives, is experiencing some severe ethical issues, but it is up to IT professionals and users of information technology to be prepared to resolve the issues. As more developing information technologies enter the market, most IT specialists and users are unsure how to deal with the issues that these technologies pose. Lack of privacy, security, copyright infringement, and rising computer crimes are all key issues confronting information technology. This is supported by Grinnell (2019) that the major challenges in IT are data protection and the skills gap, finding new revenue streams, lack of agility, outsourcing risks: multi-cloud security, innovation, and digital transformation.

In addition to the issues outlined above, the global COVID-19 pandemic in 2020 posed significant new challenges for IT professionals and university leadership. As a result, it's critical to comprehend the significant aspects that influence students' decision to continue utilizing the e-learning system. Also, as the demand for higher education and e-learning grows in Africa after the pandemic, it's critical to understand the elements that influence students' and faculty's adoption of a particular e-learning platform. Early adoption (acceptance) and long-term usage are essential for an e-learning system's success (Tai et al., 2012). Technological infrastructure, high technology costs, instructional efforts, faculty and student competencies, technology satisfaction (Venter et al., 2012), management support, methodology, resource accessibility and availability, educational culture, and learning styles are some of the factors that influence the acceptance and use of e-learning technologies in most institutions in developing countries (Ndume et al., 2008).

Opposition to change and transformation by faculty, students and university administrators, due to the ease of depending on present ways of doing things, not considering and identifying alternate strategies of reaching university aims and objectives, lack of flexibility and steadfast adherence to restrictive rules and regulations is a recipe for failure and stifles innovation in academic circles. Most Ghanaian leaders have a reputation for maintaining their organisations' established practices and customs by upholding existing laws and regulations, which inhibit long-term innovation (Chak-keung & Wai-Ling, 2003). Most Ghanaian institutions struggle with organisational creativity and innovation due to a lack of creativity and invention, as well as a fear of

failure and taking risks. Due to a lack of vision, planning, foresight, and imagination, people are afraid of branching out into new settings and studying fresh methods of doing things. In universities and other institutes of higher study thereby preserving the outmoded way of life.

Several studies have been undertaken to investigate the obstacles of using learning management systems or experiencing E-learning from the perspective of various stakeholders. Lack of E-learning policy, low E-learning policy awareness, ineffective governance model, and lack of coordination in the management of technical resources in learning management systems are all factors that impede the implementation of E-learning in universities, according to Embi (2011). The fundamental obstacles that universities encounter in the usage of learning management systems, according to Snoussi (2019), include a lack of students' self-discipline in online systems, potential inconsistency of learning management systems with particular academic programmemes, and technical literacy. Almaiah et al., (2020) investigated the challenges encountered by universities with E-learning systems during the Covid-19 and indicated that a lack of financial support, change management issues, and technical issues with learning management systems were the most significant obstacles.

2.5.2.1 External Factors

External factors are referred to as the factors existing in the external environment that influence the use of an LMS. The external factors can be categorized as organisational factors (adequate technical support), technological factors (access to worthwhile, relevant and indispensable software and hardware) and social factors (the extent to which peers assist or neglect the user to utilize technology. Organisational factors denote the technical support given to staff by technical specialists with the use of LMS. Both organisational factors and technological factors are measured in tandem with the facilitating conditions of the UTAUT model whereas social factors are measured in connection with the social influence construct of the same model (Sherbib Asiri, Mahmud, Abu Bakar & Ayub, 2012).

2.5.2.1.1 Organisational Factors

Organisational factors comprise top management support, user support and training and IT facilities. The diverse organisational features and factors that are deemed indispensable determinants of LMS adoption include facilitating conditions, right infrastructure, user training, technical support, management support and technology alignment. Facilitating conditions as part of the organisational factors is the extent to which a user or instructor believes that an organisational and technical infrastructure is available to assist the use of the LMS. The availability of external resources such as time, money and effort as well as technological resources such as broadband and PCs are required to enable the performance of a specific behaviour. Top management support is also referred to as the degree to which a trainer elevates his or her beliefs that existing organisational and technical resources use primarily for assisting the use of LMS (Munezero, Irura, Kirongo, Etiegni & Suhonen, 2016).

Offering technical support to instructors or users is of paramount importance as it helps them to adopt and use LMS (Al-Busaidi & Al-Shishi, 2010). Afshari, Bakar, Luan, Samah and Fooi (2009) conducted a study and found that the faculty members did not accept the usage of computers because they were oblivious to accessing help when required. Lack of technical support can be nerve-wracking for faculty members which can influence their willingness and acceptance of using the LMS (Al-Busaidi & Al-Shishi, 2010). Training faculty members and students influence the incorporation of LMS into tertiary education (Unwin, Kleesen, Hollow, Williams, Olooo, Alwala & Muianga, 2010). Lecturers must be given ample opportunity to practice the use of LMS to ascertain means to incorporate LMS into their lecturing. Academic staff who have received training on the use of LMS are more likely to use LMS than those who have not been trained (Sherbib Asiri et al., 2012). According to Buabeng-Andoh (2012), training encourages the zeal to use LMS lack of training is one of the motives faculty members may not use an LMS. Technical support, training and administrative assistance influence a faculty's adoption and use of LMS in tertiary education (Teo, 2009).

2.5.2.1.2 Technical Factors

Lack of reliability, performance and timely support can influence academic staff not to use LMS (Nanayakkara, 2007). Panda and Mishra (2007) are also of the view that inadequate computers, as well as technical problems, hinder the use of LMS in higher

education. Therefore, effective adoption of the use of LMS in higher education is heavily dependent on the availability and accessibility of technological resources and the inexistence of technical problems (Al-Busaidi & Al-Shihi, 2010). The quality of a particular LMS is of paramount importance to the decision of a faculty. The quality of a system comprises reliability, functionality, response time, interactivity and accessibility. The quality of information plays a critical role in the final decision of a faculty on whether to use or neglect a particular LMS. Information quality is described as the perception of the output produced by an LMS comprising accuracy, timeliness, adequacy, accessibility, understandability and relevance (Al-Busaidi & Al-Shihi, 2010). Lwoga (2014) in a study discovered that both system and information quality were predictors of the use of LMS by students.

2.5.2.1.3 Social Factors

Social factors normally focus on the influence of environmental factors including attitudes, behaviours of people and social pressure that are imposed on other people. Social factors focus on how persons, who are of paramount importance for users, have an effect on them towards using LMS (Terzi, Moridis, Economides & Mendez, 2013). Coleman and Mtshazi (2017) indicate social factors refer to the assistance of discouragement of peers. The concept is normally amalgamated with social influence from UTAUT. Subjective norm is put under social dimension and described in the model to assess the effect of people's views on the decision of instructors. It was found that subjective norm influences the use of LMS by instructors. An overwhelming majority of instructors make use of particular LMS because of recommendations from the actual system users comprising colleagues or students. Subjective norms influence the use of LMS by instructors in education (Terzi, et al., 2013).

2.5.2.2 Internal Factors

Internal factors are an amalgam of factors that are about people such as competency, personal innovativeness, perceived usefulness and perceive ease of use.

2.5.2.2.1 Computer Competency

This is referred to as the degree to which a person has the skill and knowledge to use a computer to perform a plethora of applications to perform diverse tasks (Buabeng-Andoh, 2012). Academic staff knowing very well that they are not competent enough to utilize technology normally do not want to incorporate technology in their lecturing. Lack of knowledge and skills are internal obstacles leading to hesitation in the use of LMS in lecturing (Sherbib Asiri et al., 2012). The adoption and use of LMS are influenced by experience with technology. Computer literacy is a major condition for the use of any LMS (Al-Busaidi & Al-Shihi, 2010).

2.5.2.2.2 Teaching Style

The teaching style of the faculty also influences the adoption and use of LMS. The decision of academic staff to adopt and use a particular LMS is normally influenced by the teaching styles and techniques. The teaching styles of a faculty are normally based on the needs, emotions, beliefs, attitudes and motives of the faculty. Some lecturers may not be eager to use LMS either because they do not have in-depth knowledge of computers or they believe the traditional methods stand tall (Al-Busaid & Al-Shihi, 2010).

2.5.2.2.3 Personal Innovativeness

Personal innovativeness influences the adoption and use of technology and it is referred to as an individual's tendency to explore or embrace novel information technologies. Innovative people are more likely to determine the usefulness and ease of use of technology than persons who are not innovative (Al-Busaid & Al-Shihi, 2010). Nanyakkra (2007) indicates that inadequate time to design, develop, sustain and assist classes online is an obstacle to using LMS. In creating novel teaching materials, especially for inexperienced lecturers, a lot of time is required to build e-skills (Keengwe, Onchwari & Wachira, 2008).

2.5.2.2.4 Perceived Usefulness

This refers to the magnitude users comprehend that via the use of a particular IT component, their performance would be immensely ameliorated. Technology that is deeply rooted in perceived usefulness is believed to have a significant and positive effect

on the users concerning performance (Yeh & Teng, 2012). The authors further indicate that research has revealed that perceived usefulness affects the perceptions of technology and people's interest and willingness to adopt and use LMS. Al-Busaid and Al-Shihi (2010) also believe that perceived usefulness as an internal factor influences the adoption and use of LMS. Perceived usefulness is normally influenced by joy from using technology, subject norms, self-efficacy as well as experience (Yeh & Teng, 2012).

2.5.2.8 Perceived Ease of Use

This refers to the useability of a person to adopt and use technology without ample support. It is the degree to which someone is confident to use technology effortlessly (Abdullah & Ward, 2016). Some authors have indicated that technology is not intricate and difficult to comprehend would lead to an upsurge in its adoption and use by lecturers and students (Wu & Chen, 2017; Joo, So & Kim, 2018). Uziak, Oladiran, Lorencowicz & Becker (2018) on the same tangent indicate that for students to embrace a particular LMS, they should be comfortable with it and not feel threatened by it.

2.6 THE ROLE OF THE UNIVERSITY LEADERSHIP AND GOVERNANCE IN LMS IMPLEMENTATION

Competent leadership and governance are widely acknowledged as critical to a country's economic and political success. Effective leadership has been discovered to be a hallmark of high-growth institutions. Universities have experienced a variety of significant changes in the previous century, including decreased public funding, increased criticism of academic administration structures, rising educational costs and the challenges of deployment of information and communication technologies. The solutions to these challenges require practical management strategies upheld by transformative leadership strategies including the development of innovative management structures to ensure the efficiency and development of universities in terms of autonomy and the adoption of appropriate technology. Additionally, these change strategies must include a review of their strategic goals, change management approaches, development of innovative management structures to ensure efficiency and development of universities in terms of autonomy and the adoption of appropriate technology (Bushuyev & Bushueva, 2010). E-Learning has experienced an exponential surge in use over the previous decade,

according to research. Due to its effectiveness and convenience, a rising number of institutions and organisations are turning to E-Learning because it is seen as an essential component of an efficient professional development strategy.

Strategic leadership has several dimensions, including managing through others and assisting organisations in adapting to a changing environment that tends to happen at a faster pace than ever in today's dynamic business environment. Leadership necessitates the ability to control and manage essential information processes, incorporate and include both the internal and external customers of the organisation. Numerous actions define leadership and governance in LMS implementation. Leaders should have a clear mental approach, formulate strategic goals and appreciate every one's involvement to jointly contribute to positively change the organisation's capabilities for goal achievement. (Sami, Qamar & Khalid, 2011). It is the responsibility of leaders to guide and direct individuals in the proper execution of their tasks and functions, to provide solutions to a variety of problems and challenges, to make effective decisions, and to create a pleasant environment conducive to the attainment of academic goals and objectives. According to Zehrer (2015), leadership and governance have a role to play in the organisation's success. Some of these roles include (a) Management of Organisations Resources (Finance & Infrastructure), (b) Setting Strategic Direction, (c) Skills Development, (d) Decision Making, and (e) Sustaining an Effective Organisational Culture.

2.6.1 Management of Organisations Resources (Finance & Infrastructure)

 Many organisations are becoming more interested in the study of leadership because of a leadership role in the achievement of institutional goals (Offord, Gill, & Kendal, 2016). Furthermore, both practitioners and scholars agree on the importance of strategic leadership in all organisations because it improves sustainability, performance, and profitability (Appelbaum et al. 2016). According to Yadav and Sagar (2015), organisations can assess and interpret strategic management performance through the measurement of strategic management components. Management of resources involves how leaders of organisations seek to fit into their external environments to achieve continued existence, growth, and comparative advantage (Abreu Pederzini, 2016). Strategic management is still in its early stages because it is not widely accepted by academics and business leaders (Bao, 2015). Witek-Crabb (2016), on the other hand,

argued for the usefulness and importance of the strategic management construct. Furthermore, organisations achieve validity and credibility by employing a variety of measurement tools in the strategic management of human and financial resources (Rajnoha & Lorincová, 2015).

A profitable and sustainable organisation experiences growth (Romanelli, 2017). According to Ramish and Aslam (2017), profitability is one of the key performance indicators in organisations. Vision, strategic leadership, internal quality, competitive advantage, value creation, employee engagement, and satisfaction are some of the key drivers of organisational profitability (Tuominen, Hirvonen, Reijonen, & Laukkanen, 2016). Top management teams and the board of directors are responsible for ensuring that the costs of generating revenue do not exceed the income by establishing good operational and strategic processes (Cote, 2017). When the cost of generating revenue is less than the income, an organisation is profitable (De Toni, Milan, Saciloto, & Larentis, 2017).

2.6.2 Setting Strategic Direction

Leadership establishes the scope and direction for the organisation's success while the governance of the system ensures that the implementation of the LMS is aligned with the objectives and needs of the organisation. Governance creates an adequate representation of all stakeholders and provides a structure for decision-making. Without proper governance, it is more difficult to set and enforce standards. The ability to successfully determine direction is a large component of this achievement. In a world of constant change and uncertainty, strategic leaders must maintain a sense of direction while simultaneously fostering ownership of goals and objectives for action among the teams they oversee. Because the LMS must be in line with the university's objectives, the leader should set e-learning programmeme objectives and identify how to track progress.

Setting LMS goals aid in assessing the effectiveness of learning programmemes. Setting goals and objectives for individuals is referred to as determining objectives and the process of decision making to implement those objectives is governance. The heads or leaders' responsibility is to raise awareness among educators and other members of the educational institutions to determine the goals. Individuals carry out their job

responsibilities with the primary goal of accomplishing the intended outcomes. When educators convey knowledge and information to students in the form of lesson plans in the classroom, both the educators and the students have a goal in mind. The instructors' major goal is to guarantee that students have a thorough understanding of the instructional plans. Students, on the other hand, have a major purpose of making sure they comprehend topics, get good scores, and reach their academic goals and objectives in a well-organized manner. As a result, one of the most crucial leadership activities is setting goals. Policies, processes, guidelines, conventions, and criteria linked to course features and structures are included in LMS standards. Standards guarantee that all administrators and stakeholders use the LMS consistently to enhance its usability and manageability. A proactive, inclusive, and transparent strategy is essential, one that does not denigrate information or stall a response (Kerrissey and Edmonson 2020). Additionally, leaders motivate their followers by setting ambitious performance goals, being honest and transparent, setting challenging goals, and expressing concern for their teams, all of which will inevitably result in highly motivated teams and exceptional results for the institution (Mczyski, & Sukowski, 2017).

2.6.3 Skills Development

According to Andersen (2015), investing in career development is critical because it is a process that provides organisations with a competitive advantage in achieving organisational goals. According to Tawadros (2015), top management teams may use tutoring, job rotation, training, and designing learning environments to develop key skills for strategic leaders. Learning is an important component of a strategic leadership structure that should be inculcated in the organisation's culture. When making decisions, strategic leaders demonstrate specific behaviours that they incorporate into their actions. Through positive feedback, practice, and reinforcement, strategic actions and behaviours naturally become idiosyncratic (Goldman & Scott, 2016). An organisation led by an innovative leader promotes learning, knowledge creation, and knowledge sharing, all of which are critical to the organisation's long-term viability. Strategic leaders influence the organisation's strategic flexibility and competitive advantage through key initiatives such as the development of organisation-specific competencies, the effective use of modern

technology, and the creation and maintenance of organisational culture and frameworks (Vecchiato, 2015).

Strategic alignment provides a significant competitive advantage to the organisation's operational effectiveness and financial performance. Building a strategic leadership culture begins with shifting organisational and individual mindsets to the profound realization that strategic leadership is a process rather than a position that necessitates the collective participation of many and necessitates a commitment to learning (Baird, & Schoch, & Srour, 2016). Employee responsibilities should be related to learning experiences by providing training designed to address each employee's strengths and weaknesses identified in job performance. The LMS should not be viewed as a separate work process from work items, customer service, and other areas impacted by learning and development. Theoretically, training programmemes should include some hands-on experience with these processes.

2.6.4 Decision Making

The most important function of leadership is to make decisions that aid in the achievement of the vision of an organisation. The leader's decision-making is critical to the entire strategic management process. Leaders are in charge of determining how objectives will be met. What should the strategies be, and how they should be implemented. Top management sometimes bases their judgments on personal interpretations, experiences, and preferences (Wulffers, Bussin, & Hewitt, 2016). As a result, key decisions are subject to criticism and may not work because of the process that led to the decision or the conclusion itself. To obtain a competitive advantage, strategic leaders must make successful judgments in a timely competitive environment in reaction to constant changes. Because they govern the entire decision-making process (Cervone, 2015). Top management teams play a critical role in speeding up the decision-making process. Successful leaders have an impact on decision-making through influencing team distinguishing elements or group process parameters. According to new research, the efficacy of strategic decision-making influences the quality of the relational network between strategic leaders and interpersonal interactions (Gu, Xie, & Wang, 2016).

When leaders and subordinates work together and take an active role in managing the organisation's activities through planning, effective communication, information sharing, and innovation, effective decision-making ensues (Osunrinde & Tiamiyu, 2017). This is because effective leaders inspire their followers and ensure that courage, self-belief, recognition, and acknowledgement are paramount to expect outstanding results from their team members (Caro, 2016), and constructive decision-making can improve organisational profitability. The strategic environment in which leaders operate is vastly different from the climate at lower levels of the organisation (Abu-Rahman & Jaleel, 2017). Successful leaders make important decisions that can have a significant impact on the organisation (Chng, Ming, Shih, Rodgers, & Song, 2015). These leaders typically plan long-term and enormous decisions before making them. Leaders can also be successful in their decisions if they have skills such as vision, which allows them to focus and plan for the future (Norzailan, Othman, & Ishizaki, 2016). Caro (2016) argued that strategic leaders must become transformational to inspire their followers to achieve organisational goals and common interests. Leaders who make strategic decisions must plan for change, lead change, and, most importantly, champion a change mindset within the organisation (Srour, Baird, & Schoch, 2010). Effective decision-making and constructive feedback mechanism, as well as internal and external trend analysis, are critical drivers of organisational performance (Hwang & Min, 2015).

2.6.5 Sustaining an Effective Organisational Culture

Leadership is defined by a culture that expresses the core values that are shared by a majority of the organisation's members. The core values of the organisation are strongly held and widely disseminated by the members who accept the values and principles and are committed to those beliefs. Because of the high degree of the reciprocal internal climate of high behavioural control, a well-built culture will have a significant influence on the behaviour of its members. Strategic leaders have the best view of the dynamics of the organisation's culture because of their position in the organisation; they drive what should continue and what needs to be transformed. The leaders' broad perspective is essential for strategic success and culture is created from within an organisation as long as the group learns and adapts to its internal and external environments (Inabinett & Ballaro, 2014). Every organisation creates and maintains its own culture, which

influences how employees think, feel, and behave at work. A strong culture has a significant impact on employee behaviour, resulting in lower turnover, lower absenteeism, increased cohesiveness, and positive attitudes. According to Eaton and Kilby (2015), lack of an effective organisational culture is a major contributor to poor performance and productivity.

Employees in a positive organisational culture share the organisation's goals and values (Flamholtz & Randle, 2012; Hartnell et al. 2011), and leaders use an effective organisational culture to shape employee attitudes, improve operating efficiency, and increase financial performance. In an effective organisational culture, leaders demonstrate employee-focused leadership, sound interpersonal relationships, and ethical decision-making processes (Engelen et al., 2014). Furthermore, an effective communication system is established, which is critical for coordinating employee activity and increasing employee involvement in organisational decision-making. Shared assertions and effective communication are required for an effective organisational culture to exist (Sok, Blommel, & Tromp, 2014). Organisational culture shows a high level of agreement among members on what the organisation stands for. Top management's actions also have a significant impact on the culture of the organisation. Such unanimity of purpose fosters cohesion, loyalty, and organisational commitment. These characteristics, in turn, reduce employees' proclivity to leave the organisation and foster innovation.

2.7 LEADERSHIP SKILLS /COMPETENCIES NEEDED TO DRIVE INNOVATION IN UNIVERSITIES

Performance drivers aim to build an environment in which organisations can plan, communicate effectively, and measure strategies in their business environment (Baird, 2017). Dynamic leadership and management influence organisational strategy by enhancing profitability through various managerial capabilities (Smutny, Prochazka, & Vaculik, 2016). The advancement and implementation of social processing skills, technical skills, and knowledge are critical managerial capabilities that improve organisational profitability (Smutny, Prochazka, & Vaculik, 2016). The goal of

performance drivers is to create an environment in which organisations can plan, establish rapport, and measure strategies in their business environment (Baird, 2017).

2.7.1 Interpersonal skills

In recent times, for leaders to lead effectively, they need adequate interpersonal skills such as communication, emotional intelligence, conflict management and people management. Interpersonal skills are the capabilities to inspire and engage others to their optimum work towards a common goal. They are also referred to as soft skills (Poulsen, 2021). Tarver (2021) also define interpersonal skills are the behaviours and tactics, a leader utilizes to relate with other people effectively. Persons with interpersonal skills normally bring out the best in other people via empowerment, role modelling and motivation. Moreover, they become good leaders due to their respective skills of communicating and motivating people in their circles (Poulsen, 2021). Interpersonal skills are related to the understanding of social expectations and customs, whether learnt or acquired. Persons with strong interpersonal skills acclimatize their strategies and communications based on the reactions of people (Tarver, 2021).

2.7.2 Planning skill

Finkle (2020) indicates that one of the good leadership skills expected from a leader is planning. Planning gives direction and the manner to attain goals. In recent times, leadership skills require people to develop their ability to build for an unpredictable future. Planning is based on making some assumptions regarding the future. This becomes accurate when the future moves following some written and unwritten rules. Planning entails writing a document and shoving it into a drawer. It also involves leaders reviewing the plans they develop regularly, evaluating where they are towards the goals and ascertaining if something has altered that need a shift to the main plan. In times past, planning meant growth and a couple of hardcore decision making processes along the way. However, in recent times, a hard-core final decision has become the order of the day (Finkle, 2020). The cardinal purpose of planning is an indispensable skill for leaders is that it gives leaders the courage to utilize resources such as people, budgeted money, materials used to convert inputs into outputs. Inadequate planning denotes that leaders

risk making decisions that will hurt the allocation and use of the aforementioned resources (Vivente Australia, n.d).

2.7.3 Technical skills

Technical skill is referred to the knowledge regarding proficiency in a specific type of work or activity. It entails competencies in a specific area, analytical ability and the capability to utilize the right tools and techniques. It is the ability to work with things. Technical skills are most important at the lower level and middle level of management and least important at the senior level of management. Technical skills play a vital role in innovation and having the optimal technical skills denotes that leaders are competent and knowledgeable regarding the activities relating to an organisation, rules and regulations of the organisation, products and services and operating procedures of the organisation (Techno Func, 2020). In the Universities, the technical skills needed to use LMS include having knowledge of computer terminology such as browser, operating system, application, files, icons etc., understanding basic software and hardware with the ability to perform operations (such as using keyboard and mouse, managing files and folders, uploading and downloading files), internet skills (connecting, accessing sites using browsers), create online accounts, perform online research using diverse search engines and library databases (Southern Union State Community College, n.d).

2.7.4 Human Skills

Human skills refer to the ability to work with people. They are skills that enable leaders to work effectively with subordinates, peers and superiors. It is the expertise of leaders in relating with people in a manner that facilitate the accomplishing of tasks successfully. Leaders with high levels of human skills can acclimatize their ideas corroborate that of others, particularly when it will help in attaining goals and objectives of the organisation rapidly, effectively and efficiently. These types of leaders normally show empathy to factors that motivate people, create an ether of trust for subordinates and take the needs and motivations of other people into consideration when deciding on the activities to engage in to attain goals and objectives of the organisation. The ether of trust makes employees feel comfortable and empowered to make contributions towards the attainment of organisational goals. Human skills are needed at all levels of management.

Examples of human skills include effective communication, encouraging people, creating a positive attitude, developing collaboration and teamwork (Techno Func, 2020).

2.7.5 Conceptual skills

The higher leaders climb the organisational ladder, they are expected to provide strategic direction, generate the vision and encourage employees to work towards the goals of the organisation. The aforementioned are conceptual skills that give leaders the ample opportunity to evaluate and work with ideas. Leaders possessing high levels of conceptual skills are adept at evaluating the ideas that make up an organisation and the vision of the organisation. Conceptual skills refer to the capability to work with concepts, abstractions, hypothetical situations and people. They are cognitive, business and strategic skills. Conceptual skills are required to climb the career ladder. Conceptual skills are most important for top-level management, less important for a middle level of management and least important for a lower level of management. Some indispensable conceptual skills include creativity, decision making, wing to win interconnectedness, strategic decisions, solving problems among others (Techno Func, 2020).

2.8 EMPIRICAL RESEARCH ON STRATEGIES FOR EFFECTIVE LMS IN UNIVERSITIES

Sampson (2021) argued that the incorporation of technology in Universities has reached a novel dimension due to the emergence of COVID-19. Universities in Ghana including the University of Education, Winneba (UEW) have on the back of the pandemic been pushed to broaden their technological scope for pedagogical reasons. However, knowledge on students' adoption of LMS in the COVID-19 era is scarce. On the back of the arguments built, Dampson (2021) conducted a study on the determinants of LMS in the COVID-19 era from the perspective of the students of UEW. Due to the pragmatic philosophy, the study gravitated towards the mixed methods approach (quantitative and qualitative approach). Moreover, the explanatory sequential design was adopted and consequent analyses brought to light heightened knowledge regarding the research problem. The study targeted all students of UEW and they were sampled from various faculties in the University. Stratified random sampling technique was utilized in

sampling 3272 students for the quantitative data whereas purposive sampling was used to select 20 students for the qualitative data. A structured questionnaire comprising 40 closed-ended questions were administered to 3272 students and 20 students were interviewed with the help of an interview guide. The quantitative data were analysed using descriptive statistics (means and standard deviations) and inferential statistics such as multiple regression and stepwise regression. The qualitative data were analysed using content analysis. It was found that the adoption level of LMS among the students of UEW was moderate. The study further revealed that perceived usefulness, perceived ease of use and attitude towards LMS were strong predictors of students' adoption of LMS. Moreover, age, faculty and level of ICT skills mediated the student's adoption level of LMS. The author recommended that the management of UEW should continue to adhere to the pragmatic and purposeful seminars and workshops to educate the students about adopting LMS and the merits of using LMS for their respective academic activities. It was further recommended that management must take into consideration the age, faculty and level of ICT skills of the students in the implementation of new online platforms.

According to Amponsah (2021), the emergence of the COVID-19 pandemic and its ramifications have made Universities including the University of Ghana move their academic activities online which comes with a litany of challenges. This motivated the researcher to investigate and document the perspectives of students with visual impairments (SWVIs) at the University of Ghana regarding LMS. The study adopted a qualitative research approach as well as a phenomenographic design to ascertain the objectives. Thirteen (13) students with visual impairments (SWVIs) were sampled and interviewed using an interview guide. The views of the SWVIs were put into five themes, pre-COVID-19 academic experiences, reaction to online shift, preparation towards online shift, coping mechanisms in fully online learning spaces and preferred post-COVID-19 learning space. The results showed that the SWVIs indicated that the challenges they face with LMS exceed the benefits they gain and as such prefer the university switching to face-to face-method of teaching post-COVID-19. Albeit the university makes transportation arrangements for the SWVIs for their lectures and makes available some devices to aid them with learning, they face a myriad of challenges. One of the challenges is the inability of some lecturers to determine their challenges and accommodate them during lectures. The study further revealed that most of the research

participants hated the information of switching to LMS because of miscommunication and lack of proper orientation by the University of Ghana regarding the shift. A vast majority of the SWVIs indicated that they were not adept at technology and had not utilized Sakai LMS which was a challenge moving them from the conventional lecture hall to the digital space in a rapid manner. Amponsah (2021) recommended that there should be training for both the faculty and students to create a long-lasting rapport for effective engagements online. The University should also take into consideration participatory technologies with minimum cost implications to students so they would be motivated to subscribe to LMS without any form of persuasion. The University should also map up a policy of inclusiveness that embeds Ubuntu as well as human awareness to mitigate inequalities among the students.

According to Mohammadi, Mohibbi and Hedayati (2021), the successful implementation and use of LMS have become challenging for a vast majority of Universities in this COVID-19 era. The researchers further indicated that Higher Education Learning Management System (HELMS) was the LMS normally used during the quarantine period in Universities in Afghanistan. HELMS was new hence it brought about a litany of challenges. Mohammadi et al. (2021) further argued that no study had focused on either the challenges of using HELMS or factors that influence the use of HELMS. In establishing these gaps, the researchers conducted a study on the challenges facing the use of HELMS and the factors influencing the use of HELMS from both managerial and user perspectives via a qualitative approach. In collecting data, the researchers conducted semi-structured interviews with individuals and focus groups consisting of University management, lecturers and students. The qualitative data were analysed using thematic analysis. This analytical technique was used to provide detailed information regarding the challenges from diverse managerial aspects such as policy, organisational culture, technical, governance model, skills and quality of service. The results showed that the challenge that had a major effect on the success of HELMS was the lack of policy. This challenge also led to other areas of challenge including skills, quality of service, governance model being affected. Technical issues was another challenge faced by management, students and lecturers. Moreover, the study revealed that factors that influenced the adoption and use of HELMs include performance expectancy, ICT and HELMS literacy, content quality and university management. The study, therefore,

recommended that training and workshops should be organized for users and management with the required content. Moreover, an e-learning policy for Universities must be developed and the policy must entail all the components that tackle issues relating to governance, quality, training, implementation plan, rewards and incentives.

Bervell and Akorful (2020) argued that distance education has progressed via technologies that defined them in the diverse generations of distance education delivery. However, the adoption and use of LMS have altered distance education delivery in recent times. While using the LMS-enabled blended learning, a plethora of factors have been cited in the literature as enablers towards the actual use of LMS. Some of the factors include facilitating conditions, the voluntariness of use and actual use of LMS. However, the literature failed to establish the relationships among these factors. In filling this gap, Bervell and Akorful (2020) conducted a study by defining a model based on the three factors to establish their relationships and their respective influence on LMS-enabled blended learning uptake of distance education by lecturers. The study sampled 267 lecturers on the University of Cape Coast distance education programmeme across study centres in Ghana. Questionnaires were used to collect data from the respondents using a cross country survey. Before administering the questionnaires, the items were validated via reviews from experts and focus group discussions to bring a solution to any form of ambiguity and misunderstanding of the items. After fine-tuning the items, exploratory factor analysis was performed to validate the items based on a pilot test. Items with factor loadings below 0.5 were deleted. Confirmatory factor analysis via partial least squares was also performed to validate the rest of the items for structural model analysis. It was found that there were significant relationships between facilitating conditions and voluntariness of use; facilitating conditions and user behaviour, and voluntariness of use and use behaviour of lecturers in their respective pursuit to make good use of LMS to deliver a blended model of distance education. The study recommended that adoption of LMS for blended learning in distance education must not be made voluntary at the initial stages of implementation but must be complemented with motivational factors including awarding the best online lecturers, promotion credits and resource incentives for the vast majority of LMS users. The study also recommended that management of the University should put in place facilities first before the commencement of the use of LMS-enabling blended learning.

Asamoah (2017) in a study focused on the factors that influence the adoption and use of LMS by lecturers in Universities in Ghana to improve e-learning. The use of ICT as a teaching and learning tool has been regarded as a catalyst for the transformation of education. On the back of this, various Universities have made a conscious effort to invest in e-learning infrastructure such as LMS. This, therefore, motivated the study of Asamoah (2017). First, the study made use of a quantitative approach to examine the innovation diffusion theory, technology acceptance model, image, subjective norm and facilitating conditions variables and their influence on actual use of Open Source LMS. Secondly, a qualitative research approach was utilized in determining factors that influence lecturers' adoption and use and non-use of Open Source LMS. Hypotheses proposed were tested using structural equation modelling (SEM) to ascertain whether the predictive generalizations of the model are valid. A pilot study was conducted using 25 lecturers from the University of Ghana and results showed that items of the questionnaire were reliable. The study targeted lecturers from four Universities including the University of Ghana, University of Education, Winneba (UEW), University of Professional Studies, Accra (UPSA) and Ghana Technology University College who know regarding the use of Open Source LMS such as Moodle or Sakai. 435 lecturers in various departments/faculties were sampled for the study and the questionnaires were administered to them. Out of the 435 lecturers, 283 fully returned their questionnaires. Judgmental sampling was used to sample additional 20 lecturers and they were interviewed. The qualitative data collected were analysed using thematic analysis. Confirmatory factor analysis, reliability test and structural equation modelling were utilized in analyzing the quantitative data. Descriptive statistics involving means, skewness and kurtosis were also used as well as an inter-correlation matrix. The results showed that perceived ease of use had a positive and significant relationship with actual use. Compatibility had a positive and significant relationship with perceived usefulness and perceived ease of use. Trialability also had a significant positive relationship with perceived ease of use. It was also found that subjective norm had positive nexus with perceived usefulness. The linkage between facilitating condition and perceived ease of use was positive and statistically significant. There was also an indirect and significant relationship between compatibility and actual use as well as facilitating conditions and actual use. Concerning the qualitative study, the utility of use, simplicity of use, self-

efficacy, enablers, and institutional policy influenced the actual use of Open Source LMS. Factors that influenced the non-use of Open Source LMS include nature, of course, restrictive nature of the LMS, slow internet connectivity and difficulty in blending face to face teaching with online. The study on the back of the results recommended that regular training and education should be organized for the faculties to embrace the merits of LMS. Moreover, Universities should ensure that LMS made available must be easy to use by making sure that power, internet, appropriate software and technical staff are available at all times.

Maina and Nzuki (2015) drew on a unified theory of acceptance and use of technology (UTAUT) to examine the influence of performance expectancy, effort expectancy, social influence and facilitating conditions on the acceptance of LMS in universities in Kenya. Descriptive research design and cross-sectional design were utilized to ascertain the extent to which problems influence the acceptance of LMS. The study gravitated towards both quantitative and qualitative research approaches. The study targeted lecturers, students, administrators and ICT staff from five Universities in Nairobi Metropolitan. Simple random sampling was used to sample 600 respondents for the study. The research instruments used for the study were questionnaires, face to face interviews and observation. Descriptive and inferential statistics were used to analyse the data. The results showed that LMS was a novel technology as an overwhelming majority of the respondents have less than 3 years of experience with the LMS. However, the use of LMS was of immense help to students, lecturers and staff as it enabled rapid completion of tasks, aided students in learning topics and heightened interactivity between students and lecturers. Moreover, it was found that expected performance, enabling infrastructures, institutional policies, training support and leadership and ease of effort use influence the adoption of LMS in the selected Universities. Friends or peers did not influence the adoption of LMS in the Universities. The study recommended that to ameliorate the use of LMS, management of the selected Universities must invest in technological use and LMS usage and availability. Moreover, the management of the Universities should come up with a policy framework to aid the use of ICT and create incentives for the use of forthcoming technology. Last, it was recommended that the

Universities should organize training and support programmes to ensure sustainable use and avoid the collapse of LMS.

2.9 LEADERSHIP STYLES

Institutions require effective leaders who understand the complexities of today's fast-changing environment and have the ability to influence followers in the desired manner to achieve desired goals. Different leadership styles may have an impact on the effectiveness or performance of an organisation. Corporate culture and performance are influenced by leadership styles, and consequently, leadership styles can affect the organisational climate.

2.9.1 Leadership Styles in Tertiary Institutions

It is imperative to determine which style of leadership is appropriate for a particular context. Bass (1997) identified two styles of leadership; transactional and transformational. Transformational leadership gives importance to individual growth and achievement. Thus, it creates the atmosphere for such to happen by influencing and stimulating the individual's potential to the fullest. Transactional leadership, on the other hand, focuses on staff's basic and eternal demand and the relationship between leaders and their subordinates is on a contract basis. The types of leadership across the literature have been widely diversified. For example, Mott (1972) identified three styles of leadership namely democratic, multifactor and situational. Three leadership styles are autocratic, bureaucratic, and democratic. Others may use such classifications as authoritarian, democratic or laissez-fair. Hassan et. al., (2016) even stated about 39 different styles of leadership

Many different things throughout history have been ascribed to be the meaning of leadership. There have been several arguments as to whether leadership is inherited, or knowledge that can be acquired through education and practice (Alkhawaja, 2017). Therefore, this requires the study of the progression of the definition of leadership and the theories over different periods in its history. Great Man Theory was a widely known and accepted theory before the twentieth century. This theory emphasizes that leaders are born and not made. This implies that leaders and followers were meant to act that

way. The great man theory suggests that leaders are born to possess some characteristics which make them great leaders. Hence, the followers are only meant to be followers since they do not possess the characteristics of the leader. Northouse (2013) indicated that this led leadership researchers to look for people with the right traits and characteristics to be regarded as leaders. Meaning that any existing leader should possess such inherited special traits. Over years, Nahavandi (2012) postulated that it has become difficult to identify the special and unique traits one is expected have to be regarded as a great leader. Even though some common traits were observed among leaders, it is not evident that anyone that had these traits will automatically become an effective leader.

These shortfalls in the Great Man Theory led researchers to focus on leaders' behaviour rather than their traits (Alkhawaja, 2017). Kouzes and Posner (2012) in their book 'the leadership challenge' opined that 'leadership started to be conceptualized as a set of behaviours and skills anyone could acquire through practice and learning; leaders could be made. This concept seems very useful and realistic (Nahavandi, 2012). Instead of looking for the desired leader with a special trait, it is easier to train an individual with the right behaviour that yields to having the desired outcomes. Therefore, the behaviour of the leader would determine his effectiveness. This however could also not holistically solve the quest to be able to identify the effective leader. Due to this, the focus shifted once again from focusing solely on the leader to a much broader view of contingency. The contingency leadership style is argued to be dependent on a particular situation. With this view, the attention in looking for effective leaders was set on the relationship between the leader and the follower. Thus, it depends on a particular instance, scenario or circumstance. Fiedler (1967) suggested that this style comprises task-oriented and relationship-oriented leadership styles. He emphasized that a task-oriented leader evaluates followers and co-workers based on their achievements and task performance, and they tend to pay more attention to details. A relationship-oriented leader evaluates the follower based on their loyalty and sincerity (Alkhawaja, 2017). This contingency theory as suggested by Fiedler proposes that an effective leader can be identified based on the leaders understanding and managing the situations in which they lead. This theory was further energized by Hersey, P. and Blanchard, K. H. in (1977). They posited that a leader's effectiveness hinges on his behaviour depending on the situation.

The situational theory predisposes that a leader leads in a current situation based on their aptitude to use their abilities and skills in that definite situation. This means that a leader would be determined on a situational basis, and it is also understood that different situations will deserve a different leadership behaviour (Alkhawaja, 2017). In furtherance to these, Blanchard indicated that the relationship between the leader and follower is dependent on four styles of both the leader and his follower. The four styles required of the leader are telling, selling, participating and delegating. Followers are also required to exhibit the following styles enthusiastic beginner, delusional learner, reluctant contributor and peak performer (Hersey and Blanchard, 1977). The contingency and situational leadership theories focused on the relationship between the leaders and followers. It further led to the propounding of the relational leadership model, which centres on people coming together to accomplish a common beneficial change. Empowerment of individuals and people's empowerment, therefore, became the focus rather than task and goal-oriented as a management style (Alkhawaja, 2017).

This relational leadership model led to the development of the Leader-Member-Exchange (LMX) theory. This theory emphasizes that the leader should not behave in the same way and manner to all the followers. This implies that there are different kinds of relations between the leaders and followers. The quality of the relationship between the leaders and followers should be dependent on mutual respect, trust and support. The followers that show and adhere to these virtues are referred to as the in-group, and they are given more support and encouragement. Whereas the followers who do not show the virtues of mutual respect, trust and support are also referred to as the out-group. The LMX theory was understood to have shed light on the importance of communication in the leader's and followers' relationships. However, the quality and means of developing this relationship between the leaders and followers were not made clear in the LMX theory. Based on this shortfall realized in the LMX theory, Burn (1978) propounded the Transformational and Transactional Leadership theory. The transformational leader is argued to be the kind of leader who will inspire followers and subordinates to create a vision to identify and acquire the needed change (Northouse, 2016). The transformational leader is courageous and a risk-taker. Accordingly, the transformational leadership theory enjoins both the leader and follower to develop a relationship that increases

morality and motivation. A leader that exhibits transformational leadership is supposed to show to his followers the following attributes, inspirational motivation, idealized influence, intellectual stimulation and individualized consideration. The transactional leader is also expected to exhibit styles such as contingent reward and, both active and passive management by exceptions. This theory, therefore, suggests that the leader has to possess charismatic characteristics, which imply that followers will forever be dependent on their leader, and so it will be difficult to train and develop followers to also become transformational and transactional leaders. From all the accounts above on leadership genealogy, it is evident that there has been no consensus over defining leadership in a way that it could be acquired (Alkhawaja, 2017). However, leadership was understood and defined as 'an influential relationship among leaders and followers who intend real change that reflects mutual purpose (Alkhawaja, 2017).

2.9.2 Transformational Leadership Style

The concept of "transforming leadership" was postulated by Burns (1978). And he defined it as "a relationship of mutual stimulation and elevation that converts followers into leaders and may convert leaders into moral agents". The concept of "transforming leadership in Leadership and Performance Beyond Expectations" by Burns was later developed by Bass in 1985 into "transformational leadership". Bass indicated that the direction of the influence is one-way whiles Burns also said it was a two-way process. Bass, however, concentrated on the incorporation of social change as an executive transformational leadership style (Malcalm & Tamatey, 2017).

Dvir et. al., (2002) also made it clear that transformational leader employs more inspirational tactics to influence their follower's goals and ambitions by providing them with self-belief. Enabling them to perform beyond what they are expected to achieve as stipulated implicitly and explicitly in the exchange agreement. Bass,Avolio,Jung, & Berson (2003) further indicated that transformational leaders create a conducive environment for followers to be predisposed to accommodate challenges and difficulties they encounter in the process of working towards the attainment of their goals. Furthermore, Yukl (2008) argues that transformational leadership makes sure the relationship between the leader and the follower is mutually beneficial. Thus the transformational leader in wishing to achieve higher performances motivates and

encourages the followers and subordinates. In essence, the transformational leader does not just set the rules for rewards and punishments but rather get involved in activities with the subordinates to achieve the objectives agreed upon.

Transformational leaders lead by example through showing their charismatic behaviour which inspires, motivates, stimulates intellectual capability and arouse the admiration of their subordinates as well as considering the needs of their followers individually. These attributes of the transformational leader transform and stimulate the passion of the subordinates and followers to exert their full potentials to generate higher performance levels. Transformational leaders assessed individually and as a whole the potentials of the followers, considering their ability to execute current assignments as well as future responsibilities that will be assigned to them (Modassir and Singh, 2008). According to Bass and Avolio (1993), the behavioural traits exhibited by the transformational leader are classified into five characteristics. The idealized influence, intellectual stimulation, inspirational motivation, idealized attributes and individualized consideration are the behavioural characteristics of the transformational leader. The study however combined both the idealized behaviour and the idealized attributes as one.

2.9.3 Transactional Leadership Style

Bass (1985) perceived the transactional approach as a cost-benefit process between leaders and followers. Bass (1985) further indicated that the transactional leader's concentrations are on preserving the existing condition and inspiring their followers to achieve organisational goals through a contractual agreement. Transactional leadership transpires when the leader depends on the appropriateness of the behaviour or performance of the follower to either punish or reward him. Transactional leadership rests on setting out the agreements, reinforcements and contingencies. The other side is the management by exception which is either passive or active.

The transactional leadership style is concerned with the leader influencing the followers to improve their performance through the reward and punishment systems of the organisation. Thus, the leader channelled his energy into ensuring that the follower strictly obeys and complies with the tenets of the agreement in completing their tasks. The follower's reward is based on his compliance with the directives of the leader in

carrying out his roles and assignments (Bass and Avolio, 2000). The transactional leadership style emphasizes extrinsic rewards such as financial inducements, holidays and promotion. The transactional leadership style can be described as the leader that given the opportunity would never want to take risks at all but instead concentrates on efficiency and reward. There are three behavioural characteristics of the transactional leader which are a contingent reward, management by exception (active) and management by exception (passive).

2.10 THE LEADERSHIP STYLES THAT INFLUENCE INNOVATION

Leadership is multifunctional which involves managing through others, and helps organisations cope with change that seems to be increasing exponentially in today's globalized environment. According to Bel (2010), different leadership styles are likely to have different impacts on employee involvement and commitment, which in turn influence the climate for innovation management. Thus, leadership can be considered as a better predictor of the success or failure of an organisation. In this regard, Ramsden (2013) suggests that effective leadership in universities entails; leadership in teaching, leadership in research, strategic networking and vision, transformational and collaborative leadership, fair and efficient management, development and recognition of performance, and interpersonal skills. Studies suggest that developmental leaders have five main qualities: vision; affiliation; resilience; struggle; emotions; knowledge, imagination and skills; integrity; confidence (Jones et al., 2014; Brannelly et al, 2011)

Anderson (2016) states that leadership involves a leader being able to stimulate, motivate and inspire his followers to achieve the set goals and target. Quality of service and productivity is the primary concern of the leader; only through employees of organisations, can this be realized. In line with this assertion, Mullins and van Bortel (2010) noted that organisation is a complex web of spiral revolving around people.

Kouzes and Posner (2012) are of the view that leadership started to be conceptualized as a set of behaviours and skills anyone could acquire through practice and learning; leaders could be made. This concept seems very useful and realistic (Nahavandi, 2012). Instead of looking for the desired leader with a special trait, it is easier to train an individual with the right behaviour that yields to having the desired outcomes. Therefore, the behaviour

of the leader would determine his effectiveness. This however could also not holistically solve the quest to be able to identify the effective leader. Due to this, the focus shifted once again from focusing solely on the leader to a much broader view of contingency. The contingency leadership style is argued to be dependent on a particular situation. With this view, the attention in looking for effective leaders was set on the relationship between the leader and the follower. Thus it depends on a particular instance, scenario or circumstance. Fiedler (1967) suggested that this style comprises task-oriented and relationship-oriented leadership styles. He emphasized that a task-oriented leader evaluates followers and co-workers based on their achievements and task performance, and they tend to pay more attention to details. Leadership occurs when leaders and followers can develop effective relationships that result in organisational outcomes. A relationship-oriented leader evaluates the follower based on the quality of relationships that exist between the leader and followers.

Transformational leaders exhibit the idealized influence behaviour in ways that the followers emulate them because they perceive them to be role models (Avolio, 2010). Due to this they are trusted, admired and respected. Idealized influence is composed of two factors, namely, idealized behaviour and idealized attributes. The transformational leader exhibiting the idealized influence wins the support of the followers by putting the needs of the individuals and the group first before his gains and interests (Malcalm & Tamatey, 2017). Through this, the followers associate themselves with the leader and support him to achieve the cause and missions he is advocating. The leader mostly in his bid to portray a true idealized trait sacrifices his gains for the sake of the group or subordinates. Also, the leader does not use his powers arbitrarily but applies consistency in dealing with all the followers, as well as sharing any possible risks with the followers (Avolio, 2010). By exhibiting these attributes, the leader is thought of by the followers to know the best and do the right thing even in challenging times by upholding his principles and standards. The leader can win the support and confidence of the followers, even though some of the followers may see the leader be difficult. Transformational leaders do not use the power at their disposal for their benefit but instead, they use it to drive their followers to achieve the objectives and goals of the group or organisation.

2.11 LEADERSHIP THEORIES

Many researchers and professionals have conducted studies to determine theories about leadership, organisational commitment, and work performance to better understand organisational success. This section discusses several leadership theories that were developed in the late twentieth century and are still used in many modern organisations.

2.11.1 Full Range Model of Leadership

Burns in 1978 first introduced this concept and was later developed by Bass and Avolio to include the "full-range model of leadership" (Burns, 1978; Bass and Avolio, 1993). The leaders maintain these two kinds of leadership behaviours of transformational and transactional in keeping their relationship with their followers. According to Burns (1978), the influence whereby the leader creates a cost-benefit relation with his followers is called transactional leadership. Meaning the employee is expected to perform according to the directives of the leader to receive the benefits. On the other hand, the influence where the leader maintains an emotional excitement with the followers is called transformational or charismatic leadership. With this kind of influence, the relationship between the leader and the follower is that of inspiration and not the subordinate's basic expectations as seen in transactional leadership. The transformational leadership style hypnotizes the followers and spurs them to aspire to greater performances. The transformational leadership style inspires the followers to recognize the need to grow and stimulates them to improve continuously on their performances (Vigoda-Gadot, 2006). The main thrust of the full range of leadership theory is that, for any organisation to attain its objectives, goals and vision, there must be a definite and mutually acceptable relationship between leaders and their followers (Malcalm & Tamatey, 2017). Leaders must recognize that without the support and loyalty from their subordinates and followers they cannot perform. On the other hand, followers should understand that leaders are the people who provide inspiration, motivation, and direction for them to attain their desires and realize organisational goals (Asare, 2012).

2.11.2 Idealized Influence Followers

Transformational leaders exhibit the idealized influence behaviour in ways that the followers emulate them because they perceive them to be role models (Avolio, 2010). Due to this they are trusted, admired and respected. Idealized influence is composed of

two factors, namely idealized behaviour and idealized attributes. The transformational leader exhibiting the idealized influence wins the support of the followers by putting the needs of the individuals and the group first before his gains and interests (Malcalm & Tamatey, 2017). Through this, the followers associate themselves with the leader and support him to achieve the cause and missions he is advocating. The leader mostly in his bid to portray a true idealized trait sacrifices his gains for the sake of the group or subordinates. Also, the leader does not use his powers arbitrarily but applies consistency in dealing with all the followers, as well as sharing any possible risks with the followers (Avolio, 2010).

By exhibiting these attributes, the leader is thought of by the followers to know the best and do the right thing even in challenging times by upholding his principles and standards. The leader can win the support and confidence of the followers, even though some of the followers may see the leader be difficult. Transformational leaders do not use the power at their disposal for their benefit but instead, they use it to drive their followers to achieve the objectives and goals of the group or organisation. In addition, Avolio (2010) posited that, the leaders that show the idealized influence attributes greatly impacts the lives of their followers so much that, they are always remembered and referred to by their subordinates in their daily endeavours. Often, the idealized leader is the focal person that is expected to drive the group in the right direction to achieve its objectives. The idealized leader is supposed to know more than the followers at every time and he should know what should be done next. Generally, leaders with idealized influence exhibit behaviours and attributes such as vision, trust, respect, risk sharing, integrity, and place their interests second to that of the followers.

2.11.3 Inspirational Motivation Theory

Transformational leaders that adopt inspirational motivation are always found urging and challenging the works of their followers (Avolio, 2010). This motivates and inspires their followers to continuously improve on their work. The inspirational attribute of the leader enriches the team spirit. The transformational leader uses this trait to force and revive the can-do spirit of the followers by challenging them to think about the attractiveness of

situations and conditions which they would desire. The inspirational motivation leader does this by being optimistic and enthusiastic about what they say and, in their actions, as well.

Avolio et al (1991) claimed that attributes such as personal accomplishments, effective communication skills and mentoring create a good framework for leaders to inspire their followers. Followers of inspirational leaders are always prepared to take independent decisions, risks and ready to take new challenges and opportunities to make sure that they meet their targets. Generally, leaders with inspirational motivation exhibit the following behaviours and attributes: modelling, commitment to goals, communication, and enthusiasm.

2.11.4 Intellectual Stimulation

The transformational leader consistently challenges his followers not to accept the norm. He always encourages his followers to be creative and innovative in their thinking (Bass and Avolio, 1993). Thus, his followers must strive to find solutions to problems by adopting pragmatic approaches instead of following age-old assumptions and procedures. The follower who becomes creative and innovative is appreciated and his new and creative ideas are solicited and embedded into new processes of finding solutions to problems. The leader constantly inspires the followers to be different and unique in their approaches to solving problems. The follower is also not blamed and castigated for his suggestions and findings, even if it is different or wrong. Often, the leader only pays attention to the results and findings of a creative and innovative process or thoughts, and not the particular person that did the suggestion. On the other hand, the followers also stimulate the leader to not only focus on new ways of doing things but to reconsider the existing systems and processes. Bass (1985) mentioned that intellectually stimulating leaders assist their followers to critically examine old challenges to reason very well and guide them to find new ways based on available information. That is to say that, no matter how good, fixed, political or bureaucratic a situation or condition is, it can be changed, challenged and be made better. Generally, leaders with intellectual stimulation demonstrate rationality as an important attribute, intelligent and well thought through solutions to problems.

2.11.5 Individualized Consideration

The transformational leader acts as a trainer, confidant, psychoanalyst, educator and mentor for the followers by paying close attention to the needs of every one individual (Avolio, 2010). Continuously, the followers and subordinates achieve a higher level of success through the development of their potentials imbibed in them by the leader. The developments experienced in the followers can be likened to the continuous process improvements which are witnessed in lean systems as propounded in the total quality systems. The transformational leader can practice individualized consideration by first and foremost generating innovative opportunities for the followers and then providing the necessary supportive environment for the followers to learn. Recognition is given to the individual needs and desires of each of the followers. The leader behaves in a way that depicts his desire to attract the followers and improve their ingenuity and modernism despite their differences. For example, the leader gives much autonomy to those who deserve it, and more encouragement to those who need it, then firmer standards and constant attention to those who need it. Avolio (2010) further indicated that communication between the leader and followers is not one way but two ways where exchanges of ideas are encouraged. Through this, the norm of practice becomes a continuous interaction between the leader and followers on an individual basis. For instance, the leader recognizes the follower as a person and not just any other employee or student. And any previous interactions with the followers with regards to individual concerns are remembered by the leader. The leader practising individualized consideration pays close attention to details. And he is mostly described with his statement that "It's not what you tell me; it's what I hear". Bass (1985) emphasized that those leaders who portray individualized consideration usually assist their followers in their personal development, delegate authority and employ formal communication. Generally, leaders with individualized consideration demonstrate the following behaviours and attributes: problem-solving, personal attention, mentoring, listening and empowering their followers.

2.11.6 Contingent Reward

Bass (1985) made a case that when a leader provides contingent rewards, followers become motivated, increase their involvement and commitment to improving performance. Bass (1985) once again explained that a significant and positive association exists between contingent reward behaviour and output. The contingent reward approach is exhibited when the leader assigns duties, he gives specific directives to be followed by the subordinate in carrying out the assignment, and then agree or secures agreements with the follower on the output or outcomes expected as well as the rewards which will be enjoyed when the subordinate carry out the assignment satisfactorily. Partially, the contingent reward system of transactional leadership was found to have reasonably yielded some positive results but in comparison with the tenets of the transformational leadership style, it fails in motivating followers to continuously improve their development and performance levels.

2.11.7 Management-by-Exception (Active and Passive)

The active form of management by exception was realized to be ineffective, mostly when used superfluously, even though it was also found to be quite good. For instance, in certain settings where the risks are high or even life treating, the active form was considered much better to be adopted by the leaders. Mostly, this is experienced in nuclear, healthcare and firefighting organisations. However, corrective transactions clarifications in highly risky and low-risk environments are completely different.

The active form of the corrective transaction involves the leader always and continuously looking out for nonconformities. The leader tries to spot errors and mistakes in the course of the follower executing their duties and corrects them immediately. The active leader is always vigilant and ready to right all wrongs. However, with the passive form of the corrective transaction, the leader normally does not do anything or take corrective actions only when they occur. One significant advantage of the transactional leadership style is that it provides a better guideline for leaders to adopt in some circumstances where there is no need to pursue radical changes and solicit the support of subordinates to take decisions. In situations where the safety of personnel and properties are critical for the survival of institutions, transactional leadership could be the best leadership style (Asare, 2012).

2.12 THEORETICAL FRAMEWORK OF THE STUDY

This study is underpinned by both Theories of Information Technology Use and Personality Traits Theory.

2.12.1 Theories of Information Technology Use

The role of technology in enhancing productivity, profitability and improving business processes cannot be overemphasized. As a result, several theories on the acceptance and use of technology have been proposed as a way of increasing the odds of technology acceptance and use across various contexts. These theories have been developed to measure the acceptance and use of technology. However, the difference in these theories depends on the constructs and determinants that were adopted by scholars in developing the various theories. This section presents a review of existing theories on technology acceptance and use as well as the definitions of the various constructs explored by researchers.

2.12.2 The Theory of Reasoned Action (TRA)

The theory of Reasoned Action (TRA) was proposed by Fishbein (1967) and was extended by Fishbein & Ajzen 1975; Ajzen & Fishbein (1980). This theory has its roots in social psychology and focuses on an examination of the behaviour of individuals through the influence of attitude. Ajzen and Fishbein (1967) suggest that the attitude of an individual affects his or her behaviour directly or indirectly. Hence, attitude is considered as a one-dimensional or multi-dimensional construct or factor. One of the goals of the theory is to provide an in-depth explanation of virtually any kind of human behaviour. TRA was developed not necessarily to address a specific human behaviour or a specific technology. The theory predicts, explains and reveals how human attitude as well as its characteristics influence human behaviour and reveals two main constructs as determinants of human behaviour namely, attitude towards behaviour and subjective norm. The figure below depicts the Theory of Reasoned behaviour.

TRA suggests that human behaviour is dependent on behavioural intentions which influences an individual to perform a particular act or engage in a particular behaviour.

Behavioural intention is a function of an individuals' attitude and subjective norm. An individual's attitude can be described as a positive or negative feeling regarding the performance of a particular behaviour. People tend to assess their beliefs regarding the outcome or consequences involved in performing a particular behaviour. These outcomes are also assessed to determine whether the individual considers them desirable or not. Hence, the attitude of an individual can be summarized as the outcome plus the desirability evaluation for the anticipated or expected consequences of performing a particular behaviour. Subjective norm can be described as the perception of an individual with regards to whether people he or she deems relevant think the behaviour should be performed. "The contribution of the opinion of any referent is weighted by the motivation that an individual has to comply with the wishes of that referent". Consequently, the subjective norm can be summarized as the totality of an individual's perception plus the motivation assessments for all important referents. Hence, TRA can be represented algebraically as follows:

$B \sim BI = w1A + w2SN$

Where behaviour is B, behavioural intention is BI, attitude is A, the subjective norm is SN, w1, as well as w2, represent weights that point to the relevance of each term
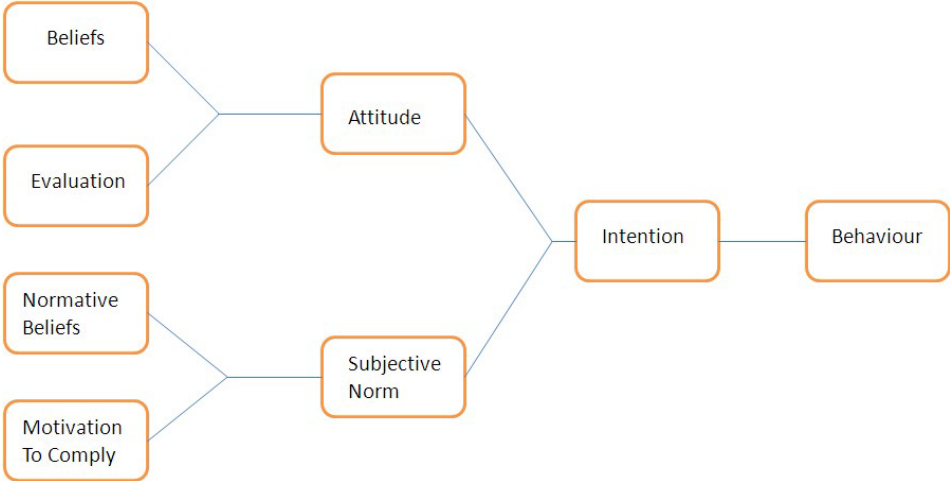
Figure 2.3: Theory of Reasoned Action

Source: Ajzen & Fishbein, 1969, 1980

2.12.3 Critique/Limitation of TRA

Critics of TRA argue that there is a likelihood of confusing attitudes and norms because sometimes norms can be redefined as attitudes and vice versa. Also, critics of TRA suggest that the theory argues that once a behavioural intention to act is formed, an individual is free to act or perform that particular behaviour without any kind of restriction. However, constraints such as inadequate time, environmental factors, inadequate organisational resources, and unconscious habits may pose limitations to an individual's ability to perform a particular behaviour.

2.12.4 Theory of Planned Behaviour (TPB)

The theory of Planned Behaviour suggests that the behaviour of individuals is determined by their behavioural intentions. Unlike the theory of Reasoned Action (TRA), the theory of Planned Behaviour suggests that an individual's behavioural intention is a function of three main factors namely attitude, subjective norm and behavioural control. TPB was proposed by Ajzen (1985). TPB is considered as an extension of the theory of Reasoned Action (TRA) proposed by Ajzen and Fishbein (1967). TPB is considered as an extension of TRA because of the inclusion of an additional construct, "Perceived Behavioural Control" as an additional determinant of human behaviour. As espoused by Ajzen and Fishbein (1967), attitude can be defined as either a positive or a negative feeling regarding the performance of behaviour based on one's assessment or belief regarding the outcomes associated with performing that particular behaviour. The overall attitude an individual possess regarding the performance of a particular behaviour can be summarized as the sum of the individual outcomes regarding the performance of a particular behaviour multiplied by the desirability evaluation for the expected outcome of the behaviour. Subjective norm can be described as the perception of an individual regarding whether people he or she deems relevant consider the performance of a particular behaviour as important.
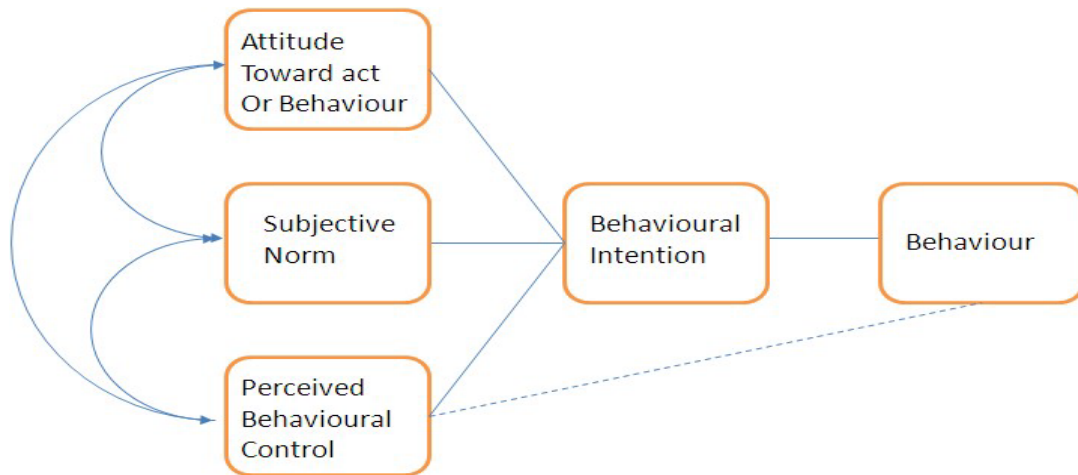
Figure 2.4: Theory of Planned Behaviour

Source: Ajzen, 1991

 "The contribution of the opinion of any referent is weighted by the motivation that an individual has to comply with the wishes of that referent". As a result, the subjective norm can be summarized as the totality of an individual's perception multiplied by the motivation evaluation for all people he or she deems relevant. Behaviour control, which represents the additional construct that differentiates TRA and TPB, is defined as an individual's perception regarding how difficult or easy it is to perform a particular behaviour. TPB was developed to address issues regarding inadequate correspondence between constructs like attitude and the performance of actual behaviour.

2.12.5 Critique/Limitation of TPB

Critics argue that TPB's constructs (attitude, subjective norm and behavioural control) may not necessarily be sufficient predictors of behavioural intention as well as human behaviour. Thus, the predictive validity of this theory in explaining human behaviour is insufficient. Hence, critics argue that additional constructs (such as moral norms, past behaviour, self-identity etc.) can be included to improve the predictive validity of the theory. Also, critics suggest that performing a particular behaviour over some time leads to routine. In effect, little or no conscious control is required by humans to perform such behaviours.

2.12.6 Decomposed Theory of Planned Behaviour (DTPB)

Decomposed Theory of Planned Behaviour was proposed by Taylor and Todd (1995) to enhance our understanding of the relationship that exists between tenets such as attitudes, beliefs, behavioural intention and human behaviour. DTPB suggest that the actions of individuals are a function of attitudes, subjective norm, and behavioural control, although the behavioural intention is deemed as the most appropriate indicator of human behaviour. DTPB suggest identifying beliefs is very important because it influences the three main determinants of human behaviour which are subjective norm, attitude and behavioural control. Attitude, which is considered a determinant of behaviour, is decomposed into three main variables. That is, attitude is a function of three main variables namely perceived usefulness, compatibility and perceived ease of use. These constructs have their roots in Roger's (1995) theory of innovation diffusion. Compatibility is defined as "the extent to which [an] innovation is perceived as consistent with existing values, past experiences and needs of potential users" (p. 224). Compatibility is considered a determinant of attitude.
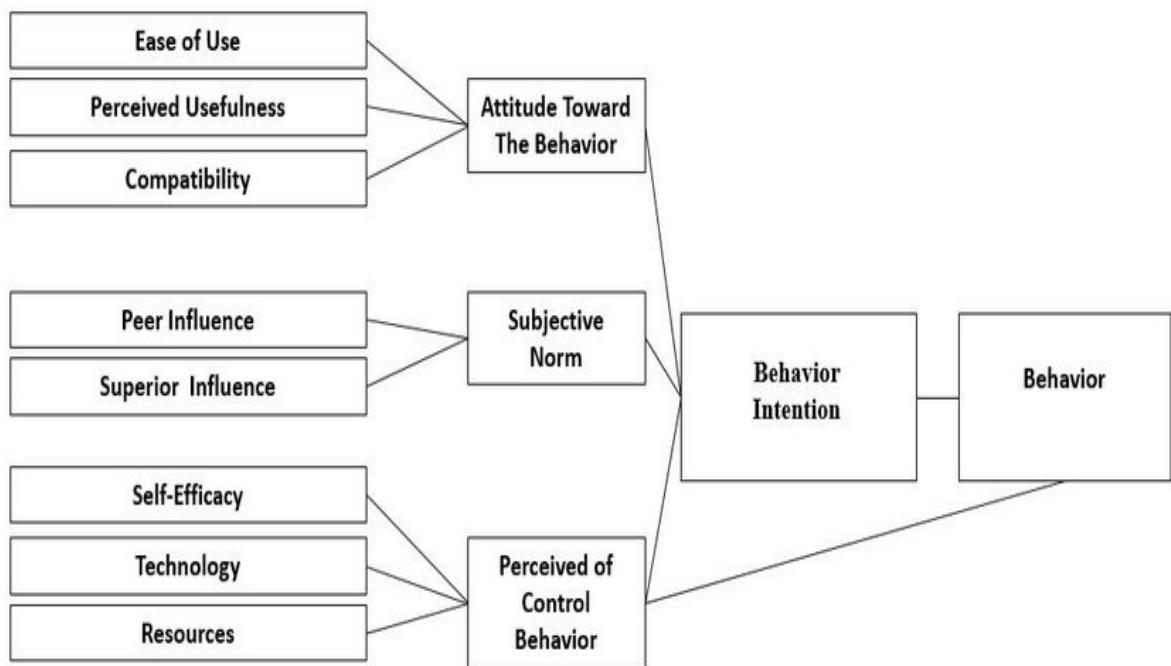
Figure 2.5: Decomposed Theory of Planned Behaviour

DTPB accounts for behavioural control. Behavioural control can be defined as the perception of an individual regarding how easy or difficult it is to perform a particular or

implement a behaviour. Studies suggest that behavioural control influences only behavioural intention, independent of the study context. Also, DTPB considers the subjective norm. Subjective norm describes an individual's perception regarding his or her ability to execute a particular behaviour. Lin and Hsieh (2007) suggest that subjective norm describes the perception of clients regarding the use of technology under the influence of the opinion of people or referent groups the client deems relevant. Such referent groups may include, friends, family, school colleagues or work colleagues. Subjective norm, to a large extent, influences the level to which an individual performs a particular behaviour about the opinion of people or groups the user deems relevant.

2.12.7 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) was adapted from the Theory of Reasoned Action (TRA) proposed by Ajzen and Fishbein (1967). TAM was proposed by Davis (1986). The writer suggests that two main **Technology Acceptance Model** factors determine adoption, acceptance and use of technology. These are perceived usefulness and perceived ease of use. Also, intention serves as the mediating variable of the actual use of the technological system.

Source: Davis et. al. (1989), Venkatesh et. al. (2003)
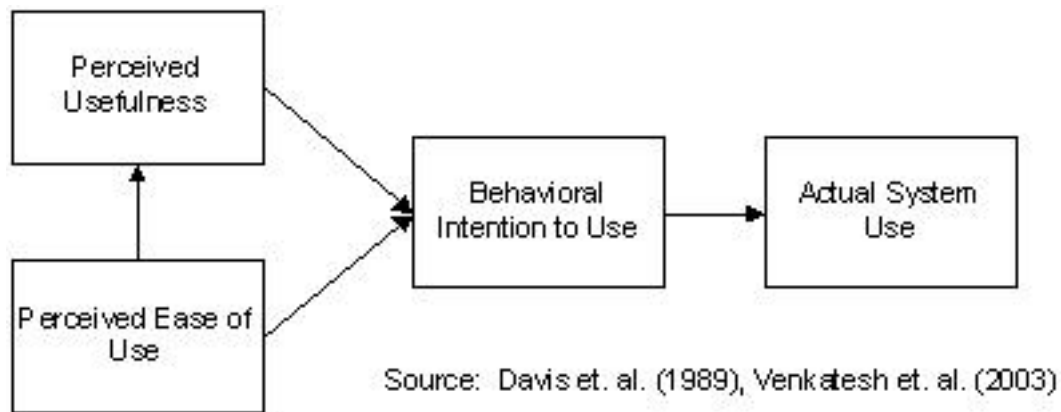
Figure 2.6: Technology Acceptance Model

Table 2.1: Theories of Acceptance and Use of Technology

Reference	Theory	Constructs
Ajzen and Fishbein (1967)	Theory of Reasoned Action (TRA)	• Attitude • Subjective norm • Behavioural intention • Behaviour
Ajzen (1985)	Theory of Planned Behaviour (TPB)	• Attitude • Subjective norm • Behavioural intention • Behaviour control • Behaviour
Taylor and Todd (1995)	Decomposed Theory of Planned Behaviour (DTPB)	• Attitude (perceived ease of use, perceived usefulness, compatibility) • Subjective norm (Peer influence, superior influence) • Behavioural control (self-efficacy, technology, resources) • Behaviour intention • Behaviour
Davis (1986)	Technology Acceptance Model (TAM)	• Perceived ease of use • Perceived usefulness • behavioural intention • Behaviour
Rogers (1962)	Diffusion of Innovations Theory (IDT)	Determinants of human behaviour regarding diffusion Innovation Communication channels Social systems Time Determinants of rate of innovation adoption complexity, relative advantage, trialability and observability

Perceived usefulness can be defined as an individual's perception of how useful adopting a particular technology is about the task to be executed or behaviour to be performed. Perceived ease of use describes how easy an individual perceives the use of technology to be. Scholars such as Venkatesh et. al. (2003) have simplified TAM by taking out the attitude construct which is originally found in TRA. Several attempts have been made by

researchers to extend TAM to enhance its predictive power in determining the use and acceptance of technology.

2.12.8 Innovation Diffusion Theory (IDT)

Rogers developed the Innovation Diffusion Theory (IDT) in 1962 to enhance our understanding of how various kinds of innovation is diffused through an organisation or a particular context. IDT was developed as a result of the conduct of several studies on diffusion in the 1950s and focused on the individual disparities regarding innovativeness.

According to Roger (2003), four main factors determine human behaviour with regards to diffusion. These are innovation, communication channels, social systems and time. Rogers defines innovation as an idea, a practice or an object that is perceived by an individual. Also, communication is defined as the process that results in the creation and sharing of information with people who share a common understanding. Rogers suggests that every innovation possess five attributes that influence individual behaviour as a way of explaining the rate at which people adopt innovation. These attributes are complexity, relative advantage, trialability and observability. IDT is deemed appropriate for studies that emphasize technology adoption, implementation and evaluation.

2.12.9 Personality Traits Theory

Personality refers to the behavioural pattern of an individual that influences his or her reactions in three main areas namely affective, cognitive and behaviour. Several researchers in the field of psychology and sociology have investigated the influence of personality that distinguishes individuals psychologically as well as how personality affects several human behaviours. Several perspectives through which we can understand personality abound, however, the most prominent or widely used theory is the Big Five personality inventory proposed by Terraciano and Costa (2004). The Big Five inventory model is characterized by five broad traits which collectively represent an individual's personality. These five traits are neuroticism, extraversion, conscientiousness, openness to experience and agreeableness (Costa & McCrae, 1992). The Big Five inventory model has been used extensively by organisational researchers to comprehend outcomes including job satisfaction, leadership, technology use and job performance (e.g. Funder, 2001; McElroy et al., 2007).

2.12.9.1 Extraversion

This refers to an individual's tendency to relate socially to the world. This includes activities such as positive emotion, sociability, excitement-seeking and assertiveness. Fundamentally, extroverts are favourably disposed to face-to-face interactions rather than media mediated interactions. As a result, extroverts tend to shy away from using physical artefacts as a means of communication. On the other hand, extroverts always seek to collaborate and share information with other individuals. Also, extroverts are action-driven individuals who willingly embrace exciting opportunities. In the context of Learning Management System (LMS) use, particularly in universities, where information sharing and collaboration is almost a norm, extrovert leaders are most likely to engage the use of LMS platforms to try out the innovation because it will enable them to share information and collaborate with others within the academic setup easily. Therefore, the following is hypothesized:

H1: Extraversion positively influences the use of LMS platforms in universities in Ghana.

2.12.9.2 Neuroticism

This describes the tendency of an individual to experience negative feelings consistently due to emotional instability. Neuroticism includes activities such as hopelessness, depression, stress and anxiety. Neurotic leaders tend to distrust and resist new changes in the way services and operations are executed. Such neurotic leaders do not feel positive about things such as technology and other innovations to which they have not been exposed before. When it comes to technology adoption, Roger (1995) suggests that risk-averse individuals tend to be sceptical in terms of adoption innovations. In effect, such individuals lag in the adoption of innovations. In higher educational institutions, the level of caution and scepticism tends to be high because any wrong decision or misfit between technology and institutional processes will lead to wrong grade allocations, financial miscalculations or errors, overbudgeting and information security compromise. Also, neurotic leaders may feel threatened by educational technologies and will try to minimize or avoid the use of LMS platforms. Hence, the following hypothesis is asserted:

H2: Neuroticism will influence the use of LMS platforms negatively in universities in Ghana.

2.12.9.3 Conscientiousness

It can be described as the characteristic of an individual to plan and be goal-driven. Such individuals tend to have a great sense of purpose. This personality trait is usually characterized by activities such as persistence, well-structured and organized, duty oriented and competence. Findings of prior studies suggest that conscientious individuals tend to use the technology for purposes that are more work-related and productive. In the context of universities in developing countries, conscientious leaders tend to use LMS platforms because it will enable them to increase productivity and income. As a result, conscientious leaders will promote the use of LMS platforms more. Hence, the following hypothesis is asserted:

H3: Conscientiousness will influence the use of LMS platforms positively in universities Ghana.

2.12.9.4 Openness

Openness to experience describes the tendency to consciously seek unconventional ideas based on intellectual curiosity. Openness includes activities such as problem-solving, imagination, curiosity and art. Individuals who are open to experience, predominantly curious individuals, tend to influence other individuals to try new behaviours in various contexts. As LMS platforms are being introduced in universities in developing countries, it is most likely that leaders who are open to new experiences will promote the use of these innovative technological platforms out of curiosity and inquisitiveness to help address institutional information sharing and processing challenges. Hence, it is hypothesized that:

H4: Openness to experience will influence the use of LMS platforms positively in universities in Ghana.

2.12.9.5 Personal Innovativeness with Technology

Personal innovativeness can be described as an individual's willingness to engage in new technology (Thatcher & Perrewe, 2002). Ideally, the personal innovativeness of an individual can be described as being context-specific. Thus, the educational context in which the Learning Management System (LMS) is used. Personal innovativeness is considered as the risk-taking attribute of an individual (Agarwal & Prasad, 1998). This inherent risk-taking attribute associated with personal innovativeness encourages individuals to pursue improved, new or trending innovative experiences (Thatcher & Perrewe, 2002). Individuals who demonstrate high levels of innovativeness possess an inherent desire to engage in new experiences they deem stimulating. Also, highly innovative individuals possess attributes such as the determination to engage in new and trendy experiences as well as self-confidence. Hence, such individuals express little concern about the outcome of their actions because they tend to be impulsive. Leaders with high personal innovativeness in tertiary institutions will consider services delivered through the LMS as innovative and their impulsive or risk-taking attribute will encourage their desire to engage these innovative platforms to experience the functional and structural capabilities this innovative platform presents with little concern regarding the outcome of their actions. Therefore, the following hypothesis is presented:

H5: Personal innovativeness with technology will influence the use of LMS platforms positively in universities in Ghana.

RQ 3: What is the role of leadership and governance in driving innovation in universities? To address the question, the researcher used the transformational leadership theory and the digital transformational model as theoretical frameworks to explain the role of leadership in driving innovation in universities.
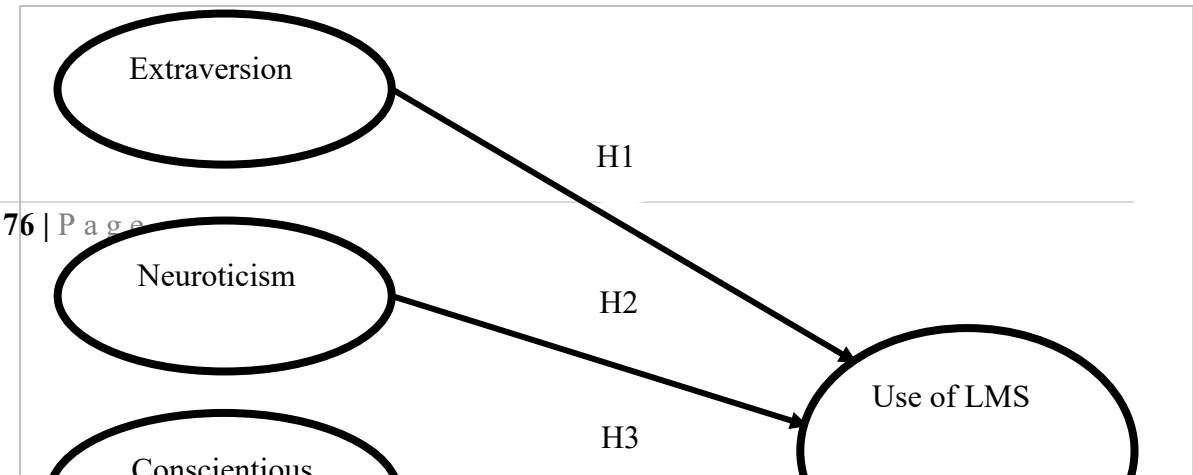
Source: Adapted from (Terraciano &Costa, 2004) and (Thatcher & Perrewe, 2002)

2.12.9.6 Leadership Theories

Leadership is a central variable in the equation that defines organisational success or failure and it has also been recognized as the factor that empowers people and ultimately determines an organisation's success or failure (Bennis & Nanus, 1985). Leadership is therefore a major way in which people change the minds of others and move organisations forward to accomplish identified goals. The study is underpinned by a framework structuring existing insights into four generic dimensions as change agents: people, means, effects, and goals. Based on this framework, the research examines contingency leadership, transformational leadership and transactional leadership theories using this paradigm. Theories associated with the leadership styles are considered in this study because specific leadership styles may not be best in all circumstances. This framework can therefore be used to explain the influence of the leadership theories (associated with a particular paradigm) on the existing leadership styles. These theories maintain that different leadership approaches are required for

different contexts. Contingent rewards Leaders provide rewards on the condition that allow followers conform with performance targets.

Transformational and transactional leadership are contrasting but complementary forms of leadership: The Transactional theory emphasises the importance of the relationship between leader and followers, focusing on the mutual benefits derived from a form of 'contract' through which the leader delivers such things as rewards or recognition in return for the commitment or loyalty of the followers, for example, leading through the active promotion of values which provide shared meaning about the nature of the organisation. The central concept in transactional theory is change and the role of leadership in envisioning and implementing the transformation of organisational performance (Allix, 2000). This leads to the leadership Styles Model in figure 1.1 below.

2.12.9.7 Transformation Leadership Theory

This approach emphasises change and the role of leadership in envisioning and implementing the transformation of organisational performance. Transformational leadership is a leadership theory that changes and transforms individuals, it involves assessing associates' motives, satisfying their needs, valuing them and creating a vision through inspiration to execute a change with committed followers (Northouse, 2016). In other words, transformational leadership is the ability to get people to want to change, to improve, and to be led to reach the goals of the team. Furthermore, transformational leadership is developed as a prominent leadership style that linked the responsibilities of leaders and followers, improves followers' environmental commitment and behaviour, and resulted in organisational performance that exceeded all expectations. Transformational leadership focuses on a team's vision, mission, motivations, and goals, and motivates people to complete the work or reach the desired outcome. Followers will support the leader who inspires them, effectively expresses their vision with passion, and helps get things done with excitement.

This approach stresses the positive changes that must occur for the group to succeed, and it requires the leader's involvement in the process, including assisting individual members in executing their r tasks. According to the functional approach, a leader must assess the task, group, and individual needs before allocating resources to them in terms

of priority. Bass et al., (2003) proposed four tenets (also known as the "four I's") that characterize transformational leadership namely idealized influence, individualized consideration, inspirational motivation and intellectual stimulation. Idealized influence refers to presenting a good image with great self-confidence on basis of respect. Leaders who are exceptional role models for employees are characterized as having idealized influence. Followers generally trust and respect leaders with idealized influence to make more effective decisions for the organisation. Individualized consideration describes the level of attention the leader gives his or her subordinates as well as the best strategies the leader adopts to ensure that his or her followers are well taken care of. Inspirational motivation emphasizes the presence of a strict yet positive perspective of the future to subordinates or followers. Leaders who are inspired to motivate their teams to contribute to the organisation's vision and goals are known as inspirational motivators. Leaders inspire and encourage subordinates to adopt a positive view of the future and stimulate them to work towards the goals and objectives of the organisation. Intellectual stimulation refers to how leaders actualize creativity and invention by adopting a new way of doing things and executing work responsibilities. Leaders who stimulate invention and creativity by challenging a group's usual assumptions or attitudes are known as intellectual stimulators. Managers who are intellectually stimulated encourage creative and critical thinking to improve the organisation.

2.13 CHAPTER SUMMARY

According to the literature reviewed, the world is gradually shifting away from traditional methods of educational delivery and toward the usage of electronic devices to facilitate teaching and learning. Also, due to a rise in student population and the proliferation of the COVID-19 pandemic, the use of LMS to assist teaching and learning has become critical in the expansion of universities around the world. University leaders play a critical role in promoting the adoption of technology for teaching and learning. Universities have made significant attempts to incorporate e-learning methodologies over the last decade, however, the leadership style employed may either support or discourage effective technology utilization

CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

3.1 INTRODUCTION

This chapter explains in detail the research approach and methodology of the study. First, the study's research philosophy is discussed, followed by the pragmatic research paradigm. The subsequent subsections of the chapter discuss the research design, population, sampling, instrumentation, instrument reliability and validity, data collection procedure and data interpretation methods used in the study. The chapter describes the process of data coding for both qualitative and quantitative data. The study's various methods and statistics are discussed, including how the correlation between independent variables was tested and its significance. The chapter concludes by discussing the ethical issues raised in the study.

3.2 RESEARCH METHODOLOGY

3.2.1 Research Paradigm

The research was a scientific and systematic process to explore the role of leadership in the adoption of LMS through data gathering and data analysis is to gain extensive knowledge about the situation in universities. The study used a Critical Realist (CR) approach to investigate the key drivers of effective technological innovation implementation in universities.

CR assumes that various structures are independent and that investigation into them is possible. Organisational impacts, according to a critical realist, are not determined solely by pre-determined factors; rather, these (pre-determined factors) are just one of the elements that should be considered for the practical deployment of an intervention in an institution. CR does not accept traditional research approaches thoughtlessly; instead, it advocates for the use of a positivist and interpretive approach, as well as an extensive and intensive research design that is both constant and versatile. As a result, CR is of distinct interest in the study of technological innovations, which have important implications for both scientific methods (due to their technological characteristics) and social science (due

to their applications in deeply human contexts such as organisations). Thus, CR contemporarily addresses the central concerns of both natural and social science regimes accordingly. In arguing for CR, Dobson et al. (2007) noted that it is frequently seen as a bridge between empiricism and positivism on the one hand, and interpretivism on the other, and can thus be said to reinvent realist ontology in a new and more advanced form.

Positivists conduct scientific research with the aim of testing theory. Positivists suggest that there is only one truth when it comes to knowledge. Hence, positivists adopt mathematical and logical analysis when explaining how the social and physical world is constructed. Positivists assume that outcomes can be predicted by existing or developed laws and these laws must be generalizable. Truth is objective and independent of subjective interpretations when it comes to positivists. Interpretivism assumes that well-defined laws do not explain social reality adequately because of the complex interactions associated with the social world. Sobh and Perry (2006) suggest that interpretivism assumes that our reality is socially constructed and can be explained through shared meanings. Thus, the reality is perceived or interpreted as relative and has a shared meaning (Walsham, 1995). Unlike positivists, interpretive do not seek to test the theory, affirm or falsify conjectures. Also, they assume that reality is subjective and should be interpreted from the perspective of the shared meanings individuals obtain as a result of their interactions with their society.

The paradigm influences how researchers make decisions and conduct research. As a result, each researcher has his or her definition of reality and knowledge. These facts and knowledge form the foundation of our worldview and serve as a paradigm for social scientists (Bhattacharjee, 2015:65). Philosophical assumptions inform the paradigm in three ways: ontology, the nature of existence or reality (Cumming, 2012:4; Denzin, 2010:419); epistemology, the nature and forms of knowledge; and axiology, which refers to the ethics of the study (Scotland, 2012:14). Figure 3.1 depicts a pictorial summary of the paradigms of post-positivism, constructivism, and pragmatic interconnectivity:
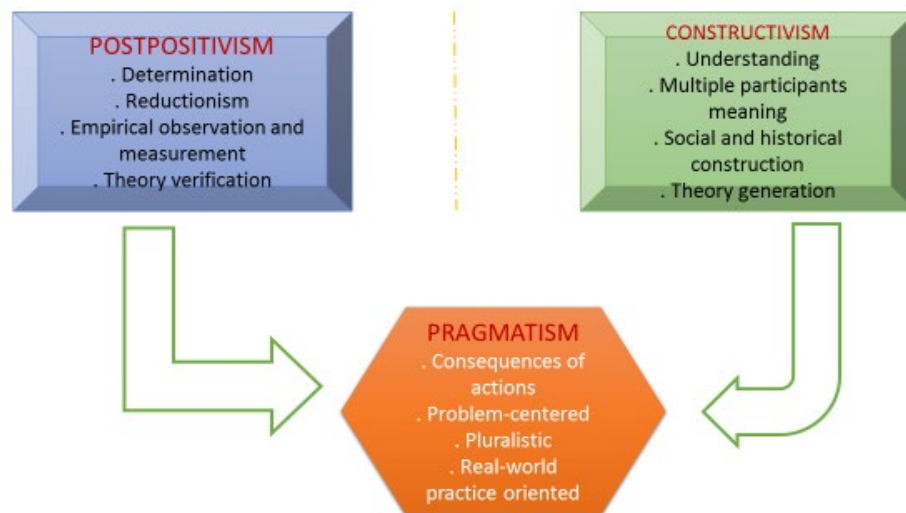
Figure 3.1: Interconnections between post-positivism, social constructivism and pragmatic paradigms.

Source: Adapted from Creswell (2014)

This study adopted a mixed approach in both data collection and analysis to better understand the underlying issues in technology implementation. The interaction between these two approaches (mixed method) compensates for the limitations of surveys by incorporating data from interviews (Flick, 2011:8); and, Diversity – using different research methodologies inquiry components to increase the size and scope of the research. The research gains more insight by combining quantitative and qualitative methods in the same study (Caruth, 2013). Gerfalk (2013) and Caruth (2013) observed that using multiple paradigms would make it possible to capture: (a) the objective (material) world, (b) the subjective (personal) world, and (c) the social (intersubjective) world. To accomplish these objectives, data is gathered via questionnaires and various experimental designs (Cohen et al., 2008:9; Pinto, 2010:5). Similarly, this study employs a survey design to collect information from which conclusions are drawn. The respondents' opinions were gathered and measured directly using questionnaires. The qualitative approach used in this study was also based on constructivism philosophy. This is a philosophical argument that holds that 'meaning' is established rather than discovered as a result of interaction between perception and the world (Scotland, 2012:11).

This study adopted both positivism and interpretivism as the research philosophy. This is because the researcher sought to understand how leaders in universities in Ghana promote the use of LMS in their institutions based on the meanings they share regarding the interactions with LMS in social contexts. Also, definite laws will be developed in the form of hypotheses to understand the influence of the personality characteristics of leaders and how these characteristics promote the use of LMS.

3.2.2 Research Design

This study used a sequential explanatory design (Phase 1 and Phase 2). A quantitative data collection and analysis phase is followed by a qualitative data collection phase, which is used to explain the initial quantitative results Creswell and Plano Clark (2011). It consisted of an online survey through the software "Google Forms" in which both university administrators and students were asked to fill out a questionnaire with a set of questions, as well as an interview process related to the role of leadership in promoting the use of LMS. A total of 210 respondents from 3 universities in Ghana participated in the two phases of the research. The explanatory sequential design entails collecting and analyzing quantitative data first, followed by collecting and analyzing qualitative data, which is then integrated during interpretation, with equal priority given to the two phases.

The sequential explanatory approach necessitates the collection and analysis of quantitative (QUAN) and qualitative (QUAL) data. The quantitative data is prioritized, and the results are incorporated into the research analysis process (Creswell & Plano Clark, 2013). One of the primary goals of research design in explanatory research is to avoid creating inaccurate inferences (Creswell, 2014). It connects the steps for developing, analyzing, and collecting qualitative research issues (Creswell, 2009). The researcher initially collected and analysed quantitative data, then in a second segment analysed qualitative data from the interview to triangulate the results with the quantitative results. This process was followed because quantitative data does not provide a complete picture of a phenomenon. The qualitative findings were used by the researcher to interpret and explain the quantitative data gathered through interviews. The sequential explanatory research design was used in the study because it allowed the researcher to summarise the findings in the quantitative and qualitative phases separately and holistically to draw conclusions.

3.3 RESEARCH DESIGN: MIXED METHODS

The mixed-method approach is pertinent in a new project on a complicated subject that yields complex and highly customized answers to research questions Mixed methods research can be integrated at the technique, methodology, and paradigm levels, according to Greene (2015). Equal-status mixed methods research designs, according to this viewpoint, are possible and arise when both qualitative and quantitative elements, approaches, and thinking are of equal value, they alternate control over the research process, they are in constant interaction, and the results they generate are consolidated during and after the research process. Finally, using mixed methodologies should assist in answering research questions while also increasing knowledge and validity, resulting in various validity justifications (Johnson & Christensen 2017).

Quantitative data of the study, data was collected from study participants at UPSA, University of Ghana, Legon and UENR. The participants to provided information for testing the proposed conceptual model. Thus, the various hypotheses developed based on the conceptual model and was tested using the quantitative data that was obtained from the respondents of the study. Qualitative data was solicited from the respondents of the study using in-depth interviews. Particularly, the qualitative aspect of the study focused on obtaining in-depth information regarding the kind of LMS being used at universities in Ghana and the strategies leaders are adopting to promote its use in the university.

This study adopted mixed methods research methodology for data collection and analysis by combining quantitative and qualitative data (Creswell & Plano Clark, 2013). Qualitative and quantitative data will be collected from administrative and academic leaders as well as student leaders of universities in Ghana to understand how leaders promote the use of LMS in tertiary institutions. Also, the survey instrument and interview guide for quantitative and qualitative data collection were developed using the principles of personality trait theory, personal innovativeness with technology, and digital transformation theory. The mixed-method approach enabled the researcher to combine quantitative and qualitative approaches to provide a better understanding of the research problem and study objectives. Also, the mixed-method provides an in-depth understanding and corroboration of study phenomena.

The seven steps indicated in the process of conducting a mixed-methods study in figure 4.2 below were observed from the planning stage of this research study through to the data analysis stage.
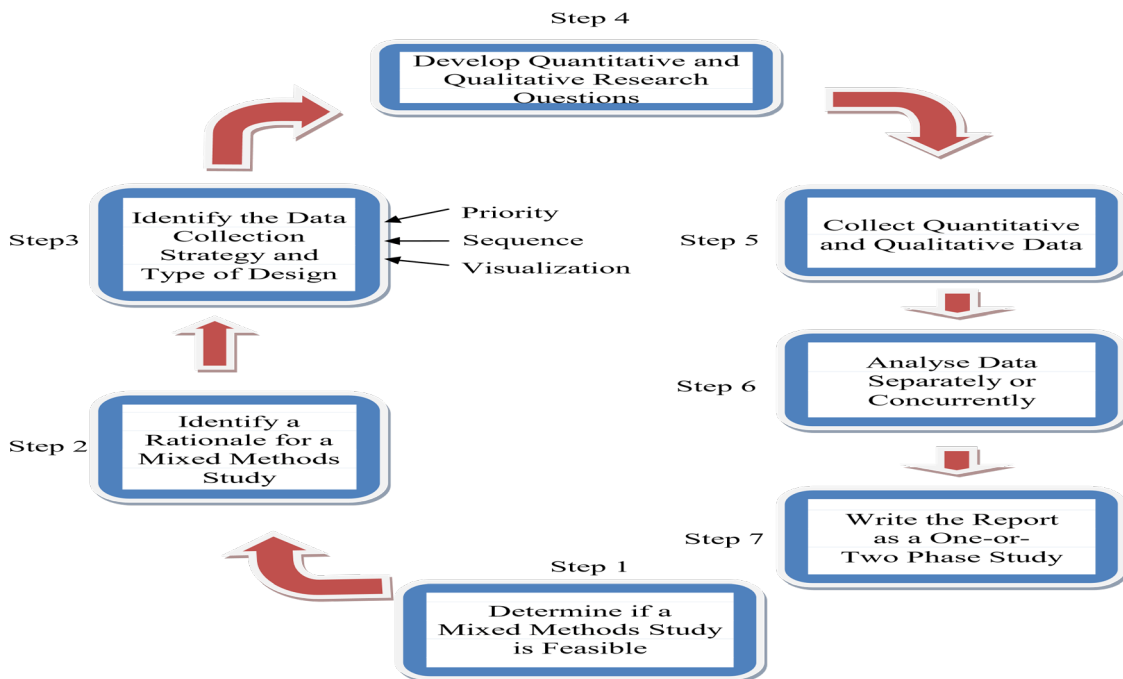
Figure 3.2: Steps in the process of conducting a mixed-methods study.

(Adapted from Cannon, 2004)

3.4 POPULATION AND SAMPLE

The target population for the study was all public universities in Ghana. A study's target population is the entire set of units for which survey data is used to make inferences. According to Wallen (2010), the target population is chosen by selecting an accessible population. They also pointed out that the researcher's target population is 'ideal,' whereas the population which is accessible, is 'realistic'. Ghana has 15 public universities, 8 technical universities, and 81 private tertiary institutions offering degree programmemes, according to the Ghana Tertiary Education Commission (GTEC, 2020). The accessible population used for the study were three public universities, namely University of Professional Studies, Accra (UPSA), University of Ghana and University of Energy and Natural Resources (UENR). The three institutions were purposively chosen to cover

location, areas of focus and speciality. The population was divided into non-overlapping homogeneous groups and from each group the researcher randomly selected members based on their relevance and involvement in the issue under investigation. This method helped to improve efficiency and gave each member an equal opportunity of being selected.

According to Vale and Stabile (2016), researchers can use probabilistic or nonprobability purposive sampling techniques to select their sample. Probabilistic purposive sampling is the use of a random selection method in which the population has equal chances of being selected (Vinkatesh, Brown, & Sullivan, 2016). Boddy (2015) posits that researchers should consider using the purposeful selection as the most effective method of selecting participants. In selecting the participants for the study, the researcher used purposive sampling to select the 3 top management official's positions, 2 deans, 2 heads of departments, 60 lecturers, 2 administrative heads and 1 student leader (70 participants and respondents from each university) with experience in strategic and organisational leadership. The researchers used purposive sampling because they can focus on the participants with the applicable knowledge and expertise on the phenomenon (Venkatesh et al., 2016). It also eliminates bias from the selection process, resulting in representative samples.

Table 3.1: Population and Sample

University	Senior Members Statistics		Total Population	Accessible Population	Sample
	Male	Female			
University of Professional Studies, Accra	276	220	496	105	70
University of Ghana	1119	674	1,793	246	70
University of Energy and Natural Resources	274	87	361	94	70

3.4.1 Sampling Technique and Sample Size

The most delicate activity in a study is the selection of research participants (Gaus, 2017). The purposive sampling technique was adopted, thus only people who use of the LMS on the university campuses were contacted. The use of purposive sampling techniques is justified by the fact that each member of the population is equally likely to be chosen as part of the sample, which elicits different perspectives on the problem and provides an in-depth understanding of the phenomenon under investigation (Palinkas et al., 2013). The sample size for the study is described as selecting the research participants that are representative of the entire study population (Sekaran & Bougie, 2010). Thus, the Yamane formula was used to determine the sample size for the study. The formula is given as indicated below:

$$n = \frac{N}{1 + N(e)^2}$$

n is the sample size

N is the total number of the study population

e is the error term which is 5%

The total population of the three institutions is 445. hence, $N = 445$

$$n = \frac{445}{1 + 445(0.05)^2}$$

Therefore, $n = 210$

Accordingly, an adequate representation of the whole research population is a sample size of 210 participants. This sample size was divided among three institutions in equal proportion to ensure even distribution and collection of data. This procedure was chosen because research has shown that it reduces sampling error and provides data on every individual of a population (Isreal, 2009).

According to Fraenkel and Wallen (2000), there is no clear cut definition as to what constitutes an acceptable or sufficient sample size; however, a sample should be as large as the researcher can obtain with a reasonable investment of time, energy, and money. Since the objective of this study is to look at the role of leadership in promoting the adoption of LMS in universities, the researcher deemed it necessary to use purposive

sampling to select participants and respondents from top management officials, deans, heads of departments, lecturers, administrative heads and student leaders because of their experience and the role they play in promoting the adoption of LMS in Ghanaian universities.

Purposive random sampling was used to select two hundred and ten (210) respondents from the accessible population. The quantitative study sampled lecturers from the three universities, while the qualitative study sampled Deans, HODs, SRC Executives, Senior Managers, and Administrative Staff. The quantitative study included 180 respondents, while the qualitative study included the remaining 30 respondents. The quantitative study included 60 lecturers from each of the three universities. In the qualitative study, 10 respondents from each of the three universities were chosen: Senior managers of universities (vice-chancellors, registrars and directors), Deans, HODs, Administrative staff and SRC Executives. Respondents must have occupied their current position for a minimum of an academic year. This enabled respondents to give rich information for the study because of their experience. Also, the qualitative results complemented the quantitative data to increase the credibility of the process.

Students leaders in the context of the study represent the students who use the e-learning system. Lecturers include individuals who administer the courses to learners through e-learning platforms whiles the administrators include persons who supervise and monitor the LMS to ensure the smooth running of the e-learning system. In addition, top management officials, deans and heads of departments were included because of their leadership role in the implementation of the LMS. The 3 universities identified for this research have similar backgrounds about their governance structure, school facilities, funding models, and more importantly, their performance patterns but in different geographical locations.

3.4.2 Instrumentation and Data-Collection Strategies

This section explains how the research instruments were generated, as well as how the instruments helped in answering the research questions. To collect data, researchers use a combination of data collection instruments such as face-to-face interviews, observations, and documents to elicit the experiences from a participant's perspective to

understand the significance of the phenomenon (Farooq & Villiers, 2017; Wan, Ip, & Cheng, 2016). Methodical triangulation involves researchers using multiple options such as interviews, observations, questionnaires, and documents to collect and interpret data, whereas theoretical triangulation involves applying various theoretical schemes in the analysis of the phenomenon (Annansingh & Howell, 2016).

3.4.2.1 Questionnaires

The first stage involves questionnaire development from constructs postulated by literature on the leadership role of management and governance in the adoption of LMS innovation, the second stage was a revision of the questionnaire to ensure reliability and accuracy. To answer the research questions, the questionnaire for the survey was designed based on the hypothesis developed from the literature review. After the initial questionnaire was developed from constructs postulated by literature on the leadership role of management and governance in the adoption of LMS innovation, the second stage of refinement was undertaken to ensure reliability and accuracy. The questionnaire for the survey was designed based on the hypothesis established from the literature review to answer the research questions. The questionnaire was designed to help elicit responses on demographic data, their e-learning usage and the factors that enable or inhibit their e-learning adoption. Each respondent was posed with a series of questions and asked to respond to it using the Likert Scale ranging from, one to five where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

3.4.2.2 Interviews (Qualitative Data Collection)

Interviews were conducted to collect the qualitative data. The researcher was able to explore ideas and further explain quantitative results using qualitative data. While quantitative data is retrieved numerically, qualitative data presented a narrative and respondents' experiences. This was significant because the rich details shared by respondents demonstrate how the Learning Management System implementation affects teaching and learning which ultimately informs decision and policy for system improvement. The researcher used qualitative surveys to collect detailed information about the adoption and use of LMS in Ghanaian universities in order to develop an informed hypothesis.

3.4.3 Quantitative Data-Collection Procedures

Quantitative data collection started immediately after approval of the ethical clearance from UNISA (Appendix, A). In addition to this, a letter of permission was received from the three universities (Appendix, B-C). Following this, instrumentation validation activities were conducted through pilot testing in the first phase of the quantitative data-collection procedures. The Researcher first visited the university with the introductory letter and to get the contacts of the participants and respondents. All the questionnaires for the research were sent to potential respondents via email, inviting them to answer the questionnaires using Google Docs. An exploratory sample of twenty five (25) copies of questionnaires were distributed to 60 lecturers to test the internal consistency, honesty constructivism, and stability of the questionnaire. The second phase involved interviewing 5 Senior managers of universities (vice-chancellors, registrars and directors), 2 deans, 2 heads of departments, and 1 student leader (70 participants and respondents from each university). From 15 October 2021 up to 30 December 2021, the researcher administered the questionnaire via google docs.

3.4.4 Qualitative Data-Collection Procedures

The qualitative data collection process began after receiving ethical clearance and signing the consent forms by the participants. The selected participants included Senior managers of universities (vice-chancellors, registrars and directors) and other senior members depending on their job roles and responsibilities. The interview protocols (Appendix D) guided the discussions with the respondents regarding the purpose of the study, their rights such as consent to participate or withdraw from the interviews at any given time, and their right to ask questions when they need clarification during the interview. The researcher used data collection instruments such as a tape recorder and journal notes. However, permission was sought from the respondents before tape-recording the interviews. Preliminary discussions with the participants included the circulation of the objectives of the study and different data collection techniques such as personal in-depth interviews using open-ended questions. The interviews were conducted via zoom, google meet and telephone.

The qualitative study targeted University management, Deans, HODs, Administrative staff and student leadership of the selected Universities in Ghana. The researcher sampled 30 research participants for the study; 10 participants from each of the three Universities. Semi-structured interviews were conducted to gain data from the participants. Before conducting the interviews, participants were made to understand that the study was purely for academic purposes. All the participants were interviewed on different dates with a guide that was designed following the research objectives. The length of each interview varied based on the responses given by the respondents and the follow-up questions by the researcher. The responses were given by the participants were put under themes and sub-themes. These analyses were done using Microsoft Word and Nvivo.

3.5 DATA ANALYSIS AND INTERPRETATION

The questionnaire data were analysed using both descriptive and inferential statistics. Through studying data and grouping similar items, the data gathered from questionnaires, interviews, documents, and related literature was organized, analysed, and interpreted. Data collected using a questionnaire was arranged and given codes for each of the questions. Numerical values were also assigned to each response ranging from five to one (5 – 1) for strongly agree to strongly disagree. Following this, raw data were fed into the computer and analysed using SPSS version 24. The interviews were conducted online and were unstructured to ensure dependability and flexibility.

3.5.1 Quantitative Data Analysis

A descriptive statistical analysis was performed, which included the use of frequency tables, percentages, and measures of central dispersion and tendency. The statistical package for social scientists (SPSS) version 24 for processing, organizing and analysing quantitative data was used to analyse data obtained from the survey questionnaire. The researcher used a correlation analysis to assess the strength of the relationship between the independent variables (leadership personality traits and personal innovativeness) and the dependent variable "use of LMS." This revealed the nature and strength of the relationship between the study's variables. The quantitative data was also analysed using factor and regression analysis.

3.5.2 Qualitative Data Analysis

According to Muleya, Fourie, & Schlebusch, (2017) qualitative researchers in analyzing data must describe only the experiences of the participants with the phenomenon to prevent the influence of personal bias. The qualitative data collected through interview and document analysis were reported directly by the researcher, narrated and described. The opinions, views and beliefs generated via unstructured interview were first translated, coded, categorized and thematically organized and interpreted using descriptive narrative procedures. Qualitative coding refers to the identification of data segments that relates to a theme, category or instance (Levin & Silver, 2014). Coding gives more insight into what qualitative data reveal and may even point to the importance of gathering additional data to better understand the phenomenon under investigation. Data obtained from interviews was compared with the empirical literature. This process continued till an expected concept saturation was reached. Nvivo coding software was used as the text analysis tool for assessing and interpreting interview conversations. Nvivo software helps in the organisation and storage of data (Chandra & Shang, 2017).

3.6 RESEARCHER'S ROLE

The researcher was responsible for data collection, as well as reporting and interpreting the findings of data obtained from using the mixed methods design. The interviews provided the opportunity for participants to share their experiences across the research process and to answer the questions more deeply from different perspectives. Closed-ended questionnaires and semi-structured interviews were used to obtain appropriate data from respondents involved in this study.

3.7 VALIDITY AND RELIABILITY OF THE STUDY (QUANTITATIVE)

According to Ang, Embi, and Yunus (2016), validity and reliability are critical factors to consider when guaranteeing quality research. It ensures that the information gathered is trustworthy and reliable. The degree to which results are consistent over time and a representative sample of the total population under study is referred to as reliability (Joppe, 2000), whereas validity ensures that the data collected is trustworthy. Cronbach's alpha to assess the reliability and validity of the measures.

3.7.1 Validity

The magnitude to which a research instrument – a study design, experiment, or any measuring procedure – measures what it is intended to measure is referred to as its validity. This is about the appropriateness of the interpretation of the results, and it is design-specific (Kornbluh, 2015:397; Wiersma & Jurs, 2009: 356). The validity, according to Patrick, Burke, and Gwaltney (2011: 1), should have answered the question, "Does that measure the significant characteristics of concepts that developers or users purport it to assess?" The draft survey tool was created from the variables in the conceptual model to ensure validity. Furthermore, mixed researchers according to Creswell (2012:551) should consider the conversion validity, which occurs when quantitative data is converted to a qualitative aspect or vice versa, thus quantising or qualifying data.

The extent to which quantitative and qualitative sampling designs produce quality meta-inferences is shown by sample integration validity, which was appropriately considered by the researcher. In this study, both content validity and construct validity were used. Qualitative researchers use validity checks to resolve internal and external threats to data analysis that may potentially ruin the findings' credibility (Bennett & McWhorter, 2016). Internal and external validity methods are measures and approaches that researchers use to improve the accuracy of their research findings (Husbands et al., 2017).

3.7.2 Reliability

The degree to which findings are consistent over time and an accurate representation of the total population is referred to as reliability (Gaus, 2017). Researchers use measures to improve the consistency of data collection, coding, and analysis to achieve reliability (Wan, Ip, and & Cheng, 2016). According to Gaus (2017), reliability tests include authenticating evidence originating from various sources of data and perspective, and research includes measures for assessing the quality of the data collection process, coding, and analysis. Through participant verification to correct any misrepresentations,

the researcher ensured the study's credibility and thoroughness. The member checking technique is used by qualitative researchers to improve the research's accuracy, reliability, legitimacy, and generalizability (Pompeii, 2015).

3.7.2.1 Pilot testing

The pilot study was a small replica of the main study, targeting a small number of people who shared characteristics with the target group of respondents, namely Vice-Chancellors, Registrars, Directors, Deans, HODs, Administrative Staff, Lecturers, and University Students.

The purpose of the pilot study was to determine the feasibility of the study; to test the instrument's reliability and validity, as well as the trustworthiness of respondents, for data collection in the main study; to determine how suitable, comprehensible, and practical the instrument is; to address any problems before the main study; and to check the time required to complete the questionnaire. The pilot study demonstrated that the questionnaire did not contain any confusing items and that respondents reported it easy and quick to complete. Maxwell (2012:227) also states that the questionnaire should not be used in the research without adequate piloting. Maxwell also described pilot testing as a method of testing instruments in a small sample of interviewees to identify and eliminate potential issues. Items in the questionnaire were checked for accuracy in this thesis by calculating the Cronbach's alpha value (α) coefficient, which is the most commonly used test to measure the internal consistency of instruments (Heale & Twycross, 2015).

Before proceeding to collect the actual data for the study, pilot testing was conducted using a sample size of twenty (20). This was conducted to evaluate the feasibility of the proposed items of the variables and improve upon them. It is imperative to perform reliability statistics in every study as it ensures that the measure of a constructor scale is consistent or dependable to be used.

The variables of the study include the use of LMS (dependent variable), neuroticism, extraversion, openness, agreeableness, conscientiousness and personal innovativeness (independent variables). The use of LMS was measured with 4 items and it has a Cronbach's alpha of 0.877. All the independent variables were measured with 6 items

each. Neuroticism had Cronbach's alpha of 0.758, extraversion had a Cronbach's alpha of 0.916, openness had a Cronbach's alpha of 0.588 and agreeableness was 0.417. The Cronbach's value of conscientiousness and personal innovativeness were 0.250 and 0.571 respectively.

According to Hulin, Netemeyer and Cudeck (2001), the accepted rule is that a Cronbach's alpha of 0.6 – 0.7 implies an acceptable reliability level and 0.8 or higher shows a very good reliability level. Conversely, values more than 0.95 are not good. On the back of the values, the variables that did not need any modifications were the use of LMS, neuroticism and extraversion. The values of the three variables were above 0.60 whereas the remaining variables (openness, agreeableness, conscientiousness and personal innovativeness) were less than 0.60 so it was imperative to modify the items under the remaining variables. To ascertain items that should be maintained and the ones to be deleted to meet the standard Cronbach's alpha, item-total correlation was used. From the item-total correlation results, 3 items under openness were deleted and its Cronbach's alpha rose to 0.719. With agreeableness, after the modifications, its Cronbach's alpha was still below 0.60 so that variable had to be deleted. Conscientiousness was initially measured with 6 items but after deletion of some items causing inconsistencies, the Cronbach's alpha rose to 0.616. Lastly, the Cronbach's alpha of personal innovativeness after the deletion of some items was 0.845 and this indicates an acceptable reliability level.

Table 3.2: Reliability Test Results with Cronbach's Alpha

Variables	No of Items	Cronbach's Alpha
Use of LMS	4	0.877
Neuroticism	6	0.758
Extraversion	6	0.916

Openness	3	0.719
Conscientiousness	3	0.616
Personal Innovativeness	3	0.845

Source: Survey Data (2022)

3.8 TRUSTWORTHINESS OF THE STUDY

Cope (2014) indicates that trustworthiness in qualitative research is of paramount importance to the efficacy and integrity of the research findings. Pilot and Beck (2014) define trustworthiness as the level of confidence in data, interpretation as well as methods utilized in ensuring the quality of the study. It is expected that researchers in every study must establish the process and procedures required for a study to be regarded worthy by the audience (Amankwaa, 2016). Lincoln and Guba (1985) and Gay, Mills and Airasian (2012) indicate that researchers in a qualitative study can establish the trustworthiness of their respective studies via credibility, transferability, dependability and confirmability.

3.8.1 Credibility

The credibility of the study is the most indispensable criterion (Polit & Beck, 2014) and it is connected to how congruent findings of the study are with reality (Denscombe, 2007). The findings must corroborate with the actual happenings in the broader population. In ensuring credibility, it is imperative to engage some activities to persuade readers that the data are accurate and right. The activities give assurance that the data collected conform with good practice (Denscombe, 2007). The techniques utilized in the establishment of credibility include prolonged interaction with participants, getting familiar with the setting, building trust, and efforts to know the participants better to obtain rich data, response validation and triangulation. Response validation means going back to the participants with the data after the study to ascertain the validity of the findings. Triangulation was done by putting the same questions to different participants to explore the issue at hand. Triangulation was done to eliminate any form of bias and it contributes to the validity of data analysis (Fraenkel & Wallen, 2009).

3.8.2 Transferability

Transferability refers to the degree to which the findings of the study can be applied in other contexts with other participants from the angle of the reader (Lodico, Spaulding & Voegtle, 2010). Transferability is assessed by focusing on the richness of information added to the study and the volume of details provided regarding the context in which the study happened. It is the responsibility of the reader to evaluate transferability therefore rich detailed descriptions or information aids the reader to pass comments regarding the similarity of participants and other features of the research site. To conclude, transferability focuses on how well the study has ensured that readers can decide whether analogous procedures work in their respective settings (Lodico et al., 2010).

3.8.3 Dependability

Dependability is the stability of the data over some time and the conditions of the study. It is parallel to the reliability in quantitative study however comprehending stability of conditions is heavily dependent on the nature of the study (Polit & Beck, 2014). Moreover, dependability comprises the part of consistency and indicates whether analysis procedures conform with the embraced standard of a specific design. In maintaining dependability in this present study, the interpretation of the results was not done on the back of the researcher's penchants and opinions but rather grounded in the data. A description of the steps taken from the start of the study to the reporting of the results was provided.

3.8.4 Confirmability

Confirmability signifies that the researcher has identified the accuracy of the results via particular strategies (Stoner, 2010). Polit and Beck (2014) indicate that confirmability is the extent findings are consistent and can be repeated. Confirmability can be achieved via a plethora of methods including respondent validation, triangulation and utilizing strong data collection methods among others (Stoner, 2010). In this present study, the usage of interviews represent a strong data collection tool since they were conducted when the researcher was with only the participant. According to Stoner (2010), this is one of the strong data collection methods.

3.9 ETHICAL CONSIDERATIONS

Ethical consideration is a set of principles and values that guide the designs and practices of research and that should be followed when conducting human research to ensure that no one acts in a way that is detrimental to society or an individual (Saunders, et.al, 2012). Self-determination, informed consent, anonymity, and confidentiality are among the principles addressed in this section of the study. The following ethical considerations were taken into account during the research following the university's rules and regulations for conducting research involving human subjects. These concerns were applied to both the quantitative and qualitative sections of this study's research.

3.9.1 Permission to Conduct Research

The UNISA College of Education Research Ethics Committee approved and awarded an ethical clearance certificate before data collection (Appendix A) The researcher also received a letter of permission from the universities after obtaining the ethical clearance certificate, and then entered the research site (Appendix B). Before starting to collect information, respondents were briefed on the purpose of the study (Appendix E).

3.9.2 Informed Consent

The researcher obtained participants' consent and had them sign an informed consent form from the UNISA College of Education Research Ethics Committee. This is because participants retain the right to choose whether or not to participate in a research project or study (Green, 2015). Throughout the study, the researcher studied, understood, and applied the ethical requirements, and how to treat human participants with dignity. The consent form also included a concise description, objective, and purpose of the study, as well as the criteria for selecting study participants. All participants in the study were fully informed about the nature and purpose of the study, as well as the procedures that would be used. There was also a space for participants and researchers to sign to confirm the agreement.

3.9.3 Self-Determination

Participants were informed of their right to refuse to answer any question with which they were uncomfortable, as well as their right to withdraw from the study at any

time. Birt et al. (2016:1804) contend that confidentiality is addressed in data collection and storage systems that do not identify research participants. In other words, no information that could be used to identify the participant can be revealed. Codes, on the other hand, can be used to ensure confidentiality (Birt et al., 2016:1804). In this study, the personal data of interviewees and discussion group participants were presented anonymously.

3.9.4 Confidentiality

The researcher acted with integrity and professionalism to prevent any potential information leakage, including the willful or unwilling destruction of data transcripts. To protect the identity of the participants, the distinctive alphanumeric codes S1, S2, and S3 are used to represent groups of participants to conceal their identities.

3.10 CHAPTER SUMMARY

This chapter describes the methodology in detail and explains why mixed methods research, which combines quantitative and qualitative methods, was chosen. The chapter describes the population and sampling techniques, and the data-collection strategies for the study, as well as methods for gathering data from selected participants and respondents via questionnaires, interviews, and document review. Validity and reliability were addressed in the selection, analysis, and interpretation of qualitative and quantitative data. There were discussions about ethical issues such as informed consent, privacy, self-determination, and confidentiality. The chapter also set the basis for the following chapter by discussing the data analysis methods used in the study.

CHAPTER FOUR
ANALYSIS AND INTERPRETATION OF DATA

4.1 INTRODUCTION

This chapter presents, analyses and discusses data collected from respondents and participants. The findings were presented according to the research questions posed in Chapter 1 as well as the theoretical and conceptual frameworks outlined in Chapter 2. The data presentation and analysis were done following the research design discussed in Chapter 3. Furthermore, data interpretation and analysis were both quantitative and qualitative. The qualitative data findings were used to expound the quantitative data findings.

4.2 ANALYSIS AND INTERPRETATION OF DEMOGRAPHIC DATA

This section focuses on the demographic characteristics of lecturers of the three universities selected for the study. The information includes gender, age, qualification and position. The results on the demographic characteristics of the respondents have been presented in figures. Figure 4.1 shows results on the sex of the respondents, Figure 4.2 shows results on the age of the respondents, Figure 4.3 shows results on qualification and Figure 4.4 showcases results on various positions of the respondents.
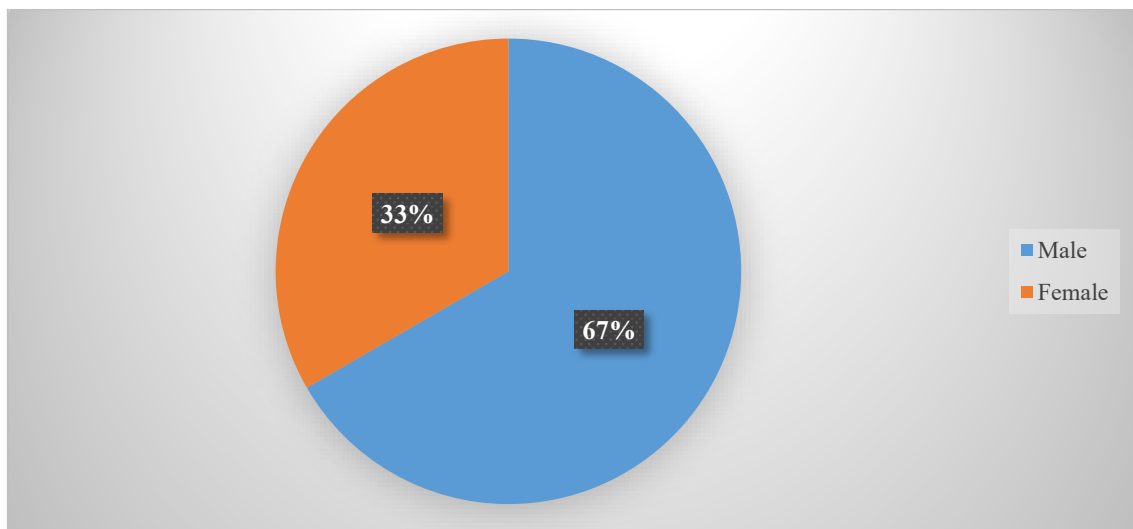
Figure 4.1: Gender of Respondents

Source: Survey Data (2022)

Figure 4.1 indicates that, 66.7% of the respondents were males and the remaining 33.3% were females. From the statistics, it is clear that the study was not gendered biased as it considered both genders. However, the majority of the respondents were males. The male respondents dominating the study could be that in the three universities selected, more male lecturers responded to the questionnaire than the female lecturers and not necessary because more male lecturers were employed than females.
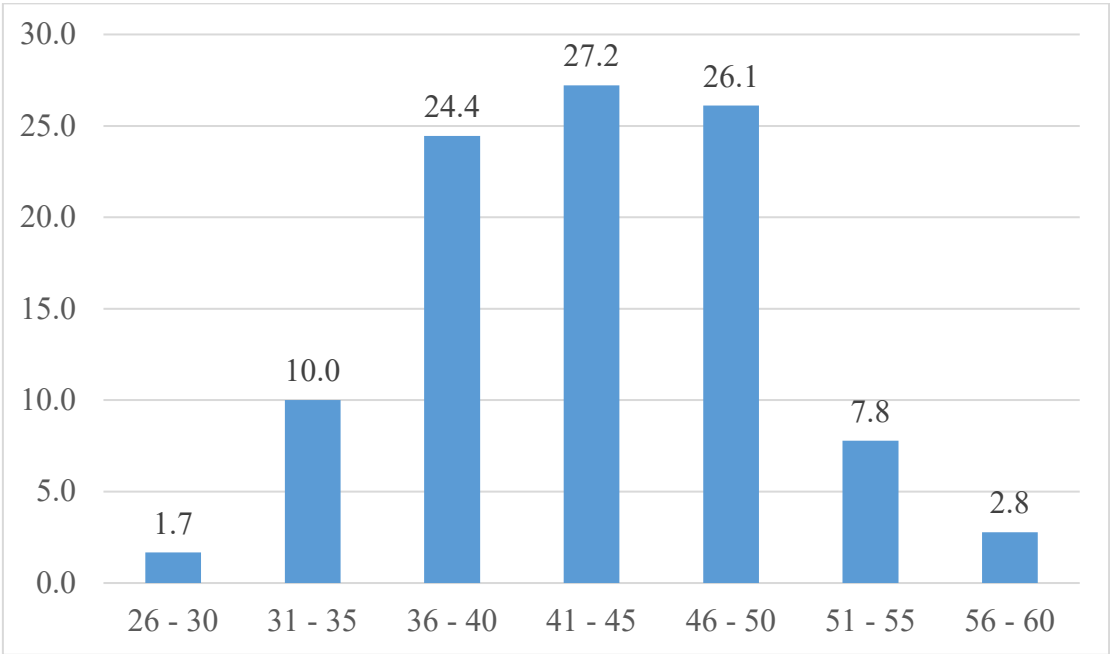
Figure 4.2: Age of Respondents

Source: Survey Data (2022)

Figure 4.1 displays results on the age of the respondents. 1.7% of the respondents were between the ages of 26 and 30, 10% were between the ages of 31 and 35, 24.4% were between the ages of 36 and 40 and 27.2% were between the ages of 41 and 45. Moreover, 26.1% of the respondents were between the ages of 46 and 50, 7.8% were between the ages of 51 and 55 and the remaining 2.8% were between the ages of 56 and 60. From the results, it can be observed that the majority of the respondents are young and can teach for several years before retiring. In Ghana, the compulsory retirement age has been pegged at 60 years. A few of the respondents were however nearing the retirement age. In teaching, experience counts and from the results, it is clear that an overwhelming majority of the respondents were highly experienced in teaching.
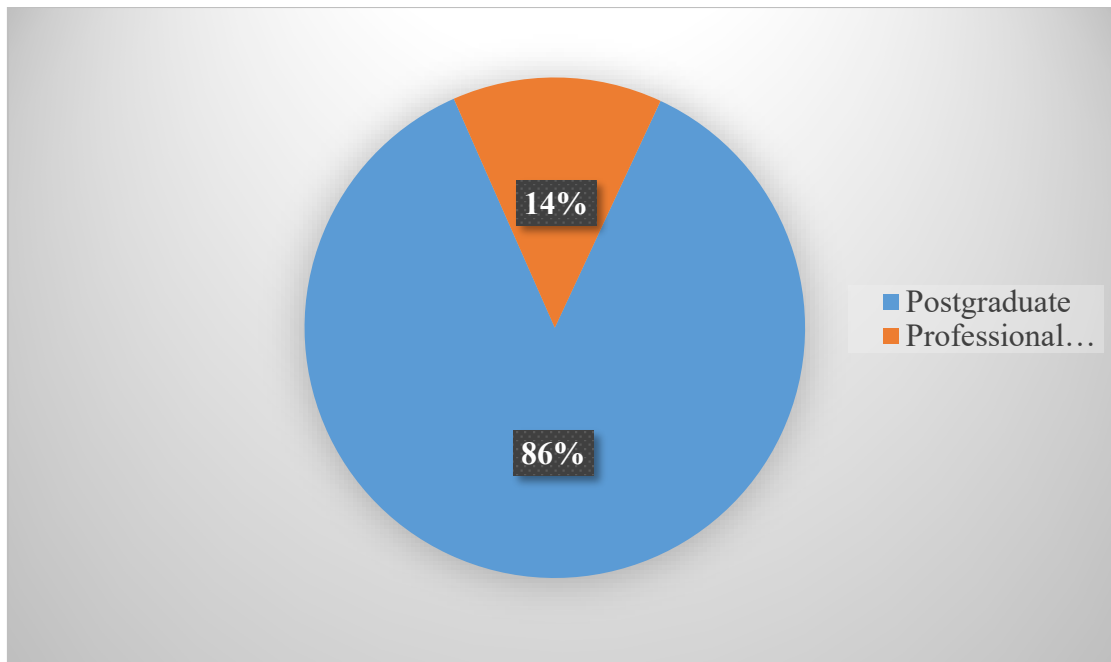
Figure 4.3: Qualification of Respondents

Source: Survey Data (2022)

Qualification is one of the most important factors that most universities in Ghana consider when hiring lecturers. As a result, before becoming a lecturer in a tertiary institution, a person must have obtained the necessary certificate(s). From Figure 4.3, a whopping, 86.4% of the respondents were postgraduate degree holders and the remaining 13.6% completed some professional programmes in diverse fields. It can be concluded that the majority of respondents have a postgraduate degree. It's also possible that some of the lecturers were working on their doctorates while teaching. Furthermore, the results show that first degree holders were not permitted to teach at the tertiary level.

The demographic characteristics of positions held by the respondents were also considered. From Figure 4.4, 64.2% of the respondents are lecturers, 9.5% are senior lecturers and 3.9% are HODs. Moreover, 8.9% of the respondents were vice deans, 6.7 were deans and the remaining 6.7 held positions such as coordinators, assistant lecturers and directors. From the results, a vast majority of the respondents were lecturers followed by senior lecturers. Aside teaching, some of the respondents had been performing administrative duties in the faculties or departments in the selected Universities.
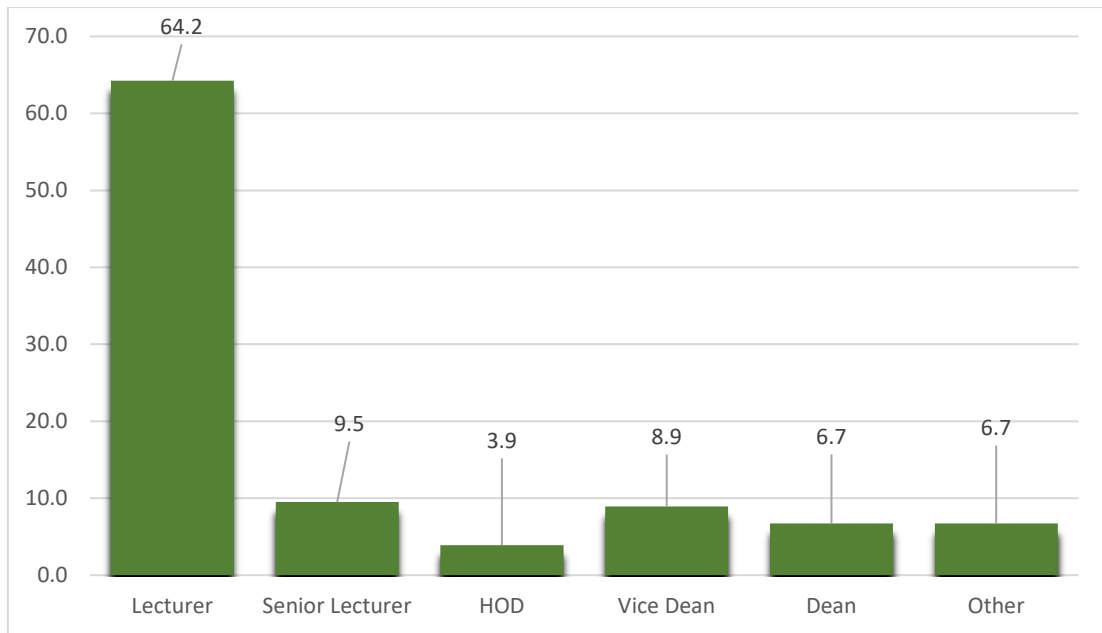
Figure 4.4: Position of Respondents

Source: Survey Data (2022)

4.3 PHASE I – QUANTITATIVE RESULTS

The quantitative data were collected from lecturers of the three selected universities on how neuroticism, extraversion, openness, conscientiousness and personal innovativeness influence their use of LMS. The quantitative data were analysed using both descriptive and inferential statistics. Descriptive statistics were utilized in ascertaining the level of agreement and disagreement, mean and standard deviation of all the items. Concerning the inferential statistics, correlation analysis was performed to ascertain the interrelationship among the six variables. Linear regression was performed to establish the effect of the independent variables on the dependent variable. The quantitative analytical techniques were performed using Statistical Package for Social Sciences and Microsoft Excel. The following sections describe the analysis and interpretation of the results of the questionnaire.

4.3.1 Types of LMS Used by the Selected Universities

There are numerous LMS,platforms that are by universities in Ghana, the study sought to identify the types of LMS used by the three universities. According to the responses,

the LMS types used at the chosen universities include Blackboard, Sakai, Moodle. The result is presented in Figure 4.5 .
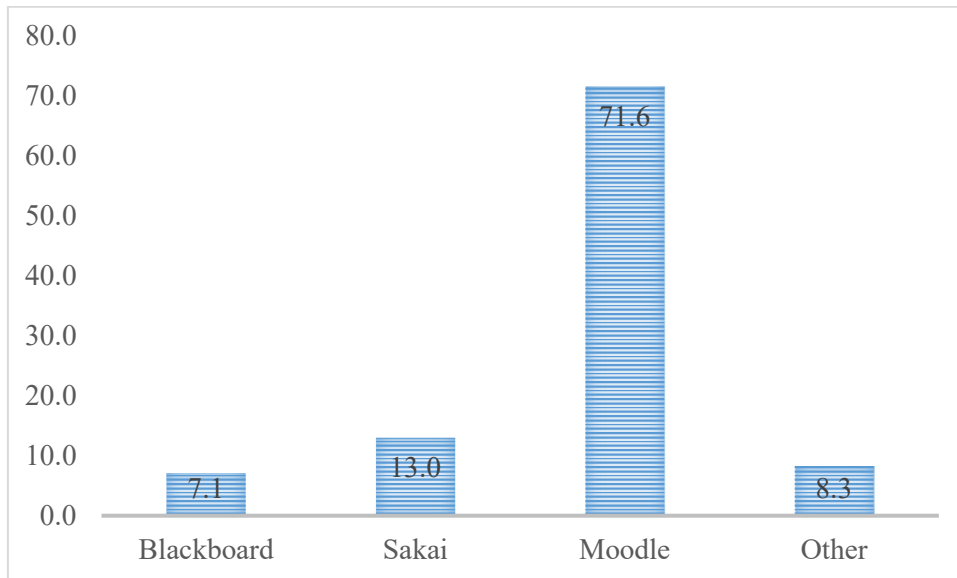
Figure 4.5: Types of LMS Used by the Universities

Source: Survey Data (2022)

From Figure 4.5, 7.1% of the respondents indicated that their institution used blackboard, (13%), Sakai (71.6%), Moodle and the remaining (8.3%) indicated that they used other LMS apart from the aforementioned. From the results, it can be seen that the LMS mostly used the universities was Moodle followed by Sakai. Some lecturers worked part-time at other universities, and this accounted for 8.3 percent of the responses. The COVID-19 outbreak compelled almost all institutions in Ghana to adopt the LMS.

4.3.2 Perceived Uses of Learning Management Systems

A Learning Management System (LMS) is a component of online software that is used to create, deliver, track, and report on educational courses and outcomes. It can be used to support both traditional face-to-face instruction and blended/hybrid/distance learning contexts. LMS software is used in universities to plan, implement, facilitate, assess, and monitor student learning. All of these activities take place behind a virtual wall, which

security offers, confidentiality, and data protection. LMS is used by lecturers to harmonize standards with curriculum and assessments, monitor students' progress, activities, and other performance outcomes of targeted individualized student learning objectives, and improve overall school academic work. Lecturers can set learning objectives for targeted individual students and provide immediate feedback on areas for improvement. Learning Management System (LMS) provides applications used for planning, implementing, and evaluating the learning processes, and also for producing the content and monitoring collaborators and educators. It provides interactive features, such as disciplinary discussions, video conferencing, and discussion forums (Arkorful & Abaidoo, 2015). The table below shows the respondent's views on the use of LMS.

Table 4.1: Respondents' Views on the Use of LMS

Statements	Disagree	Neutral	Agree	Mean	STD
Course administration (managing class information, tracking student activities).	3.3	23.3	73.4	3.98	0.924
Teaching delivery (providing materials and resources to students)	5	6.1	88.9	4.21	0.852
Student testing (assessing and evaluating students)	6.7	3.9	89.4	4.1	0.799
Class communication (communicating and collaborating with students)	4.4	13.3	82.2	3.96	0.831

Source: Survey Data (2022)

The use of LMS which is the dependent variable was measured with 4 items. The respondents agreed that they used LMS for course administration including managing class information and tracking the activities of their respective students (m = 3.98, SD = 0.924). Teaching delivery has a mean and a standard deviation of 4.21 and 0.852 respectively. This implies that the majority of the respondents strongly agreed that they used LMS for providing materials and resources to students. In recent times, due to

technological advancements, a vast majority of people prefer reading e-books on their smartphones, laptops, iPad etc. LMS in general, allows an instructor to create and deliver content, monitor student participation, and assess student performance. Also, a learning management system may also enable students to use interactive elements.The next item is student testing and it has a mean and standard deviation of 4.1 and 0.799 respectively. This denotes that the respondents strongly agreed that they have been using LMS to assess and evaluate the performance of the students. Lastly, an overwhelming majority of the respondents agreed that they use it for class communication (m = 3.96, SD = 0.831). This is good because it becomes easier for the lecturers to reach out to their students and pass on the necessary information to them directly without having to go through course representatives. Moreover, students who have any complaints or questions can ask the lecturers directly for a swift response.

LMS, which has been developed over a decade in collaboration with education leaders, enables universities to create flexible and highly engaging sessions. Also, because of the upsurge of COVID-19, many educational institutions have resorted to virtual learning environments as a means of educational delivery. Virtual learning environments have evolved into a system that can complement traditional classroom learning and, in some cases, completely replace the physical classroom setup. It creates an environment for people who rely on such platforms to learn at any time and from any location. As such, the application of technology in higher education institutions, could revolutionise the education landscape to the benefit of the majority of students. In most higher education institutions, quality teaching and learning could soar with the integration of technology to the process of teaching, learning and assessment.

4.3.3 Personality Inventory of the Use of LMS

A personality inventory is a self-assessment tool that was used to determine respondents' motivations, strengths and weaknesses, and attitudes toward the use of the LMS because these factors are important in determining lecturers' readiness to adopt and use the technology. The state of mental preparedness of faculty members is based on previous experiences and convictions about the effectiveness of using the Learning Management System in teaching.

4.3.3.1 Neuroticism

Table 4.2: Respondents' Views Regarding Neuroticism

Statements	Disagree	Neutral	Agree	Mean	STD
Using LMS systems to share information makes me feel anxious	80.3	10.1	9.6	1.97	0.974
I feel frustrated using LMS for learning	80	7.8	12.2	1.95	1.004
I feel depressed using the LMS to conduct online-lectures	87.8	5.6	6.7	1.82	0.815
I feel uneasy using the LMS to request for online submission of student assignment	85	5.6	9.4	1.86	0.932
I feel nervous using the LMS to train academic and non-academic staff	88.9	7.8	3.3	1.91	0.666
I feel vulnerable using the LMS to update my profile	71.7	15.6	12.7	2.11	1.081

Source: Survey Data (2022)

Neuroticism is one of the independent variables and it was measured with 6 items. The respondents disagreed that using LMS systems to share information makes them feel anxious (m = 1.97, SD = 0.974). The lecturers were at ease using the LMS to communicate information to students. This is a clear indication that they had familiarized themselves with the platform. The respondents again disagreed with the statement "I feel frustrated using LMS for learning" (m =1.95, SD = 1.004). The lecturers had been using LMS for instructional delivery and also because they had navigated the platform for some time, they did not feel stressed about using the platform. The statement "I feel depressed using LMS to conduct online lectures" had a mean of 1.82 and a standard deviation of 0.815. This implies that the respondents disagreed with the statement. They were consersant with their way around the platform. Therefore, they did not get depressed anytime they use the LMS to conduct lectures for their respective students.

The statement "I feel uneasy using the LMS to request for online submission of student assignment" has a mean and standard deviation of 1.86 and 0.932 respectively. The respondents disagreed with the statement as they did not feel uneasy when requesting for submission of assignments from the student. This clearly shows that when one has the knowledge and skills to operate a system, his or her level of confidence in using it heightens. There were disagreements with regards to the statement "I feel nervous using the LMS to train academic and non-academic staff". The statement has a mean of 1.91 and a standard deviation of 0.666. This implies that the respondents were relaxed when using the LMS to impact knowledge. Last, the majority of the respondents disagreed that they feel vulnerable using LMS to update their respective personal profiles (m = 2.11, SD = 1.081). Creating a personal account and updating the profile on the LMS is imperative and since the respondents were abreast with the system, they did not feel any form of vulnerability using the LMS to update their respective personal information.

4.3.3.2 Extraversion

The next predictor is extraversion and it was also measured with 6 items as indicated in table 4.3 below. An overwhelming majority of the respondents strongly agreed that using the LMS to interact with staff and students were comfortable (m = 4.04, SD = 0.828). The emergence of LMS has made communication easier as lecturers can pass information to staff and/or their students at any time and vice versa. Feeling comfortable using the LMS without stress will make the respondents continue to use the platform. There were agreements about the statement "LMS enables me to communicate and transfer information easily with colleagues". The statement has a mean and standard deviation of 4.00 and 0.725 respectively. This means that, in addition to communicating with students and staff via the LMS, lecturers used the system to communicate any information to their colleagues. The platform was indeed available at all times, allowing lecturers to send information to their colleagues without anxiety. The statement "I feel confident using the LMS to conduct online exams and assignments" has a mean of 4.00 and a standard deviation of 0.940. This implies that the respondents agreed that they were confident whenever they used the system to conduct exams and to give assignments to their students. "Using the LMS helps me to complete my course syllabus on time" has a mean and standard deviation of 3.72 and 1.083 respectively. This shows that the respondents agreed that the use of LMS had aided the achievement of desired results. One of the purposes

of LMS is to make complicated tasks easier, which is why lecturers can cover most of the topics on time. The statement "Using the LMS to conduct student learning forums is effective and efficient" has a mean of 3.97 and a standard deviation of 1.002. This means that the respondents agreed that conducting learning forums for students using LMS had been able to achieve the desired results. The last statement under extraversion which is "I feel excited using LMS to collaborate with colleagues to conduct course projects for students" has a mean and standard deviation of 3.87 and 0.805. The majority of the respondents agreed that they were ecstatic when they used the system to collaborate with their colleagues on course projects for students. It can be concluded that LMS facilitate cooperation and interaction between lecturers, students, and colleagues, whether between students and lecturers, administrators, or all users of a platform with a permanently open channel of communication. They make it easier to manage communication and information in a learning environment.

Table 4.3: Respondents' Views Regarding Extraversion

Source: Survey Data (2022)

Statements	Disagree	Neutral	Agree	Mean	STD
Using the LMS to interact with staff and students is comfortable	8.9	5.6	82.5	4.04	.828
LMS enables me to communicate and transfer information easily with colleagues	4.4	12.8	82.8	4.00	.725
I feel confident using the LMS to conduct online exams and assignments	13.9	2.2	83.9	4.00	.940
Using the LMS helps me to complete my course syllabus on-time	15.6	16.1	68.3	3.72	1.083
Using the LMS to conduct student learning forums is effective and efficient	12.2	11.7	76.1	3.97	1.002
I feel excited using LMS to collaborate with colleagues to conduct course projects for students	6.7	19.4	73.9	3.87	.805

4.3.3.3 Openness

Openness was assessed with 3 items as shown in table 4.4 and the first item is "Using LMS improves my creativity regarding how to teach my semester courses online". The item had a mean and standard deviation of 3.97 and 0.787 respectively. This means that the respondents agreed that the usage of LMS ameliorates their creativity on the methods used in teaching their courses for every semester online. Moreover, the respondents agreed to the statement "I enjoy using the LMS because the interface design is very artistic and interactive" (m = 3.91, SD = 0.841). This clearly shows that the features of a type of LMS were very important to the user. The attractive features influence the user to keep using the platform for a plethora of activities. The responses, show that the types of LMS the lecturers used was appealing to them so they get elated when they access the platform. Lastly, the statement "I can receive student feedback easily using the LMS" has a mean and standard deviation of 3.75 and 0.974 respectively. This implies that respondents agreed to receiving feedback from students who use the LMS. Communication was key contributory factor which had facilitated effective interactions on the LMS by allowing lecturers to send information and receive feedback.

Table 4.4: Respondents' Views Regarding Openness

Source: Survey Data (2022)

Statements	Disagree	Neutral	Agree	Mean	STD
I can print out student grades and performance graphs on time using the LMS	2.2	17.8	80	4.08	.754
I can monitor student participation for each course using the LMS	19.4	13.3	67.3	3.77	1.077
I can engage the LMS system administrator remotely using the LMS help platform when I experience system challenges	16.1	34.4	49.5	3.46	.976

4.3.3.4 Conscientiousness

Table 4.5 is about conscientiousness which measured openness using three items. The first statement which is "I can print out student grades and performance graphs on time using the LMS" has a mean of 4.08 and a standard deviation of 0.754. This means that the respondents strongly agreed that they were able to grade the students with the use of LMS, print out the results as well as charts of the results without any delay. "I can monitor student participation

for each course using the LMS" has a mean and standard deviation of 0.377 and 1.077 respectively. The respondents agreed that the use of LMS helps them to observe the participation of students in all the courses they teach online. "I can engage the LMS system administrator remotely using the LMS help platform when I experience system challenges" has a mean and standard deviation of 3.46 and 0.976 respectively. Every system including LMS may have technical issues at some point which will require the assistance of LMS administrators. From the results, the respondents agreed that whenever they faced challenges, they reached out to the LMS administrators for assistance.

Table 4.5: Respondents' Views Regarding Conscientiousness

Statements	Disagree	Neutral	Agree	Mean	STD
I always look for ways to use and explore the features of the LMS.	3.3	23.9	72.8	3.90	.799
Among my colleagues, I am usually the first to explore new ways of using the LMS more efficiently.	20.6	38.9	40.5	3.34	.965
I like to experiment with the LMS by requesting the inclusion of additional features.	15	41.1	43.8	3.43	.928

Source: Survey Data (2022)

4.3.3.5 Personal Innovativeness

The first on personal innovativeness was "I always look for ways to use and explore the features of LMS" had a mean of 3.90 and a standard deviation of 0.799. This implies that the respondents agreed that in exhibiting personal innovativeness, they gravitate towards diverse means of how they utilized the LMS and explore its diverse features. The exploration helped them to gain more knowledge and understanding on the use LMS.

Table 4.6: Respondents' Views Regarding Personal Innovativeness

Statements	Disagree	Neutral	Agree	Mean	STD

Using LMS improves my creativity regarding how to teach my semester courses online	8.9	5.6	85.5	3.97	.787
I enjoy using the LMS because the interface design is very artistic and interactive	5.6	20	74.4	3.91	.841

Source: *Survey Data (2022)*

The respondents further agreed that among their colleagues, they were usually the first to explore new ways of using the LMS more efficiently (m = 3.34, SD = 0.965). This shows that respondents were eager to know more about the LMS and see how best they could use it for diverse activities. Lastly, there were some agreements on the statement "I like to experiment with the LMS by requesting for the inclusion of additional features" (m = 3.43, SD = .928). The respondents were able to explore the features of the LMS so they could play around them and use them for their online activities.

4.3.4 Correlation Results

The correlation was one of the inferential statistics performed to establish relationships between/among the variables. Correlation focuses on both the strength and direction of the variables. The results have been presented in Table 4.7. From Table 4.7, the correlation coefficient between the use of LMS and neuroticism is -0.176. This means that there was a weak negative correlation between the use of LMS and neuroticism (r = -0.176 < 0.50). The correlation between the use of LMS and extraversion was weak and strong (r = 0.220 < 0.50). The correlation coefficient between the use of LMS and openness was 0.208 and this implies that there was a weak positive correlation between the use of LMS and openness (r = 0.208 < 0.50).

The use of LMS has a weak and positive correlation with conscientiousness (r = 0.122 < 0.50). The use of LMS also has a weak and positive correlation with personal innovativeness (r = 0.211 < 0.50). Neuroticism has a strong negative correlation with extraversion (r = -0.725).

Neuroticism also has a moderate negative correlation with openness (r = -0.525) and conscientiousness (r = -0.509). The correlation between neuroticism and personal innovativeness is weak and negative (-0.370). Extraversion has a strong positive correlation with openness (r = 0.764 > 0.50) and conscientiousness (r = 0.682 > 0.50). However, the correlation between extraversion is weak and positive (0.384 < 0.50). There is a moderate positive between openness and conscientiousness (r = 0.505). There is a weak positive correlation between openness and personal innovativeness (r = 0.396 < 0.50). Conscientiousness has a weak positive correlation with personal innovativeness (r = 0.278).

The study shows a significant positive relationship between personality inventory and usage intentions in university lecturers. As a result, an affective emotional attachment resulting from the use of LMS is a predictor of positive adoption intentions. The findings show that respondents used the system extensively following the pandemic's eruption and, as a result, had become familiar with the technology. Other research suggests that people with high levels of technology self-efficacy as a consequence of the increased computer experience were able to have a positive attitude to other technology (LMS) usage intentions. By implication, once a person develops a positive intention toward a specific technology usage, they easily adopt it and use it for the intended purposes.

The results of the personality inventory on the use of LMS in this study indicate that, respondents were motivated by their attitude toward technology in the formation of motives to use LMS, which was really an outcome of their previous experience with other technological innovations that could develop a positive attitude on LMS usage. Within the literature, attitude toward technology has been an effective personality predictor of expectation behavioural patterns of other introduced emerging innovations. It is expected that a positive attitude toward technology will reproduce positive intentions toward newly introduced technologies.

Table 4.7: Correlation Among Variables in the Study

Variables		1	2	3	4	5	6
Use of LMS	Pearson Correlation	1	-.176*	.220**	.208**	.122	.211**
	Sig. (2-tailed)		.018	.003	.005	.104	.004
	N	180	180	180	180	180	180
Neuroticism	Pearson Correlation	-.176*	1	-.725**	-.525**	-.509**	-.370**
	Sig. (2-tailed)	.018		.000	.000	.000	.000
	N	180	180	180	180	180	180
Extraversion	Pearson Correlation	.220**	-.725**	1	.764**	.682**	.384**
	Sig. (2-tailed)	.003	.000		.000	.000	.000
	N	180	180	180	180	180	180
Openness	Pearson Correlation	.208**	-.525**	.764**	1	.505**	.396**
	Sig. (2-tailed)	.005	.000	.000		.000	.000
	N	180	180	180	180	180	180
Conscientiousness	Pearson Correlation	.122	-.509**	.682**	.505**	1	.278**
	Sig. (2-tailed)	.104	.000	.000	.000		.000
	N	180	180	180	180	180	180
	Pearson Correlation	.211**	-.370**	.384**	.396**	.278**	1

Personal	Sig. (2-tailed)	.004	.000	.000	.000	.000	
Innovativeness	N	180	180	180	180	180	180

Source: Survey Data (2022)

4.3.5 Hypothesis Testing

Hypothesis testing is defined as a method that aids in determining whether a specific treatment has an effect on individuals in a population. It is a procedure utilized by statisticians to accept or reject hypotheses (Johansen, 1991). On the back of research objectives and arguments made with support from literature, the study came up with five hypotheses.

Hypothesis 1 (H_1): Extraversion will influence the use of LMS platforms positively in universities in Ghana.

Hypothesis 2 (H_2): Neuroticism will influence the use of LMS platforms negatively in universities in Ghana.

Hypothesis 3 (H_3): Conscientiousness will influence the use of LMS platforms positively in universities in Ghana.

Hypothesis 4 (H_4): Openness to experience will influence the use of LMS platforms positively in universities in Ghana.

Hypothesis 5 (H_5): Personal innovativeness with technology will influence the use of LMS platforms positively in universities in Ghana.

4.3.5.1 Extraversion and Use of LMS

Table 4.8: Effect of Extraversion on Use of LMS

Predictor	B	R^2	Adjusted R square	F	T	Significant
Constant	3.232					
Extraversion	0.220	0.048	0.043	9.049	3.008	0.003

Source: Survey Data (2022)

From Table 4.8, the value of R2 is 0.048, which implies that about 4.8% of the variation in the use of LMS can be explained by the model. The remaining 95.2 % can be attributed to factors other than extraversion. Extraversion has a coefficient (B) of 0.220, a p-value of

0.003 and a test of statistical coefficient (T-statistics) of 3.008. This signifies that the relationship between extraversion and the use of LMS is statistically significant (p = 0.003 < 0.05). Therefore, a unit increase in extraversion will also increase the use of LMS by 0.220%. This finding confirms Hypothesis 1 (H$_1$) which indicates that extraversion influences the use of LMS platforms positively in universities in Ghana.

4.3.5.2 Neuroticism and Use of LMS

This study sought to ascertain the linkage between neuroticism and the use of LMS in tertiary institutions. Linear regression was performed to ascertain the linkage and the result has been presented in Table 4.9

Table 4.9: Effect of Neuroticism on Use of LMS

Predictor	B	R^2	Adjusted R square	F	T	Significant
Constant	4.403					
Neuroticism	-.176	0.031	0.025	5.674	-2.382	0.018

Source: Survey Data (2022)

From Table 4.9, the value of R2 is 0.031, which means that about 3.1% of the variation in the use of LMS can be explained by the model. The remaining 92.9 % can be attributed to factors other than neuroticism. Neuroticism has a coefficient (B) of -0.176, a p-value of 0.018 and a test of T-statistics of -2.382. This signifies that the relationship between neuroticism and the use of LMS is negative and statistically significant (p = 0.018 < 0.05). Therefore 1% increase in neuroticism will decrease the use of LMS by 0.176%. This finding confirms Hypothesis 2 (H$_2$) which indicates that neuroticism will influence the use of LMS platforms negatively in universities in Ghana.

4.3.5.3 Conscientiousness and Use of LMS

The study aimed at determining the nexus between conscientiousness and the use of LMS in tertiary institutions. To achieve this finding, linear regression was performed. The result has been presented in Table 4.10.

Table 4.10: Effect of Conscientiousness on Use of LMS

Predictor	B	R^2	Adjusted R square	F	T	Significant
Constant	3.629					
Conscientiousness	0.122	0.015	0.009	2.677	1.636	0.104

Source: Survey Data (2022)

From Table 4.10, the value of R^2 is 0.015 and this implies that conscientiousness explains 1.5% of the variability of the use of LMS. The remaining 98.5% can be attributed to factors other than conscientiousness. The coefficient, p-value and T-statistics of conscientiousness are 0.122, 0.104 and 1.636 respectively. This means that the relationship between conscientiousness is not statistically significant ($p = 0.106 > 0.05$). This implies that conscientiousness does not affect the use of LMS in tertiary institutions. A unit increase in increase or decrease in conscientiousness will not influence the use of LMS in tertiary institutions. This finding does not corroborate with Hypothesis 3 (H3) which indicates that conscientiousness will influence the use of LMS platforms positively in universities in Ghana.

4.3.5.4 Openness and Use of LMS

Linear regression was performed to determine the effect of openness to experience on the use of LMS in tertiary institutions. The result on this has been presented in Table 4.11.

Table 4. 11: Effect of Openness on Use of LMS

Predictor	B	R^2	Adjusted R square	F	T	Significant
Constant	3.300					
Openness	0.208	0.043	0.038	8.043	2.836	0.005

Source: Survey Data (2022)

From Table 4.11, the value of R^2 is 0.043 and this implies that openness explains 4.3% of the variability of the use of LMS. The remaining 95.7% can be attributed to factors other than openness to experience. The coefficient, p-value and T-statistics of openness are 0.208, 0.005 and 2.836 respectively. This means that the relationship between openness and the use of LMS is statistically significant ($p = 0.005 < 0.05$). This signifies that influences the use of LMS in tertiary institutions. A unit increase in openness will also increase the use of LMS by 0.043% in tertiary institutions. This finding corroborates with Hypothesis 4 (H_4) which indicates that openness will influence the use of LMS platforms positively in universities in Ghana.

4.3.5.5 Personal Innovativeness and Use of LMS

Linear regression was performed to determine the influence of personal innovativeness on the use of LMS in tertiary institutions. The result on this has been presented in Table 4.12 below.

Table 4.12: Effect of Personal Innovativeness on Use of LMS

Predictor	B	R^2	Adjusted R square	F	T	Significant
Constant	3.340					
Personal Innovativeness	0.211	0.045	0.039	8.294	2.880	0.004

Source: Survey Data (2022)

The value of R2 is 0.045 which means that about 4.5% of the variation in the use of LMS can be explained by personal innovativeness. The remaining 95.5 % can be attributed to factors other than personal innovativeness with technology. Personal innovativeness has a coefficient (B) of 0.211, a p-value of 0.004 and T-statistics of 2.880. The results mean that personal innovativeness has statistically significant with the use of LMS ($p = 0.004 < 0.05$). From the results, personal innovativeness influences the use of LMS in universities and therefore a unit increase in personal innovativeness increases the use of LMS by 0.211%. This finding confirms Hypothesis 5 (H_5) which indicates that personal

innovativeness will influence the use of LMS platforms positively in universities in Ghana.

Table 4. 13: Summary of Hypothesis Results

Hypotheses	Prediction	Results	Evaluation
H1: Extraversion will influence the use of LMS platforms positively in universities in Ghana.	+	+ (Significant)	Supported
H2: Neuroticism will influence the use of LMS platforms negatively in universities in Ghana.	-	- (Significant)	Supported
H3: Conscientiousness will influence the use of LMS platforms positively in universities in Ghana.	+	+ (Not Significant)	Not Supported
H4: Openness to experience will influence the use of LMS platforms positively in universities in Ghana.	+	+ (Significant)	Supported
H5: Personal innovativeness will influence the use of LMS platforms positively in universities in Ghana.	+	+ (Significant)	Supported

4.4 PHASE II – QUALITATIVE RESULTS

The qualitative data were gathered from senior managers, Deans, HODs and student leaders the three selected universities in Ghana. The qualitative data gathered from the 30 research participants (Senior Management, Deans, HODs, and students) were analysed using thematic analysis. The responses given by the participants were put under themes and sub-themes and analysed with Microsoft Word and Nvivo. The researcher used a handheld audio recorder to accurately capture participants' responses and asked questions directly from the interview protocol. During each interview, the researcher took notes which helped to identify important statements that facilitated the analytic process. The researcher validated the transcriptions of the interviews using the playback feature of the computer software. Participants in the study also validated transcriptions to ensure the accuracy of the information.

4.4.1 Development of Qualitative Themes

Nvivo was used for coding after the transcription. The developed codes were divided into five high-level themes and six sub-themes. The main themes developed included current innovations and LMS used by Ghanaian universities, promotion of innovation and the use of LMS and the challenges associated with the promotion, factors influencing the use of LMS in Ghanaian universities, ways leadership competencies drive innovation in Ghanaian universities, and strategies and interventions that promote innovation and the use of LMS in Ghanaian universities. Table 4.14 shows the themes and sub-themes that emerged from the interviews..

Table 4.14: Themes and Sub-Themes from Qualitative Results

No	Research Questions	Interview Questions	Themes and Sub Themes
1	What are the current innovations and learning management systems in Ghana?	What current innovations has the University adopted? What type of LMS does the University use in teaching and learning? How did you identify the need for innovation and LMS in the University? How did you learn about LMS for teaching and learning?	**Theme 1**: Current Innovations and LMS adopted by Universities in Ghana. Sub Themes • Current innovations in universities in Ghana • Types of LMS used in universities in Ghana • The benefits Universities in Ghana derive from using LMS
2	What is the role of university leadership and governance in driving innovation and the use of LMS in universities?	Do members of the University willingly use LMS? How do you promote or encourage members of the University community to use LMS? How is the effective and efficient use of LMS promoted by deans, HODs and administration? What are some of you face in promoting the use of LMS? How does your management academic curriculum at your faculty?	**Theme 2:** Promotion of innovation and the use of LMS and challenges faced Sub Themes • Promotion of innovation and the use of LMS in Ghana's Universities • Challenges faced in promoting innovation and the use of LMS • Management of academic Curriculum
3	What are the factors that influence	What factors influence the use of	Factors that influence the use of

		promotion and the use of LMS in Ghana's Universities?	LMS is the University?	LMS in Universities in Ghana
4		What are leadership competencies driving innovation in Universities in Ghana?	How do leadership competencies promote innovation in the University?	Ways leadership competencies drive innovation in Universities in Ghana
5		What is the possible intervention? strategies that can be recommended to promote innovation and use of LMS in Ghana's Universities	What strategies and interventions can be put in place to promote innovation and the use of LMS in the University?	Strategies and interventions that promote innovation and use of LMS in Universities in Ghana

Source: Survey Data (2022)

RESEARCH QUESTION 1: What are the current innovations and Learning Management Systems in Ghanaian Universities?

4.4.2 Current Innovations and LMS Adopted by Universities in Ghana

The first objective of the study was to identify the current innovations and LMS in Ghana's universities. Higher education has also altered at a worldwide level, moving away from the elitist approach that was common previously and toward mainstream higher education. Higher education has also altered at a global level, drifting away from the elitist approach that was popular previously and toward universal higher education (Kwadwo et al., 2010). LMS according to Phillipo and Krongard (2012), are a key enabler of many current and future educational initiatives, including personalized learning, learner-centred decision making, staff productivity, and curriculum development in support of Common Core State Standards. It was therefore imperative to ascertain the current innovations and LMS adopted by universities in Ghana.

4.4.2.1 Sub Theme: Current Innovations in Universities in Ghana

According to Krouska et al. (2017), there has been a vast increase in the acceptance and use of various Learning Management Systems (LMS) in tertiary institutions, as colleges and universities in developed and developing countries have successfully deployed various online education platforms that allow students to take their lectures online, collaborate, and have access to a learning resource. The study revealed that the adoption of LMS has given universities a window of opportunity to overcome the limitations associated with student enrolment due to infrastructure inadequacies in accommodating students. It is critical in facilitating teaching and learning at all levels of education. The use of technology in teaching and learning is increasing, and it has the inherent ability to augment and deliver more flexible learning (Singh & Hardeiker, 2012). Several authors have reported that the use of technology in education can have an impact on students' learning outcomes (Carmichael & Steyn, 2014).

The participants confirmed this by saying that, E-learning solutions are increasingly being advocated to augment existing traditional teaching and learning effort and that is exactly what this university is doing. The adoption of the learning management system as a new education model is one the fastest growing innovations currently in this university and it

is helping us to have uninterrupted lectures, that is, uninterrupted teaching and learning". It has helped to increase enrollment. For example, the university can now accommodate a larger number of students, which was previously not possible. A participant agreed to the assertion by saying that:

"*This and other universities have adopted the eLearning platforms (Such as Zoom, google classroom etc.) for blended teaching and learning and this has helped to ensure continuous teaching and learning without interruptions. The platforms have been very effective*".

E-learning solutions have been advocated by many and as such their respective universities have embraced that to supersede the traditional way of teaching and learning. Universities' e-learning platforms include Zoom, Google Meet, and others, and these platforms have proven to be effective. They have been of tremendous assistance to both students and lecturers. Krouska et al. (2017), further added that as a result of the pandemic, LMS has probably become the single most significant software system for institutions. Most technophobic stakeholders at universities have been compelled to go online and access the platform for diverse activities. LMS includes a variety of standard and unique features to aid in the teaching and learning process. One of the deans confirmed this saying:

"*LMS serves as the foundation upon which the educational workflow is built in recsent times. Lecturers use an LMS to assign work, share content, and post grades, while students can submit work, view content, and work collaboratively on forums*".

Universities that are forward-thinking have adopted LMS as a novel education model, which is assisting them in eliminating the interruptions in teaching and learning that occur when using the traditional method. The LMS available allows students to access their results and other information from whatever location. The lecturers use LMS to share content, give assignments to students, and post grades. Students can also use the LMS to submit assignments, view content, and collaborate on forums.

. Below are some of the responses from the participants. One of the HODs said:

"The learning management system that we have adopted is helping us to undertake administrative activities in terms of self-service and guided service where students can access information without coming to the campus or coming in contact with service providers. For example, they can assess their results they can assess the learning platforms, they can pay fees through the interplay which is one of the innovative ways of providing services in the post COVID era in this university". It provides fast and continuous feedback: This programme provides up-to-date feedback on the course, test dates, results, students and everything related to the student's programme and questions"

To summarize, the emergence of COVID-19 and technological advancements prompted Ghanaian universities to be innovative by adopting and utilizing LMS for operational continuity. To ensure continuous teaching and learning, it became critical to adopt and use the LMS. For learning and teaching, universities use e-learning platforms such as Moodle, Sakai, Google Classroom, and others. Lecturers use the platforms to give assignments, share content, and post student results. Furthermore, students can access information provided by lecturers and review their results.

4.4.2.2 Sub Theme: Types of LMS used by Universities in Ghana

LMSs provide not only online and in-person instruction, but also extensive behavioural research on system users (Firat, 2016). According to Phillipo and Krongard (2012), LMSs are a key enabler of many current and future educational initiatives, including personalized learning, learner-centred decision making, staff productivity, and curriculum development in support of Common Core State Standards. universities are also implementing web-based learning systems to gain a competitive advantage, due to increased enrolment, faster delivery of teaching and learning materials, faster assessment of students' performance, among many other benefits that are propelling web-based learning's global adoption (Maina & Nzuki, 2015). From the responses given, they confirm that the emergence of COVID-19 triggered Universities in Ghana to gravitate towards LMS. They have been using the LMS for a plethora of activities such as teaching, learning, grading, sending information among others.

The student leaders expressed a strong desire to use LMS and a strong belief in its functionality. It was also discovered that perceived usefulness, ease of use, and attitude

toward technology use influenced e-learning adoption among Ghanaian university students. Moodle, WebCT, or Blackboard are examples of tools that can help to improve academic work (Walker, 2015). The importance of LMS in 21st-century higher education delivery is undeniable. The most extensively used LMS on the African continent are Blackboard, Sakai, KEWL, and Moodle (Oxagile, 2016). For tertiary education sectors to remain relevant to the societies they serve, they must digitally transform in order to match the era they are in, namely the twenty-first century within the Fourth Industrial Revolution. In the twenty-first century, leaders of educational institutions must embrace technology in the execution of their mandates of teaching, research, and community engagement. University managers, leaders, and administrators in the twenty-first century deserve to be technological leaders in their organisations

One of the Vice-Chancellors in responding to this issue said:

"*The current innovation in this university is the adoption and effective use of the Moodle platform for teaching and learning because we currently live in an online world and the online world we live in affects ever sector of society including university education*".

One of the student leaders had this to say about the type of LMS the university uses:

"*Sakai is currently used in this university. Sakai is an open-source LMS that handles announcements, assignments, calendars, grade books, tests and quizzes. It is all-embracing and affordable.*" *It is all-embracing and allows users to communicate with what it contains by simply connecting with the Internet at any time and place*".

One of the HODs responding to the type of LMS used said:

"*The University has been very innovative with Sakai, especially during the COVID period. We started using it extensively during the lockdown. We had to get faculty to familiarize themselves fully with the system so that they could help their students to access the learning materials uploaded into the system.*".

Moodle, Sakai, and Blackboard are among the LMSs used by universities, according to participant responses. This finding is consistent with Oxagile (2016), who stated that the most popular LMSs in Africa are Blackboard, Sakai, KEWL, and Moodle.

4.4.2.3 Sub Theme: The Benefits Universities in Ghana Derive from Using LMS

Chaubey and Bhattacharya (2015) list a range of characteristics that a Learning Management System (LMS) should have to be relevant in today's fast-paced technological society. They identified interactivity as one of the elements. One of the senior managers confirmed this saying:

"With LMS, I believe the key benefit of the system is interactivity." The fact is that it is a system that allows lecturers to interact with students and vice versa. One important aspect is ensuring effectiveness and efficiency."

One advantage of having Learning Management Systems in education has been the ease with which instructors can assess their students' performance. The system allows for Real Timed/Untimed tests and quizzes to be administered from the LMS and grading them can be automated and made even easier. The use of the easy assessment and grading tools helps to examine a large class of students without challenges. Other tools or features on the LMS aid in making the most of the LMS technology. The features contribute to a more enjoyable learning experience and tends to provide variety in order to keep learning from becoming monotonous. The ability to take exams online especially Multiple choice questions and mark instantly makes things a little bit easier than taking them in-person. *"Online submission eliminates the time-consuming task of collecting and sorting papers, which can then be reviewed by the instructor at any time and from any location. Learning management systems provide a number of benefits to their users, regardless of their position within the organisation.".*

The participants indicated that students have had access to personalised learning through eLearning platforms. This leads to personalized learning process that allows students to learn in a way that is comfortable for them and at a pace that is adjusted to match their abilities.Similarly, within a course, each student can set their own individually tailored goals, learn collaboratively or independently, and take assessments as required.

"Projects, class assignments and presentations can all be managed directly from the LMS and nother advantage is when the student takes ownership of the learning process. In the end, all else being equal, the learning process is likely to be more effective".

The adoption and use of a Learning Management System (LMS) has resulted in innovation, continuous learning, and improvement on the part of both lecturers and students. The LMS facilitates school systems in maintaining the integrity of their educational programmes by allowing educators to develop courses, deliver instruction, facilitate communication, foster student collaboration, assess student success, and provide other learning resources for support. Implementing learning management systems in education enables instructors to track a learner's progress in terms of course completion, identification of knowledge gaps, level of participation and engagement, and time required to complete the course. From knowing how well students are progressing in the course to time logs and assessment data, instructors can get to know exactly how their courses are being received. The system provides data on time logs, which aids in course redesign because time logs can reveal which aspects of the course are perceived to be the most difficult or interesting. Understanding which courses are popular and why can aid in increasing enrollment in other courses. Reporting tools can easily analyse course reviews and feedback to present a comprehensive picture of students' preference. These detailed reports can also assist institutes in determining whether a course meets the institution's current requirements and whether it needs to be revised.

The introduction of blended and hybrid learning is one of the advantages. Blended learning allows students to attend in-person lectures while supplementing their knowledge with study materials from the LMS. Test results, notes, recorded lectures, instructional content, and other materials could be included in the Learning Management System. Blended learning gives students more flexibility by allowing them to take classes in person or online while supplementing their learning with course material from an LMS. The online classes can be accessed directly from the LMS and this flexibility makes it easier for students to keep track of their attendance and avoid any course

One of the best features of LMS is that they function as a central system that contains all of the course materials required for any given course. The learning experience for all students is streamlined by having a single, well-managed database. Students can use one platform to upload assignments and take assessments. It also makes it simple for instructors to distribute resources to all students by simply uploading them to the LMS. Because the data is accessible from anywhere, a cloud-based LMS tends to add to this

convenience. disruptions if the campus shuts down."*Learning from anywhere is possible with the LMS. Mobile applications are available with some of the best Learning Management Systems, making content even more accessible. Students can attend lectures, submit assignments, and check their grades while moving and even if they do not have access to a desktop or laptop. Instructors and students remarkably appreciate the convenience of being able to check course updates from their phones*".

Another benefit of hybrid learning is that it allows students to save money on transportation and commute time by attending classes from their residences. An LMS can also help institutions save money by reducing the number of physical classes on campus and increasing enrollment by utilizing existing campus resources. From assisting students with course selection and progress to making it easier for instructors to deliver lectures and grade assessments, the LMS has a lot to offer. Furthermore, the LMS is the most important tool that has permanently altered the eLearning landscape. Future LMS versions could provide even more benefits to users by incorporating more technology and learning. One of the deans stated :

"Yes, last semester, for instance, we had training and refresher courses on how to design course outlines. Certain elements were introduced, for instance, every week, every lecturer is supposed to send learning materials, including activities to engage the students whereas, in the old course outline, we only provide a reading list. In that case, the LMS becomes a platform that makes it possible to bring in innovation, continuous learning and continuous improvement. By the end of the academic year or after a year or two, we can evaluate its effectiveness to see how we can improve on its usage. It also puts the responsibility on the lecturer to refresh their teaching materials and come up with new and improved ways of system usage. For instance, a lecturer can teach the same thing for about 10 years".

In conclusion, LMS brings about creativity, interactivity gives students to take control of the learning process, features of LMS including forums, quizzes and assignments makes learning interesting for students. Moreover, LMS improved teaching and learning and productivity. This finding to some extent agrees with Pappas (2016) who indicated that well-implemented LMS provides students with personalized learning opportunities, limitless access to e-Learning materials, interactive learning experiences, learner progress

tracking, and cost-effectiveness. Unlike traditional classroom-based teaching, where the instructor follows a predetermined approach, online methods of teaching with the help of an LMS allow instructors to experiment with the application of various learning techniques such as blended learning, constructivist learning and observational interactions based on what works best for the learners. Using an LMS as an online platform in education allows for integration with other platforms to encourage students and instructors to learn and share their knowledge.

RESEARCH QUESTION 2: What is the role of University Leadership and Governance in driving Innovation and the Use of LMS in Universities?

4.4.3. Role of Leadership in Promoting LMS usage and Challenges Faced in the Promotion

Another objective of the study was to ascertain the role leadership and governance play in promoting innovation and the use of LMS in the universities. Apart from the promoting the usage, this section covers the challenges authorities faced in the promotion of innovation and use of LMS .

4.4.3.1 Sub Theme: Promotion of innovation and and use of LMS by Leadership in Ghana's Universities

Universities have experienced a variety of significant changes in the previous century, including decreased public funding, increased criticism of academic administration structures, rising educational costs and the challenges of deployment of information and communication technologies. Solutions to these challenges necessitate practical management strategies supported by transformative leadership strategies, such as the development of innovative management structures to ensure university efficiency and autonomy, as well as the adoption of appropriate technology. (Bushuyev & Bushueva, 2010).

The need for innovation in universities has never been more critical because it has helped to raise a generation of leaders who can fit into the world of work. Universities that adopt and demonstrate innovative tendencies have a tremendous opportunity to assume and maintain a competitive edge. Leaders must guide and direct individuals in the proper

execution of their tasks and functions, provide solutions to a variety of problems and challenges, make effective decisions, and build a positive environment conducive for the achievement of academic goals and objectives (Zehrer, 2015). As a result of this, university leadership tends to make a deliberate attempt to adopt and use LMS to ensure educational cohesion and continuity.

One of the strategies used by university leadership was to inform lecturers about the their assigned courses at the beginning of the academic year and organize trainings and workshops for them. Every department has a trainer or LMS Coordinator who instructs lecturers on how to prepare materials with audio components". One of the HODs in responding to the promotion of innovation said:

"*As an HOD, at the beginning of the year when lecturers are assigned their courses, especially for the new lecturers, there is a kind of departmental refresher course or training that we organize for the lecturers. Every department has an LMS Coordinator and the LMS Coordinator would then take the new lecturers through the process of getting their materials ready with the audio components they will be uploading. All of this is done through the department.*"

Another Dean confirming that universities have been providing training for both students and teachers said:

"*Students receive a lot of training." because they need distinctive trainings, not just one, to grasp the necessary skills needed to exploit the technology*"

The leadership of the universities have also been promoting innovation and use of LMS by creating a culture of innovation in the departments where innovations from staff are encouraged. With regards to this promotion strategy, this is what one of the Vice-Chancellors said.

"*I have always been an advocate of innovation as a visionary leader, therefore, I promote innovation by building up a positive innovation culture where innovations from staff are welcome and encouraged. I promote a culture of innovation by raising employee awareness of innovation, through communication strategies, motivation, incentives for promoting innovation. I also empower employees for*

innovation, by giving them opportunity to participate in training courses on creativity and the innovation processes."

In promoting innovation and use of LMS, leadership plays the role whipping the interest and competence of stakehoders of the platforms by making available tutorial videos that helps both lecturers and students to properly use the platforms. An Administrative Staff said:"*We also have videos and help resources that are used to provide guidance to them. So sometimes when the lecturers are uploading something and they are finding difficulty, we help them. Sometimes I have my laptop in front of me as I coach them through the process.*"

One of the Vice Chancellors said they promote the use of LMS by the following means:

> *"Staff are taken through regular training workshops on the use of these electronic platforms and the introduction of new features that may have been added by the developers; Staff are also provided with internet facilities in their offices and upon request, assisted to setup the necessary resources (technology devices) that they have in their offices, for online teaching; Continuous sensitization on the need and benefits of the use of these platforms and the fact that it has become the only means of accepting and managing teaching and assessment data or records; Students who need assistance with internet to enable them access the online classrooms are encouraged to come to the campus where WI-FI internet is made available anywhere on the school premise so that they can join the online class while they observe the covid-19 protocols."*

In conclusion, the leadership of the universities have been doing a great job by encouraging the use of LMS among the students and lecturers. The promotional strategy they have adopted was to train both the students and lecturers to be abreast with the features of the LMS platforms. As university leaders move their universities to globally accepted levels, existing university culture can either stifle or enhance administrative and employee efforts to encourage innovation. Thus as part of the process of encouraging an innovative culture, university management must take critical steps to study the organisation's strengths and limitations to adapt to become a stronger and more responsive organisation. This can help

to create a learning environment that encourages innovation. It also means that staff and students should be given opportunities to try new things and turn those experiences into knowledge that is accessible to all employees at the university. Such a culture fosters innovation because all university stakeholders are allowed to contribute new ways of achieving the university's goals and objectives. This finding is similar to the position held by Zehrer (2015). According to this author, the role of leadership in the success of an organisation includes management of organisations resources, strategic direction and skills development, decision making and sustaining an effective organisational culture.

4.4.3.2 Sub Theme: Challenges Encountered in the Promotion of Innovation and Use of LMS

The study sought to identify the challenges that university leaders face. According to the responses of the participants, the leadership of the selected universities had been making a concerted effort to promote innovation and the use of LMS, but they face a slew of challenges. The implementation of e-learning reform measures has been thwarted with plethora of challenges such as, inadequate infrastructural facilities, ICT-challenged lecturers, insufficient ICT staff to train e-learning system users, poor Internet connectivity, and high e-learning access costs. Additionally, cultural attitudes, beliefs, traditional educational practices, and lack of strategic planning and effective management, are significant barriers to e-learning in education. Other difficulties include insufficient learner support services and a lack of training for lecturers and students to encourage an enthusiasm for using the technology (Sarfo & Yidana, 2016; Boaten, 2015).

According to some of the participants, the main challenge is the attitude of both lecturers and students. Some of the lecturers do not make a conscious effort to explore other features of the LMS such as forums and assignments. They only put the learning materials onto the platforms without experimenting with other features. This is one of the critical factors that needs to be addressed in order to ensure that both leacturers and students make extensive use of the elearning system. Some of the lecturers and students, particularly the adults, are not technologically savvy, so they have difficulty using the platforms. They lacked the requisite skills to operate the platforms, which prevents them from using them.With regards to this issue, one of the HODs said:

> *"The main challenge is the attitude of some lecturers toward the use of technology. Some people believe that once you've uploaded your materials to the LMS, that's the end of it. They do not take advantage of the LMS's other forums, assignments, and other features"*

Another issue is the cost of data. The vast majority of students complained that the cost of data was prohibitively expensive and that accessing the platforms necessitates a large amount of data on an ongoing basis. Students believe it was unfriendly to them, which discourages them from using the LMS platforms.   One the HOD's confirmed this finding, saying:

> *",The students complain that data being too expensive for them. But I always tell them that if they had come to campus, they would have paid for transportation. I also tell them that learning management systems (LMS) are the future of education, the use of LMS has become part of us and so we need to address the challenges and embrace it. Furthermore, there are challenges of low-class participation which is a barrier to the promotion of LMS in universities. The lecturers have made several complaints about low attendance."*

Commenting on the challenges, one of the Vice-Chancellors had this to say:

> *"Poor internet connectivity due to fluctuations of bandwidth from the internet service providers; Challenges encountered by students in financing the cost of airtime for online lectures and assignments; Intermittent power supply from the national grid, especially online users who are not on campus. However, for those users on campus there is always alternative power from the university's standby generators; Laid back attitude of some lecturers and students who are not conversant with the use of technology devices that support the LMS; Inadequate provision of technology devices that support the adopted LMS to lectures and academic administrators for online teaching."*

To conclude the challenges faced by the leadership of the universities in promoting innovation and use of LMS include high cost of data and low student participation in an online class. This finding contradicts the findings of Mahmood (2016) and Mathew (2010), who stated that challenges to the use of innovation include divergent ideological positions,

contradictory motives between institutional governing bodies and senior administrators in universities, shifts in labour demand, economic transition, and funding decline. The finding also contradicts the findings of Almaiah, Al-Khasawneh, & Althunibat (2020), who investigated the challenges that universities face when using LMS. The most significant obstacles revealed by their study were a lack of financial support, change management issues, and technical issues with learning management systems. Finally, the challenges study differed from the study of Mohammadi et al (2021), which revealed that policy, organisational culture, technological, governance model, skills, and quality were all important.

The respondents expressed their thoughts on possible solutions to the problems as follows:

- periodic e-learning training workshop for lecturers and students
- Provide funds and a well-thought-out plan for implementing e-learning
- Wireless network expansion of the university's network to non-residential areas.
- Adequate ICT staffing for e-learning training and management.
- The provision of adequate ICT infrastructure to support th implementation of LMS

Another strategy adopted by some of the lecturers was to award marks for attendance and contribution during online lectures. This motivates the students to be in class at all costs. One of the deans had this to say with regards to this:

> "*A strategy I use is that I ask all students using a particular device to mention their names so that I know how to make the class interactive and get them to contribute. I always try to motivate and inspire them by telling them that this is their life so they should take advantage and control of it and participate even though they are not seeing the lecturer physically. I record the attendance and give marks for attendance.*"

The study revealed that the main challenge in the development and implementation of innovative is funding. Concerning the challenges encountered in the promotion of innovation and use, one of the Vice-Chancellors said:

> *"Funding for higher education has changed and this has affected our initiative to bring change"*

According to the participants, implementing ICT infrastructure for e-learning and training academic staff on E-learning were both very expensive. The cost of increasing network speed so that the LMS can be accessed faster outside the university presents a significant financial challenge to management. Also, Access to networked resources was difficult for faculty and students outside of the university's network.

Although the reduction in public funding poses a major uncertainty to universities, in practice, public universities in Ghana have implemented several strategic actions that enable them to overcome their challenges. This study identified certain strategic practices common to universities, such as internally generated funds and generating income from tuition fees, sale of admission forms, university facilities and residence halls are rented out, bookshops are run, and so on. For example, the University of Ghana has invested in private halls of residence in addition to the traditional government buildings. The school has also constructed a guest house that is open to the public. According to National Commission for Tertiary Education (2016), universities should operate with only the funds from the government. This is because they are autonomous institutions and have source for funding elsewhere bearing in mind the financial administration act of Ghana" "the universities are now by law autonomous institutions and that gives them the right and freedom to go for other additional external funding"

4.4.3.3 Sub Theme: Management of Curriculum on LMS Platforms in the universities

As part of the promotion of innovation and use of LMS, the study aimed at ascertaining how the universities manage their learning platforms. From the responses, it was found that before the semester begins, leadership normally inform the lecturers via different platforms such as emails, WhatsApp etc to make their course outlines and learning materials available on time for upload on the LMS platforms. The course outline helps the students know what topics will to be treated during the semester as well as the materials

to read to gain knowledge on every topic. "*The academic curriculum has to do with the course outline. As HOD, I send messages and notices via WhatsApp to remind the lecturers in my department to get their learning materials ready at a specific time so that they are both uploaded onto the system*"

Since the start of COVID-19, educational leaders have been looking for new ways to deliver online learning innovation and resources. E-learning Curriculum management is primarily concerned with effective LMS-based teaching and learning. As students' progress through and complete the programme, the process entails managing what students are expected to learn, evaluating whether or not they learned it, and seeking ways to improve student learning so that they gain appropriate knowledge and skills. Curricula must be current, responsive, and innovative, and delivered in an appropriate format and through an effective channel to effectively prepare graduates. Students' effective learning is demonstrated when they meet learning expectations for the programmes in which they participate and provide a foundation for learning improvement. The participants said curriculum is the backbone of all higher education institutions, actually touching every particular element of university administration. The curriculum, when properly structured, managed and controlled by managers of the universities, determines the effectiveness of a university's offering, that is from programme design and development, delivery, resource allocation, and, most importantly implementation. Curriculum Management aids and promotes a university's quality procedures and efficiency in providing a valuable experience to its students and stakeholders in today's highly competitive and innovative educational environment.

From curriculum development to learning assessment, the curriculum management process should strive to continuously improve. As a result, teaching and learning activities on the LMS should be evaluated on a regular basis. *"The educational expectations for each degree programme are defined by learning goals. They define the cognitive and behavioural skills that our programmes are designed to impart, as well as key stakeholders' expectations. In addition, the essential element of curricula management, namely, the learning goals and associated objectives, are directed by senior university managers, with faculty assisting in their implementation for goal achievement".* To effectively prepare students, the curriculum must be current, responsive and innovative.

The course outlines which states the learning goals and learning objectives of each course are communicated to the students at the beginning of a semester. The learning goals define the overarching skills or knowledge areas, and are general in nature.

The goal is instantiated by one or more specific objectives to provide the required framework and detail for effectively assessing whether learning has occurred for a particular learning goal. The LMS is used to conduct mid-semester and end-of-semester examinations in addition to emphasizing mastery. However, the study found that students frequently plagiarise, resulting in their grades being cancelled. "*By emphasizing communication, critical and analytical thinking, collaboration, information management, and a broad exposure to key business disciplines, we promote intellectual and professional development of students by encouraging our students to produce original work without coping verbatim. According to the findings of a study conducted by one of our lecturers, the failure rate of online exams is higher than that of face-to-face exams because the high similarity rate is index*".

The need to deliver better management processes for a more efficient and effective management of course development and review is one of the most prevalent reasons for implementing and managing curriculum on the LMS. The quality of innovation is determined by the culture and organisational structures that have been incorporated, as well as the additional features that universities are developing.

RESEARCH QUESTION 3 : What are the factors that influence the promotion of innovation and the use of LMSs in Ghana's Universities?

4.4.4 Factors that Influence the Use of LMS in Universities in Ghana

It is critical to comprehend the significant aspects that influence students' decision to continue utilizing the e-learning system. Also, as the demand for higher education and e-learning grows in Africa after the pandemic, it's critical to understand the elements that influence students' and faculty's adoption of a particular e-learning platform. Early adoption (acceptance) and long-term usage are essential for an e-learning system's success (Tai et al., 2012). On the back of the aforementioned statements, the study investigated the factors that influence the use of LMS in Ghana's Universities.

The findings revealed that both internal and external factors contribute to the adoption and use of LMS in Universities in Ghana. The internal factors include perceived ease of use, personal innovativeness, style of teaching by the lecturers and computer literacy. Perceived usefulness was greatly influenced by system quality and perceived self-efficacy, which in turn affected attitudes toward technology use and behavioural intention indirectly. *"The acceptance of technology by lecturers is a key factor in its successful implementation. In order to implement, adopt, and accept the use of new IT systems, lecturers must change their ways, behaviour patterns, and perspectives"*. On the other hand, the external factors revealed by the study include user training, technical support, management support, availability and accessibility of technological resources, absence of technical problems and assistance provided by other students. The quote below is from one of the Deans on the internal factors. *"In this institution factors influencing the use of Moodle is user training, technical support management and support. The university has been providing all resources needed to keep the LMS running. Another factor is the availability and accessibility of technological resources and absence of technical problems"*.

LMS have in recent times been adopted and used in educational activities, and their usefulness in universities has increased significantly. The use of these systems in institutions of higher learning is becoming increasingly important in order to improve student learning, improve instructional teaching performance, and reduce educational costs. *"This institution is using the Moodle platform. The students and lecturers use the platform because they have gained the requisite skills to use the platform for diverse activities. What I have observed in the fast few months is that some students and lecturers are open to novel technology and are willing to experiment that technology. I believe that also influences them to use the Moodle. Again the style of teaching embraced by lecturers can influence the use of LMS by students."*

The finding revealed there has been a tremendous increase in the acceptance and use Learning Management Systems (LMS) in universities. According to Aljarrah, Ababneh,& Cavus (2020), advanced and developing nations have successfully deployed various online education platforms that allow students to take their lectures online, work collaboratively with each other and, and access learning materials using any device,

wherever, and at any time via the Internet. *"I use the LMS because it gives me the opportunity to upload and publish e-learning materials quickly and easily at any location and also there is unlimited access to the e-learning materials by authorized members whenever they need it".*

Making inferences from the responses, it can be concluded that the factors that influence the adoption and use of LMS in Ghana's Universities include perceived ease of use, personal innovativeness, style of teaching by the lecturers, computer literacy, user training, technical support, management support, availability and accessibility of technological resources, absence of technical problems and assistance provided by other students. This finding to a certain degree conforms with the factors listed by Venter et al (2012) and Ndume et al (2018). According to Venter et al. (2012), the factors that influence acceptance and use of LMS in an overwhelming majority of institutions include technological infrastructure, instructional efforts, faculty and student competencies and technology satisfaction. The factors provided by Ndume et al (2008) include management support, methodology, resource accessibility and availability, educational culture, and learning styles.

Furthermore, the findings are consistent with Dampson's study (2021), which found that perceived usefulness, perceived ease of use, and attitude toward LMS were all strong predictors of students' LMS adoption. This finding is consistent with the findings of Mohammadi et al. (2021), who discovered that performance expectations, ICT and HELMS literacy, content quality, and university management all influence the adoption and use of LMS (HELMS). It can be deduced from the findings of this study that LMS inbuilt features such as discussion forums, chats, quizzes, emails, and discussion forums, which are supposed to promote the development of Self - regulated learning skills, seem to be underutilized.

RESEARCH QUESTION 4: What leadership competencies drive innovation in Universities in Ghana?

4.4.5 Leadership Competencies that Drive Innovation in Universities in Ghana.

This study explored the leadership competencies needed to drive innovation and the use of LMS in Universities in Ghana. Leadership is multifunctional which involves managing through others, and helps organisations cope with change that seems to be increasing exponentially in today's globalized environment. Different leadership styles are likely to have different impacts on employee involvement and commitment, which in turn influence the climate for innovation management (Bel, 2010). Ramsden (2013) suggests that effective leadership in universities entails; leadership in teaching, leadership in research, strategic networking and vision, transformational and collaborative leadership, fair and efficient management, development and recognition of performance, and interpersonal skills.

From the responses, it was deduced that transformative and inspirational leadership style influences innovation in the faculties and departments of the universities. Transformational leadership is a leadership theory that changes and transforms individuals, it involves assessing associates' motives, satisfying their needs, valuing them and creating a vision through inspiration to execute a change with committed followers (Northouse, 2016). Commenting on the leadership competencies that drive innovation in universities in Ghana, one the Vice-Chancellors had this to say:

"*I must admit that an effective transformative leader can influence staff to be innovative and come out innovative ways of doing things. Leaders who exhibit a high level of inspirational leadership engage, inspire, and empower their employees to perform better on the job. The ability to instill a desire for success in followers may allow them to challenge the status quo and influence employees' intellectual abilities to innovate productively*".

On the same tangent, a Dean stated that:

"*Attending to the individual employee's welfare needs, empathizing and rewarding their achievements motivates the employees to excel and this is the hallmark of a transformational leader who can initiate and sustain organisational culture that promotes innovation*"

The participants divulged that leadership competencies that drive innovation in the Universities include high integrity, solving problems, motivating and inspiring others, achieving results, and communicating effectively, decision making, creative reasoning and allowing employees to take part in decision making. One of the Vice-Chancellor's on the leadership competence that drive innovation said.

"*As a leader, I've learned that the following skills are essential for any good leade to drive innovation in any organisation, motivating and inspiring others, having high integrity, solving problems, achieving results, and communicating effectively and prolifically, teamwork should be promoted and celebrated and cultivating strong interpersonal relationships. The point is that it is exceedingly difficult to achieve these skills without first establishing a solid foundation of great interpersonal relationships*".

In support of this one of the Deans indicated that:

"*In my opinion, leadership characteristics associated with driving innovation and employee empowerment include decision making and creative reasoning. You should involve your staff in decision making and by so doing they feel part of the change process and become committed to its success.*" I organised a workshop for staff and participants described instances of empowered behaviour in their organisation, such as problem solving, decision-making, and delegation and sharing of knowledge.*"

From the responses, it can be concluded that the leadership competencies that drive innovation in the Universities include motivating and inspiring others, possessing high integrity, solving problems, achieving positive results, communicating effectively, decision making, creative reasoning and allowing employees to take part in decision making, attending to the welfare needs of employees, showing empathy and rewarding achievements.

The findings on the leadership competencies that drive innovation revealed that actively pursuing innovation requires significant resources and deliberate focus on set goals. Leadership practices and support from the organisational structure, as well as a culture that supports creativity, determine an organisation's adaptability to change. One of the most important leadership skill is the ability of the leader to persuade staff to adopt the

institution's goal, sense of direction, purpose, and priorities while working collaboratively to achieve them.

Leaders who use transformational leadership skills inspire their employees to contribute effectively to the institution's transformation and improved performance. According to research findings, interpersonal skills (strong communication skills), planning skills (working to develop short and long term goals), technical skills (expertise in an activity), human skills (ability to work with people), and conceptual skills (ability to work with new ideas) are the leadership competencies that influence innovation in universities.

RESEARCH QUESTION 5: What are the possible intervention strategies that can be recommended to promote innovation and the use of LMS in Ghana's Universities?

4.4.6 Strategies and Interventions that Promote Innovation and use of LMS in Universities in Ghana

The last objective of the study was to suggest strategies and interventions that promote innovation and use of LMS in Universities. One of the strategies adopted by some participants is that they award marks attendance, assignment, frequent asking of questions and participation in the online class. They believe adhering to this strategy promotes the use of LMS. The participants complement this with face to face interaction because some students do not utilize the learning materials provided on the LMS platforms. One of the HODs confirmed this finding:

"*Most students do not go beyond what the lecturers give them. So, one strategy is to give marks. So in my class, those that attend lectures, do assignments, answer questions frequently are given marks for participate. Also, since some of them will not make use of the learning materials on the LMS, it is obvious that sometimes you need the face-to-face to compliment it.*"

Governments and other regulatory bodies have developed policies and guidelines to ensure that instructors spend the required time online, interacting with learners, in order to maintain the quality of online learning. University standard operating procedures have also been developed to ensure that these standards are followed. In an online course, for example, some universities require instructors to create and post a certain number of

forums, chats, quizzes, and online assignments each semester. Students must also engage in these online activities, interacting with both instructors and their peers. Other strategies recommended include awarding marks for online class attendance, assignment, frequent asking of questions and participation or contributing to topics being discussed in class, engaging in face-to-face interaction and elevating the reading culture of the students by obtaining databases linked with departmental platforms. Also it's worth noting that self-report tools are still being used to assess students' engagement in technology-enhanced learning environments (Araka, Maina, Gitonga, & Oboko, 2020).

Regarding the strategies for promoting innovation, one of the Vice-Chancellors said that:

> *"In my opinion, innovation results from the development of a collaborative sense of purpose, the developing of people's creativity, and the teaching them to recognize and maximize opportunities for change. Therefore, the you have award creativity, individuals who come up new ideas or improved ways of doing things must be commended"*

Another Dean had this to say

"Remember that innovation is only valuable if it leads to action. Give people the time and resources they need to develop and implement ideas that are worth acting on. Failing to do so means that your institution will not benefit from innovation".

On effective communication as a strategy for innovation, one of the Vice Chancellors said:*"Open communication between management and employees is a strategy that promotes innovation. There should be effective communication in an atmosphere of trust if you want to establish a new, more trusting culture that fosters innovation".*

"Introduction of blended (Combination of both online and in-person) mode of lecture delivery and assessment; Students were provided with two hotline numbers they could call for technical assistance as well as a number for each faculty/school they could contact for the online programmeme delivery. They were also given free Wi-Fi on the school premise as well as their hostels to allow them observe the covid-19 protocols while conveniently attending their online classes; The university management also appointed a monitoring officer for the monitoring of the online lectures and generation of reports weekly. Prior to

this appointment the management of the University, at the early stages of the adoption of the online teaching platform, constituted a 10-member Monitoring and Evaluation Task Team to report on the online teaching and learning as well as interim assessments and mid-semester examinations."

The participant recommended the introduction of technology-assisted learning strategies for promoting innovation. It is proposed that educational leaders create clear institutional direction and policy in order to successfully adopt a blended learning approach; create a single point of contact for customer service, quality assurance, and project management; develop formal instructional design that best suits their enviroment; create an innovation fund to provide financial support and incentives to faculty and departments to initiate blended learning course transformation; Systematic assessment of success of the platform in terms supporting teaching, learning and administration: establish a task force to address issues, challenges, and opportunities for effective and efficient use of the technology. The government must support universities' efforts to innovate by establishing a clear funded policy as well as incentive support for existing and new technologies.

A summary of the responses to the question indicates that universities have learnt great lesson from the outbreak of the COVID-19 pandemic by investing in science and technology to find long-term solutions to the challenges they face. This is driven by thier strategy, capability, proactive approach, efficient use of resources, and dedication to the process.

4.5 INTERGRATION OF THE FINDINGS OF QUANTITATIVE AND QUALITATIVE DATA

The quantitative and qualitative data results indicated that the implementation and use of LMS platforms was effective. In addition, learning management systems provide the structure for blended learning (Akgunduz & Akinoglu, 2017). The study identified leadership as a critical aspect for systemic change because leaders create a framework that encourages learning and provides the infrastructure and support needed to build a collaborative learning culture on a continuous basis. According to the findings, recent technological advancements and the extremely high rate of the internet usage have transitioned the traditional classroom teaching and learning setup to an eLearning

platform. When technology is used in the education setting, the quality of teaching and learning improves (Mtebe and Raphael, 2018). E-learning in the form of LMS adoption is a very useful tool for virtual education and has reduced the time students and lecturers devote to commuting from their homes to their institutions for teaching and learning (Yakubu and Dasuki, 2018) However, the quality of the e-learning systems adoptd has a significant impact on the quality of teaching in an e-learning environment. Some benefits of e-learning include lower costs associated with traditional classroom instruction (face-to-face learning), easier coordination and communication among participants, and the ability for instructors to keep track of the progress of knowledge dissemination.

The study found that a lecturer's attitude toward technology was an effective personality predictor of the intention and behaviour of other introduced technologies in the literature. It is expected that a positive attitude toward technology or related technology will foster positive intentions toward newly introduced technologies. Because the lecturers in this case were open to new technology, they agreed to use a learning management system (LMS) for blended learning. This highlights the importance of developing positive attitudes among faculty toward educational technologies, including LMS. The direct effect of technological attitude on behavioural intentions is consistent with previous findings by Alghamdi and Bayaga (2016). Lecturers' knowledge, beliefs, attitudes, and persuasive communication influence their planning, instructional decisions, ICT adoption, and behaviour patterns. As a result, a comprehensive review of lecturers' attitudes of the use of ICT in education can provide additional insight into the basic requirements for their successful adoption. If top management ignores this fact, their decision to engage in blended learning to meet current demand will collapse. Because the findings show a positively significant influence of personality traits, ease of use on actual use of the LMS, university management must work effectively to ensure that the use of the LMS is made simple. That is, lecturers must be well-trained, and enabling platforms must be made available to enhance and support the use of the Open Source LMS.

The study indicates that efforts to integrate educational technology into teaching must be supported by social and institutional contexts. For the successful implementation of E-learning systems, faculty must have access to power, technical support, fast Internet connectivity, and regular training of lecturers and students. Universities must recruit

instructional designers and other technology experts to assist lecturers and students in using the LMS platforms effectively for pedagogy, course design, student assessment, and ethics. A good design of teaching methods or social interactions is highly dependent on the access to technological support. The university management must also take action to ensure that the blended learning environment is favorable for the adoption and use of Open Source LMS. This entails providing the necessary technical and infrastructural facilities, as well as a suitable IT connections and IT training. The interface, features, and tools, as well as the system's functionality, the speed of navigation, and the interactive ability of the LMS, should be supervised, analysed, and updated on a regular basis in accordance with the needs and expectations of faculty members and students.

Leaders who demonstrate strategic leadership characteristics may reduce unproductive behaviours and provide top management team members with change management strategies. Xi, Zhao, and Xu, (2017) asserted that leaders who engage in strategic leadership behaviours seek to balance employee needs and organisational commitment to improve performance. Top management teams have a direct impact on the organisation's performance (Tognazzo, Gubitta, & Gerli, 2017). Furthermore, effective planning process, creative thinking, creativeness, and tracking the path to achieve strategic objectives are necessary skills for institutions to improve their profitability. Other strategic leadership skills include communication skills, incentive, training, and guidance.

4.6 SUMMARY OF THE CHAPTER

Chapter four presented the results of the quantitative and qualitative study that sought to find out the leadership role of university management and governance in promoting innovation and use of learning management systems. The results of both quantitative and qualitative analyses were discussed and presented in this chapter. This was done because the study employed an explanatory sequential mixed method design in which quantitative data was gathered and processed first, followed by qualitative data. In this chapter, the discussion and presentation were triangulated. The chapter shed light on the quantitative and qualitative findings in accordance with the existing literature, and demonstrated the extent to which the qualitative data supplemented the quantitative findings.

The analysis showed that the proliferation of the COVID-19 pandemic and the increase in population has resulted in the universities incorporating e-learning platforms into the teaching and learning process. Also, the factors that influenced adoption and use of innovation and the learning management systems was considered. The leadership competencies as well as the strategies for promoting innovation was discussed. The next chapter summarizes the major findings from the study's literature review and empirical investigation. It also presents the study's conclusions, recommendations for further research.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

In this chapter, the researcher presents a summary of the findings, the thesis' contributions to knowledge, policy implications for universities and researchers, conclusions, and recommendations for promoting innovation and the use of LMS. Furthermore, the study's limitations and recommendations for future research have been addressed.

5.2 SUMMARY OF CHAPTERS

Chapter One provided a general overview of the role of university leadership in promoting innovation and the use of LMS, with a focus on the background of the study, the statement

of the problem, the objectives of the study, the hypotheses of the study, research questions, the scope of the study, the significance of the study, the definition of terms and the structure of the study.

Chapter Two reviewed literature on LMS, the role of leadership in promoting innovation, and leadership competencies that drive innovation, among other topics. It went over the various theoretical and conceptual connections that influence the adoption of innovation and the use of technology.

Chapter Three concentrated on the research paradigm, approach, design, population, sampling techniques, data analysis, validity and reliability of the data collected, study trustworthiness, and ethical considerations. It thoroughly examined the methodology of the quantitative and qualitative phases of the research.

Chapter Four contained the findings of the study. It presented a quantitative analysis based on research questionnaires obtained from respondents, as well as a qualitative analysis based on interviews. The Chapter also showed how the qualitative results confirmed the quantitative results.

Chapter five included a summary of the research findings, key contributions of the study to knowledge, limitations of the study and future directions, a conclusion, and recommendations.

5.3 SUMMARY OF FINDINGS

The study used a mixed research design made up of both quantitative and qualitative approaches to survey senior managers of universities, deans, heads of departments, lecturers, administrative heads and student leaders from three universities: University of Professional Studies, (UPSA), University of Ghana (UG) and the University of Energy and Natural Resources (UENR). Quantitative and qualitative data were obtained from a purposive sample of 70 participants respectively from each of the three universities, totalling 210 participants for the entire study to answer the research questions of the study. The participants were variously made up of the 5 top management officials 2 deans, 2 heads of departments, 60 lecturers, and 1 student leader (70 participants and respondents from each university). Quantitative data were obtained from 180 lecturers with a 100%

response rate using an online form called Google Docs. Qualitative data were obtained from the 15 top management officials, 6 deans, 6 heads of departments and 3 student leader.

The summary of the findings was presented under the following themes: demographic data, types of LMS used by the selected universities, perceived use of learning management systems, personality inventory of the use of LMS. These themes answered the main research questions and sub-questions of the study.

5.3.1 Demographic Data

Lecturer demographics studied include gender, age, qualification and position. The study surveyed more male lecturers (66.7%) than female lecturers (33.3%) of 180 lecturers from the three universities which likely reveals the gender composition and diversity of the Universities. The age distribution of lecturers ranged between 26 to 60 years. The majority of lecturers were between the age brackets of 36-40 (24.4%), 41-45 (27.2%) and 46-50 (26.1%). About 11.7% are below 36 years and 10.6% are above 50 years. It is revealing that the majority of the lecturers (77.7%) who are expected to be tech-savvy were generally young, vibrant and relatively farther from retirement. Regarding academic qualification, the study revealed that the lecturers had outstanding postgraduate degrees (86.4%) and professional qualifications (13.6%), making them qualified to teach. Positions held by lecturer were Lecturer (64.2%), Senior Lecturer (9.5%), Head of Department (3.9%), Vice Dean (8.9%), Dean (6.7%) and Other Positions (6.7%). It is evident that lecturers also performed administrative duties in diverse faculties or departments in the Universities.

5.3.2 Current Innovations and Learning Management Systems

The study sought to find out the current innovations and learning management systems in Ghana's Universities. The study revealed that universities were variously using three main learning management systems (LMS), namely Blackboard (7.1%), Sakai (13.0%) and Moodle (71.6%). A minority of the lecturers (8.3%) who taught in universities used Whiteboard and I-campus as their LMS. Sakai and Moodle were exceptionally known for their user-friendliness and intuitiveness. The study revealed the perceived uses of LMS in Ghana's universities. The lecturers agreed to using LMS in their respective universities for course administration, teaching delivery, student testing and class communication. Course

administration involved managing class information and tracking student activities. Teaching delivery involved providing materials and resources to students. Student testing focused on assessing and evaluating students. Class communication also involved communicating and collaborating with students. These findings point to a shift or current trend in teaching and learning, where the traditional classroom environment with its didactic inefficiencies is being phased out for the collaborative virtual classroom where 21st-century skills are better learned and nurtured. It is a fact that the COVID pandemic remains the eye-opener for current innovations in teaching and learning, especially in the use of LMS in universities.

These quantitative findings were confirmed by qualitative information obtained from the semi-structured interviews of leadership in the universities. University leadership indicated that eLearning solutions were increasingly being advocated to augment existing traditional teaching and learning efforts and that the adoption of LMS as a new education model is one the fastest growing innovations currently in the universities which help to facilitate uninterrupted lectures, that is teaching and learning. The study found out that some of these newly adopted eLearning platforms were Zoom and Google classroom which were great for blending teaching and learning and ensured continuous teaching and learning without interruptions. In addition, Sakai was embraced with its open-source LMS functionalities which could handle announcements, assignments, calendars, grade books, tests and quizzes.

5.3.3 The Influence of Personality Traits on the Use of LMS

The study used a personality inventory tool based on the Big Five Personality Model to assess the motivation, strengths and weaknesses and attitudes toward the use of LMS among the lecturers in Ghana's universities. The Big Five Personality Model is characterized by five broad traits which collectively represent an individual's personality, namely neuroticism, extraversion, conscientiousness, openness to experience and agreeableness.

Neuroticism, which describes the tendency of an individual to experience negative feelings consistently due to emotional instability such as anxiety, was used in the study to determine the extent to which this personality trait influences the use of LMS among

university lecturers. The majority of lecturers disagreed with statement that using LMS systems made them feel anxious, frustrated, depressed, uneasy, nervous and vulnerable (M=1.94; SD = 0.09). The study found out that neuroticism was negatively associated with LMS and the association between the two variables, though weak, was statistically significant. (r = ;p <0.05).

The study revealed that extraversion, which refers to the tendency of an individual to relate socially with others, had a statistically significant positive association with LMS, which association was statistically significant (r=0.220; p<0.05). The study revealed that lecturers were comfortable using LMS to interact with staff and students, communicate and transfer information easily with colleagues, conduct online exams and assignments, complete course syllabus on time, conduct student learning forums effectively and efficiently and collaborated with colleagues to conduct course projects for students (M=3.93; SD=0.11).

On the other hand, conscientiousness, which refers to the characteristic of an individual to plan and be goal-driven, was positively correlated with LMS, however, the association lacked statistical significance (r=0.122, p>0.05). This means that consciousness has no significant effect on the use of LMS in universities. Yet, university lecturers confirmed that they were able to print out student grades and performance graphs on time using LMS, monitor student participation for each course and engage the LMS system administrator remotely using the LMS help platform when they experienced system challenges. (M=3.77, 0.25)

The study revealed that openness, which describes the tendency to consciously seek unconventional ideas based on intellectual curiosity, influences the use of LMS among university lecturers. Openness was positively correlated with the use of LMS among lecturers and the relationship between openness and the use of LMS was statistically significant (r=0.208; p<0.05). Lecturers indicated that they enjoyed the use of LMS due to its artistic and interactive interface design and they used LMS to improve their creativity regarding how to teach semester courses online and to receive student feedback easily (M=3.88, 0.09).

Personal innovativeness, which describes an individual's willingness to engage with new technology, positively correlated with the use of LMS among lecturers and the relationship was statistically significant (r=0.211, p<0.05). Lecturers indicated that they always looked for ways to use and explore the features of LMS to use effectively and they liked to experiment with it by requesting the inclusion of additional features (M=3.55, SD=0.25).

5.3.4 The Benefits of LMS to Ghana's Universities

The study found out that the key benefit derived from the use of LMS in the universities is the interactivity of LMS in the sense that, LMS allowed lecturers to interact with their students and vice versa. In addition, LMS also ensured effectiveness and efficiency in teaching and learning. Lecturers and students could communicate with and among themselves without difficulty. Another benefit of LMS was that it encouraged student creativity, especially because LMS facilitated and enhanced student-centred learning where the monologue kind of didactic practices are replaced with participatory learning approaches. LMS allows students to take control of the learning process. Given the plethora of features useful for teaching and learning in LMS, there is an added benefit of making the teaching and learning experience enjoyable. Students are allowed to learn at their own pace, encourage collaborative work, emphasize problem-solving and aids in self-assessment. One advantage of having Learning Management Systems in education has been the ease with which instructors can assess their students' performance. The system allows for Real Timed/Untimed tests and quizzes to be administered from the LMS and grading them can be automated and made even easier. The use of the easy assessment and grading tools helps to examine a large class of students without challenges. Other tools or features on the LMS aid in making the most of the LMS technology. The features contribute to a more enjoyable learning experience and tends to provide variety in order to keep learning from becoming monotonous

The study has confirmed that the adoption of LMS has resulted in innovation, continuous learning and improvement on the part of both lecturers and students. LMS help to facilitate school systems in maintaining the integrity of educational programmes by allowing educations to develop courses, deliver instruction, facilitate communication, foster student collaboration, assess student success and provide other learning resources for support.

Universities stand to benefit greatly from the implementation of an LMS. The system primarily assists them in designing and managing online courses, in-class multi-device learning, creating and integrating course materials, aligning content and assessments, creating and integrating customised tests for students, and blending learning. In addition, LMS centralises all information, making it easier to manage the teaching and learning process.

Undoutedly, integration of technology in the teaching and learning process could enable lecturers to cease from being transmitters of knowledge instead transfer the learning attitudes, support peer learning and help students to alter information into knowledge. Integration of technology in schooling, when exquisitely approached and managed, could convert higher education institutions into a high performing tertiary education sectors, better than how the majority of them currently are in the continent. This is particularly relevant to the continent of Africa which is still grappling with the challenge of underdevelopment.

w5.3.5 The Role of University Leadership and Governance in Driving Innovation

The study sought to find out the role that leadership and governance plays in promoting innovation and the use of LMS in universities. The study revealed that university leadership and management play a significant role and were proactive in driving innovation. Management drive innovation by making innovation a formal agenda item at regular leadership meetings. This sends a strong message to employees about the importance management places on innovation. In addition, they establish performance indicators and objectives for innovation. The university's leadership defines the type of innovation that drives growth by establishing strategic goals and fostering an organisational culture of active employee participation and establishing an organisation-wide innovation strategy.

 The study revealed some of the administrative heads showed lecturers the courses they would be teaching and organized training for them. This was done during the semester at the beginning of the academic year. For instance, the study revealed how one head of the department coordinated the arrangement where a trainer or LMS Coordinator is designated to instruct lecturers on how to prepare materials with audio components in every department. University leadership also ensured that both students and teachers received

distinctive training to grasp the necessary skills needed to exploit the LMS deployed in the university. Very often, university leadership also promotes innovation and the use of LMS by creating a culture of innovation in the respective department to encourage innovation from the staff.

The study revealed that university leaders drive innovation by supporting creative talents, raising employee awareness of innovation through communication strategies, establishing timelines for meeting strategic goals and programmeme management criteria based on individual and group success. This promotion of innovation on the part of university managers is accompanied by employee empowerment toward innovation in terms of the integration of technology in teaching and learning.

5.3.6 Factors that Influence Promotion of Innovation and the Use of LMS

The study found out that both internal and external factors influenced the promotion of innovation and the use of LMS among universities in Ghana. Internal factors included the perceived ease of use, personal innovativeness, style of teaching by the lecturers and computer literacy. University leadership revealed that students and lecturers use LMS because they are open to novel technology and willing to experiment with LMS. This is also enforced by the style of teaching embraced by lecturers which likely influences the use of LMS among students. The study indicates that the current generation of students are tech-savvy and are typically good with technology which in turn makes it easy for them to assess the LMS any time they prefer. External factors per the study which drive innovation and use of LMS include user training, technical support, management support, availability and accessibility of technological resources, absence of technical problems and assistance provided by other students.

5.3.7 Leadership Perception of Competencies that Drive Innovation

The study also sought to find out the leadership competencies needed to drive innovation and the use of LMS in Ghana's universities. The study revealed that transformative and inspirational leadership style influences innovation in the faculties and departments of the universities. Some administrative heads admitted that an effective transformative leader could influence staff to be more innovative and come out with innovative ways of doing things, especially for leaders who exhibit a high level of inspirational leadership in

engaging, inspiring and empowering employees to perform better on the job. The study also established that leadership competencies that drive innovation in the universities include integrity, solving problems, motivating and inspiring others, achieving results, communicating effectively, decision making, creative reasoning and allowing employees to take part in decision making.

5.3.8 Challenges in the Promotion of Innovation in the Universities

Promoting the use of LMS in teaching and learning in Ghana's universities is fraught with many challenges. The study revealed that the main challenge encountered when promoting innovation has to do with the attitude on the part of both lecturers and students toward the use of technology. Lecturers hardly explored other features of the LMS such as forums and assignments and would just upload learning materials onto the LMS and believe that that is all that the use of LMS entails. The cost was the next challenge revealed by the study as another hindrance to achieving innovation with LMS. Since the use of LMS was often internet-driven and required the purchase of a data bundle to access the internet, the vast majority of students complained that the cost of data was prohibitively expensive. The study also found out that class attendance and student participation were low in some courses.

According to the responses of the participants, the leadership of the selected universities had been making a concerted effort to promote innovation and the use of LMS, but they face a slew of challenges. The implementation of e-learning reform measures had been thwarted with plethora of challenges such as, inadequate infrastructural facilities, ICT-challenged lecturers, insufficient ICT staff to train e-learning system users, poor Internet connectivity, and high e-learning access costs. Additionally, cultural attitudes, beliefs, traditional educational practices, and lack of strategic planning and effective management, are significant barriers to e-learning in education.

5.3.9 Strategies and Interventions that Promote Innovation and Use of LMS in Universities in Ghana

The study also sought to find out the strategies and interventions that promote innovation and use of LMS in Ghana's universities. The findings show that university leadership managed these challenges by adopting strategies that prompts and encourages students to

use LMS. One strategy used by some lecturers as revealed in the study was to award marks to students for attendance and class participation during online lectures with the belief that students would likely be inclined towards the use of LMS. In addition, lecturers complemented online learning with face-to-face interaction since some students hardly used the learning materials provided on the LMS platforms. Secondly, the study found out that elevating the reading culture among students by obtaining databases that are connected to departmental platforms is a good strategy for promoting the use of LMS in universities.

The participants recommended that educational leaders create clear institutional direction and policy in order to successfully adopt a blended learning approach; create a single point of contact for customer service, quality assurance, and project management; develop formal instructional design that best suits their environment; create an innovation fund to provide financial support and incentives to faculty and departments to initiate blended learning course transformation; Systematic assessment of success of the platform in terms supporting teaching, learning and administration: establish a task force to address issues, challenges, and opportunities for effective and efficient use of the technology. The government must support universities' efforts to innovate by establishing a clear funded policy as well as incentive support for existing and new technologies.In response to shortfalls in public funding, universities have adopted revenue-generating activities.

5.4 CONCLUSION OF THE STUDY

The study sought to explore the leadership role of university management and governance in promoting innovation and use of learning management systems in Ghana's universities. This section contains the conclusions of the study organized into two sub-sections based on conclusions from reviewed literature and empirical literature.

The findings show that integrating technology into higher education institutions will undoubtedly facilitate the transformation of the education sector in terms of content delivery to students. This suggests that the existence and availability of technology in education could support the transformation of the tertiary education sector for the better, as evidenced by the recommendations made.

5.4.1 Conclusions from Reviewed Literature

Krouska et al. (2017) define Learning Management Systems (LMS) as a Moodle developed to enable educators, administrators and learners with a single, reliable, secure and integrated system to build personalized learning environments. The six main features of LMSs are automated administration, quick assembly and learning content delivery, training activities consolidation, support of portability and standards and personalized content and knowledge reuse (Claar, Dias & Shields, 2014). Many public and private institutions in Ghana, including schools and universities, were closed down during the global COVID-19 pandemic (WHO, 2020). This led to an exponential rise in the adoption of Learning Management Systems (LMS) to help universities manage, deliver, plan and track the learning and teaching process since the start of the 2020/2021 academic year. LMS users include students who use the system for educational purposes, instructors who use the system to monitor, teach, and evaluate students, and administrators who assist all users to keep the system running smoothly.

Factors influencing the implementation of innovation and the use of LMS in Ghana's universities include external factors (Sherbib et al, 2012), organisational factors (MUENRzero et al., 2016), technological factors (Al-Busaidi & Al-Shihi, 2010), social factors (Coleman & Mtshazi, 2017) among others.

It can be concluded from the empirical literature that leadership plays a significant role in the promotion and implementation of LMS. Leadership skills and competencies needed to drive innovation in universities include interpersonal skills, planning skills, technical skills, human skills and conceptual skills (Tarver, 2021; Finkle, 2020; Techno Func, 2020). Transactional and transformational leadership styles impact corporate culture and performance and organisational climate (Burns, 1978; Bass, 1985).

The theoretical framework used for the study was underpinned by the theories of Information Technology Use and Personality Trait Theory. The Personal Traits Theory was critical to the study and the Big Five Personality Inventory model which are neuroticism, extraversion, conscientiousness, openness to experience and agreeableness as espoused by Terraciano & Costa (2004) were key influencers of the adoption and use of LMS among Ghanaian universities, and by extension, all universities.

5.4.2 Conclusions from Empirical Literature

5.4.2.1 Quantitative Results

The quantitative study aspect of the study sought to find out the current innovations and learning management systems in Ghana's universities. It also sought to determine the extent to which personality traits influence the use of LMS among lecturers in universities. The study concludes that Ghana's universities are currently using LMSs in teaching and learning, popular among them is Sakai, Moodle and Blackboard. The LMS is used by university lecturers in course administration, teaching, learning and assessment. The study also concludes that eLearning solutions augment existing traditional teaching and learning practices and facilitate uninterrupted teaching and learning in universities. LMS has proved beneficial in a pandemic era, both pre-and-post COVID. LMS is beneficial to universities and so many regards.

The study concludes that personality traits are key to influencing the use of LMS in Ghana's universities. The study confirmed that five important personality traits influenced the use of LMS. Neuroticism, extraversion, openness and personal innovativeness were found to have a significant impact on the use of LMS among university lecturers. However, conscientiousness per the study was disconfirmed as influencing the use of LMS. Given the foregoing findings from the study, it is plausible to conclude that personality traits key influencers of the adoption and use of LMS in Ghana's universities.

5.4.2.2 Qualitative Results

The quality study sought to find out the role of university leadership and governance in driving innovation and use of LMS in Ghana's universities, the factors and leadership competencies that influence such innovation and LMS use. The qualitative aspect of the study was also to look that the possible strategies and interventions that promote innovation and use of LMS in Ghana's universities.

Based on the findings and insights from the study, the study concludes that the emergence of COVID-19 and technological advancements has prompted Ghanaian universities to be innovative by adopting and utilizing LMS for operational continuity and this ensures continuous teaching and learning. LMS brings about creativity, interactivity gives students

to take control of the learning process, features of LMS including forums, quizzes and assignments make learning interesting for students. Moreover, LMS improves teaching and learning and productivity. Unlike traditional classroom-based teaching, where the instructor follows a predetermined approach, online methods of teaching with the help of an LMS allow instructors to experiment with the application of various learning techniques such as blended learning, constructivist learning and observational interactions based on what works best for the learners. Using an LMS as an online platform in education allows you to easily integrate it with other platforms to encourage students and instructors to learn and share their knowledge.

Secondly, the study concludes that the factors that influence the adoption and use of LMS in Ghana's Universities include perceived ease of use, personal innovativeness, style of teaching by the lecturers, computer literacy, user training, technical support, management support, availability and accessibility of technological resources, absence of technical problems and assistance provided by other students.

Thirdly, the study concludes that the leadership of the universities plays a key role in promoting innovation in the universities by encouraging the use of LMS among the students and lecturers. The promotional strategy they have adopted is to train both the students and lecturers to be abreast of the features of the LMS platforms. As university leaders move their universities to globally accepted levels, existing university culture can either stifle or enhance administrative and employee efforts to encourage innovation. As part of the process of encouraging an innovative culture, university management must take critical steps to study the organisation's strengths and limitations to adapt to become a stronger and more responsive organisation. This can help to create a learning environment that encourages innovation. It also means that staff and students should be given opportunities to try new things and turn those experiences into knowledge that is accessible to all employees at the university. Such a culture fosters innovation because all university stakeholders are allowed to contribute new ways of achieving the university's goals and objectives.

The study concludes that leadership faces challenges in promoting LMS in universities. These challenges which are attitudinal, cost-related and absenteeism and class

participation can be resolved through awarding marks for online class attendance, assignment and participation or contributing to topics being discussed in class, engaging in face-to-face interaction and elevating the reading culture of the students by obtaining databases linked with departmental platforms.

The study concluded that the leadership competencies that drive innovation in the Universities include motivating and inspiring others, possessing high integrity, solving problems, achieving positive results, communicating effectively, decision making, creative reasoning and allowing employees to take part in decision making, attending to the welfare needs of employees, showing empathy and rewarding achievements.

5.5 CONTRIBUTION OF THE STUDY TO KNOWLEDGE

The role of university management and governance in promoting innovation and the use of Learning Management Systems in Ghana's universities is explored in this study. Without a doubt, incorporating technology into the teaching and learning process could allow lecturers to shift from being knowledge transmitters to transferring learning attitudes, supporting peer learning, and assisting students in transforming information into knowledge. When approached and managed carefully, technology integration in education has the potential to transform higher education institutions into high-performing tertiary education sectors, far better than the majority of them seem to be, currently on the continent. This is especially important for Africa, which is still grappling with the problem of underdevelopment.

The study is well-timed in terms of emerging with new ways of re-examining impediments to total embrace technology in the twenty-first century as a means of preparing current students for the future knowledge economy. This research is significant and timely because quality tertiary education that benefits Africa's and the world's economies may remain a pipe dream if current higher educational institutions do not adequately embrace technology. Furthermore, ignoring technology in higher education is likely to leave Ghanaian students technologically behind compared to students in other countries. Furthermore, without technology, institutional incumbents may find it difficult to manage, lead, and deliver higher education to students.

The study contributes to the literature on the leadership role of management governance in the adoption and uses of LMS, as well as in addition to global literature on LMS adoption and use by lecturers. Some of the findings of this study are consistent with other findings in the literature, and such similarities in findings were captured and reported in this study**.**

Finally, the significance and relevance of this study will never be in doubt, as evidenced by the fact that it is the researcher's original work and makes a significant contribution to knowledge and understanding of the subject and field of Education Management.

5.6 RECOMMENDATIONS

5.6.1 Recommendations for Policy and Practice

These following initiatives are recommendations to foster a positive attitude among stakeholders in order to promote LMS acceptance and adoption in universities:

1. Leadership and management of universities should establish an innovation fund to provide the financial support and incentives to faculty and departments to initiate blended learning course transformation.
2. Information Communication Technology and eLearning infrastructural development, support systems and periodic skills training, e-learning workshops in LMS usage should be put in place to promote the adoption and usage of LMSs.
3. Establishment of clear institutional direction and policy framework. To meet the current demand for e-learning education, universities must take immediate steps to strengthen and enforce their ICT policies.

5.6.2 Recommendations for Policy Makers

Governments can help to promote innovation and use of LMS by:

1. Encouraging the propagation of benchmarks to drive innovation and avoid duplication of effort
2. Providing financial support for appropriate ICT infrastructure development in the universities.

3. Fostering learning object research and development, as well as other promising innovations like open educational resources and the use of virtual computer simulations, and ensuring their relevance for students and faculty.

4. Supporting a dialogue between IT providers and institutions, as well as supporting public-private partnerships, to make the service affordable to the universities.

5. Establisment of an innovation fund to provide financial support for the adoption of LMS

5.7 SUGGESTIONS FOR FUTURE RESEARCH

1. The scope of the study can be expanded to include private universities. This study considered only public universities therefore, future research should consider the investigation of private and public universities.

2. Future research should concentrate on determining how instructors in higher education institutions intend to use or adopt LMS.

3. There should be an empirical research to examine the effectiveness of providing Self-Regulated Learning (SRL) interventions such as prompts, feedback, and study hints on LMS to improve the utilisation of LMS features.

4. More study should be carried on the challenges or barriers to LMS implementation and how to overcome them.

LIST OF REFERENCE

Adedokun, J. A. (2003) Basics of research methodology, New Hope Publisher: Sagamu

Ågerfalk, P. J. (2013). Embracing diversity through mixed methods research. European Journal of Information Systems, 22(3), 251–256. doi:10.1057/ejis.2013.6.

Ajzen, I., & Fishbein, M. (1970). The prediction of behaviour from attitudinal and normative variables. Journal of experimental social Psychology, 6(4), 466-487.

Aljarrah, A.A.; Ababneh, M.A.-K.; Cavus, N.(2020) The role of massive open online courses during the COVID-19 era: Challenges and perspective. New Trends Issues Proc. Humanit. Soc. Sci. 2020, 7, 142–152. [CrossRef]

Alkhawaja, A. (2017). Leadership Style and Employee Turnover A Mythical Relationship or Reality?

Allix M. N. (2000). "Transformational Leadership, Democratic or Despotic?", Educational Management & Administration, 28(1), pp.7- 20.

Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and fac[1]tors infuencing the E-learning system usage during COVID-19 pandemic. Education and Informa[1]tion Technologies, 25(6), 5261–5280. https://doi.org/10.1007/s10639-020-10219-y

Altbach (2011). The Past, Present, and Future of the Research University. In P. G. Altbach, & J. Salmi, (Eds.), The Road to Academic Excellence (pp. 11-32). Washington DC: The World Bank.

Altbach, P. G. (2011). The past, present, and future of the research university. Economic and Political Weekly, 65-73.

APPA (2018) The Landscape, Framework, and Strategies for Managing & Mitigating Risk. International Standard Book Number: 978-0-913359 204.http://www.appa.org/research/char/tls.cfm.

Araka, E., Maina, E., Gitonga, R. & Oboko, R. (2020). Research trends in measurement and intervention tools for self-regulated learning for e-learning environments—systematic review (2008–2018). Research and Practice in Technology Enhanced Learning, vol.15, no. 1, p. 6. https://telrp.springeropen.com/articles/10.1186/s41039-020-00129-5.

Asamoah MK (2017a) Factors Influencing Lecturers' Adoption and Use of Open Source Learning

Asare, O. M. (2012). An empirical investigation between leadership style and organisational performance in Ghana. Unpublished doctoral thesis submitted to the academic Department, School of Business and Economics, Atlantic International University, Honolulu, Hawaii. authentic inquiry. Educational Administration Quarterly, 47, 217-257.

Avolio, B. J. (2010). Full range leadership development. Sage Publications.

Avolio, B. J., Waldman, D. A., & Yammarino, F. J. (1991). Leading in the 1990s: The four I′s of transformational leadership. Journal of European industrial training.

Barber, M., Donnelly, K., Rizvi, S., & Summers, L. (2013). An avalanche is coming. Higher Education and the revolution ahead, 73.

Bass, B. M. & Avolio, B. J. (2000). MLQ Multifactor Leadership Questionnaire, Redwood City: Mind Garden.

Bass, B. M. (1997). Does the transactional–transformational leadership paradigm transcend organisational and national boundaries? American psychologist, 52(2), 130.

Bass, B. M. (2000). The future of leadership in learning organisations. Journal of leadership studies, 7(3), 18-40.

Bass, B. M., & Avolio, B. J. (1993). Transformational leadership and organisational culture. Public administration quarterly, 112-121

Bass, B. M., Avolio, B. J., Jung, D. I., & Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. Journal of applied psychology, 88(2), 207.

Bejinaru, R., & Baesu, C. (2013). Approaches to organisational change within modern companies. The USV Annals of Economics and Public Administration, 13(1 (17)), 127-134.

Bel, R. (2010). Leadership and innovation: Learning from the best Global Business and Organizational Excellence, 29 (2) (2010), pp. 47-60, 10.1002/joe.20308

Bel, R. (2010). Leadership and innovation: Learning from the best. Global Business and organisational excellence, 29(2), 47-60.

Bennis, W., & Nanus, B. (1985). Leaders The strategies for taking charge. New York: Harper & Row. doi:10.1002/hrm.3930240409

Bervell, B. & Arkorful, V. (2020). LMS-Enabled blended learning utilization in distance tertiary education: establishing the relationships among facilitating conditions, voluntariness of use and use behavior. International Journal of Educational Technology in Higher Education (2020) 17:6 https://doi.org/10.1186/s41239-020-0183-9

Bhattacharjee, J. (2015). A constructivist approach to learning: An effective approach of teaching-learning. International Research Journal of Interdisciplinary and Multidisciplinary Studies (IRJIMS): I (VI): 65-74.

Brady, A. K., & Pradhan, D. (2020). Learning without borders: asynchronous and distance learning in the age of COVID-19 and beyond. ATS scholar, 1(3), 233-242.

Brannelly Li, G., Shang, Liu, H., & Xi, Y. (2014). Differentiated transformational Leadership and Knowledge Sharing: A cross-Level investigation. European Management Journal, 32(4), 554-563.http://doi.org/10.1016/j.emj.2020.04.004

Brannelly, L., Lewis, L., Ndaruhutse, S., (2011b). Higher Education and the Formation of Developmental Elites.

Brannelly, L., Lewis, L., Ndaruhutse, S., (2011b). Higher Education and the Formation of Developmental Elites.

Bratianu, C. & S. Stanciu. (2010). 'An Overview of Present Research Related to Entrepreneurial University.' Management & Marketing 5(2): 117–34.

Brennan, John, Broek, Simon, Durazzi, Niccolo, Kamphuis, Bregtje, Ranga, Marina and Ryan,

Bryman A, Bell E. 2011. Business research methods, 2nd ed. Oxford: Oxford University Press

Bryman, A. (2012). Social Research Methods (4th ed.) New York: Oxford University Press.

Burns, J. M., (1978) Leadership. Harper and Row, New York

Campbell, C. M., and K. O'Meara. 2014. "Faculty Agency: Departmental Contexts that Matter in Faculty Careers." Research in Higher Education 55 (1): 49–74.

Caruth, G. D. (2013). Demystifying mixed methods research design: A review of the literature.

Chandra, Y., & Shang, L. (2017). An RQDA-based constructivist methodology for qualitative research. Qualitative Market Research, 20, 90-112. doi:10.1108/QMR-02-2016-0014

Chaubey, A., Bhattacharya, B., & Mandal, S. K. D. (2018). Attributes of good teaching in engineering education in the Indian subcontinent. Sādhanā, 43(11), 1-12.

Christensen, C. & H. Eyring. (2011). The Innovative University: Changing the DNA of

Christensen, C. M., & Eyring, H. J. (2011). How disruptive innovation is remaking the university. Harvard Business School Newsletter, 25.

Claar, C., Dias, L.,& Shields, R. (2014). Student acceptance of learning management systems: a study on demographics. Issues in Information Systems, 15 (1): 409- 417.

Cohen, L., Manion, L. & Morrison, K. (2008). Research methods in education. (6th ed.). London: Routledge.

Costa, P.T. & McCrae, R.R. (1992) NEO PI-R Professional Manual. Psychological Assessment Resources, Odessa, FL, USA.

Creswell J.W, Plano Clark V. L (2011). Designing and conducting mixed methods research. 2. Los Angeles

Creswell, J. W. (2015)Mixed methods research; Merging Theory with Practice. Guildford Press.

Creswell, J.W. & Plano Clark, V.L. (2013). Designing and conducting mixed research. Thousand Oaks: SAGE.

Creswell, J.W. & Plano Clark, V.L. (2013). Designing and conducting mixed research. Thousand Oaks: SAGE.

Creswell, J.W. (2009). Research design: Quantitative, qualitative and mixed research approaches. (3rd ed.). Los Angeles: SAGE.

Creswell, J.W. (2012). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. (4th ed.). Upper Saddle River: Pearson Education.

Creswell, J.W. (2014). Research design: qualitative, quantitative, and mixed methods approach. (4th ed.) Los Angeles: SAGE. 313

Crue-TIC (2018). TIC 360°. Transformación Digital en la Universidad. Grupo de Trabajo de Directores TI de Crue-TIC. Crue Universidades Españolas

Cumming, B. (2012). Revisiting philosophical and theoretical debates in contemporary educational research and major epistemological and ontological underpinnings. [Online]. Available at: http://files.eric.ed.gov/fulltext/ED537463.pdf [Accessed 23 November 2020].

Cunningham, L. L. (1985). Leaders and leadership: 1985 and beyond. The Phi Delta Kappan, 67(1), 17-20.

Davis, F.D., (1986) "A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results", doctoral dissertation, MIT Sloan School of Management, Cambridge.

Davis, F.D., Bagozzi, R. Warshaw, P.R. (1989) "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models," Management Science, 35, 8, 982-1003

Dei. D. G. J. (2018) "The deployment and adoption of e-learning systems in Ghanaian universities." KIU Journal of Education, no. 13(1), pp. 1-12.

Denti, L., &Hemlin, S. (2012) Leadership and Innovation in Organizations: A systematic review of factors that mediate or moderate the relationship. International Journal of Innovation Management, 16, 1-20.

Denzin, N.K. (2010). Moments, mixed methods, and paradigm dialogues. Qualitative Inquiry, 16(6): 419-427.

Dias, S.B.; Hadjileontiadou, S.J.; Diniz, J.A.; Hadjileontiadis, L.J. Computer-based concept mapping combined with learning management system use: An explorative study under the self-and collaborative-mode. Comput. Educ. 2017, 107, 127–146.

Dillman D. A., Smyth J. D., Christian L. M.(2014) Internet, phone, mail, and mixed-mode surveys: The tailored design method. Hoboken, NJ: John Wiley & Sons, Inc;. [Google Scholar]

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method (4th ed.). New Jersey: John Wiley & Sons.

Dobson, P., Myles, J., & Jackson, P. (2007). Making the case for critical realism: Examining the implementation of automated performance management systems. Information Resources Management Journal, 20(2), 140–152.

Domínguez-Escrig, E., Mallén, F., Lapiedra, R., and Chiva, R. (2018b), "The influence of leaders' stewardship behavior on innovation success: the mediating effect of radical innovation", Journal of Business Ethics, pp.1-14.

Doolittle, G., Stanwood, H. M., & Simmerman, H. (2006). Creating professional learning

Dunne, T.C., Aaaron, J.R., McDowell, W.C., Urban, D.J. and Geho, P.R. (2016), "The impact of leadership on small business innovativeness", Journal of Business Research, Vol. 69 No. 11, pp. 4876-4881.

Dvir, T., Eden, D., Avolio, B. J., & Shamir, B. (2002). Impact of transformational leadership on follower development and performance: A field experiment. Academy of management journal, 45(4), 735-744

Easterby-Smith, M, Thorpe, R, Jackson, PR (2015) Management & Business Research (5th edn). London: Sage.

Fiedler, F. E. (1967). A Theory of Leadership Effectiveness. New York: McGraw-Hill.

Firat, M. (2016). Determining the effects of LMS learning behaviours on academic achievement in a learning analytic perspective. Journal of Information Technology Education: Research, 15(2016), 75-87.

Foregrounding fieldwork in leadership preparation: The transformative capacity of Forskningen

Frank, M. S. (1993). The essence of leadership. Public Personnel Management, 22(3), 381-389.

Frey, C. B., & Osborne, M. (2013). The future of employment.

Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation?. Rep., NBER Working Paper No. 118315, National Bureau of Economic Research

Funder, D.C. (2001) Personality. Annual Review of Psychology, 52, 197–221.

Gardner, J. W. (1990). Leadership and the future. The Futurist, 24(3), 8

Gasper, D. & Mabic, M. (2015). Creativity in Higher Education. Universal Journal of Educational Research, 3(9), 598-605. http://doi.org/Article

Ghana MOE. (2015). Education Sector Performance Report.

Ghazal, S.; Al-Samarraie, H.; Aldowah, H. (2018) "I am still learning": Modeling LMS critical success factors for promoting students' experience and satisfaction in a blended learning environment. IEEE Access 2020, 6, 77179–77201.

Goddard J. et al. (eds) (2017), The Civic University: The Policy and Leadership Challenges, Elgar, London

Godin, B. (2014). The vocabulary of innovation: A lexicon. Project on the intellectual history of innovation, 20, Montreal: INRS. Paper presented at the 2nd CASTI workshop, Agder, Norway. Retrieved from http://www.csiic.ca/PDF/LexiconPaperNo20.pdf Google Scholar

Gottipati, S., & Shankararaman, V. (2016, April). competencies: Competency tracking mobile application for IS students. In 2016 IEEE Global Engineering Education Conference (EDUCON) (pp. 254-260). IEEE.

Green, R. L. (2013). A response to the call for effective leadership in today's schools: Three essentials—preparation, competency, and dispositions. National Forum of Applied

Green, T. L. (2018). Enriching educational leadership through community equity literacy: A conceptual foundation. Leadership and Policy in Schools, 17(4), 487-515.

Greene, J. C. (2015) Preserving distinctions within the multimethod and mixed methods research merger. Sharlene Hesse-Biber and R. Burke Johnson. New York: Oxford University Press

Hasanefendic, S., Birkholz, J. M., Horta, H., & Van Der Sijde, P. (2017). Individuals in action: bringing about innovation in higher education. European Journal of Higher Education, 7(2), 101-119.

Hassan, H., Asad, S., & Hoshino, Y. (2016). Determinants of leadership style in big five personality dimensions. universal journal of management, 4(4), 161-179.

Hautala, T. (2005), "Personality and Transformational Leadership: Perspectives of Subordinates and Leaders", University of Wasaensis, Finland. Retrieved, 12/10/2021, from the official university website: http://www.uwasa.

Heifetz, R. A., & Heifetz, R. (1994). Leadership without easy answers (Vol. 465). Harvard University Higher Education from Inside Out. San Francisco: Jossey Bass.

Hladchenko, M., Antonowicz, D., and de Boer, H. (2017). Understanding the Changes of the Higher Education Governance in Poland and Ukraine. The University as a Critical Institution, 55-74.

http://publications.dlprog.org/Higher%20Education%20and%20Developmental%20Leadership%20-%20The%20Case%20of%20Ghana.pdf

https://tradingeconomics.com/ghana/school-enrollment-tertiary-percent-gross-wb-data.htmlret., 15/09/2020

Jacob, O.N.; Abigeal, I.; Lydia, A (2020). Impact of COVID-19 on the higher institutions development in Nigeria. Electron. Res. J. Soc. Sci. Humanit. 2, 126–135.

Jee, Y.-S. (2017). Exercise rehabilitation in the fourth industrial revolution. Journal of Exercise Rehabilitation, 13(3), 255-256. https://doi.org/10.12965/jer.1735012.506

Jepperson, R., & Meyer, J. W. (2011). Multiple levels of analysis and the limitations of methodological individualism. Sociological Theory, 29(1), 54-7

Johnson, B.R., Christensen L. B (2017). Educational research: Quantitative, qualitative, and mixed approaches. 6. Los Angeles: SAGE; 2017. [Google Scholar]

Jones, A., Jones, C., Ndaruhutse, S (2014). Higher Education and Developmental Leadership: The Case of Ghana.

Jones, S., G.Lefoe, M.Harvey & K.Ryland. 2012.'Distributed Leadership: A Collaborative Framework for Academics, Executives and Professionals in Higher Education.' Journal of Higher Education Policy and Management 34(1): 67–78.

Jones, S., Harvey, M., Lefoe, G., & Ryland, K. (2014). Synthesising theory and practice: Distributed leadership in higher education. Educational Management Administration & Leadership, 42(5), 603-619.

Knight, J. (2014). Towards African Higher Education Regionalization and Harmonization: Functional, Organisational and Political Approaches. The Development of Higher Education in Africa: Prospects and Challenges 21, 347-373. https://doi.org/http://dx.doi.org/10.1108/ S14793679 (2013)0000021015

Knoeppel, R., & Logan, J. P. (2011). Linking theory with practise: A longitudinal analysis of student portfolios in principal preparation. International Journal of Leadership in

Kothari, C.R. (2004). Research methodology: Methods and techniques. 2nd ed. New Delhi: New Age International Publishers.

Kouzes, J. and Posner, B. (1995) The Leadership Challenge: How to Get Extraordinary Things Done in Organisations, Jossey-Bass, San Francisco

Kouzes, J. M., & Posner, B. (2012). The leadership challenge: How to make extraordinary things happen. Atlanta, GA: Better World Books.

Krouska, A., Troussas, C., Virvou, M. (2017) Comparing LMS and CMS platforms supporting social e-learning in higher education, 2017 8th International Conference on Information, Intelligence, Systems & Applications (IISA), 2017, pp. 1-6

Kruse, S. D. (2020). Department Chair Leadership: Exploring the Role's Demands And Tensions. Education. Management.Administratration. Leadership. doi: 10.1177/1741143220953601. [Epub ahead of print].

Kwiek, M. (2015). The unfading power of collegiality? University governance in Poland in a European comparative and quantitative perspective. International Journal of Educational Development 43, 77-89.

Li, Bhutto, Nasiri, Shaikh, & Samo, (2017). Organizational innovation: the role of leadership and

Lin, J. S. C., & Hsieh, P. L. (2007). The influence of technology readiness on satisfaction and behavioural intentions toward self-service technologies. computers in Human Behavior, 23(3), 1597-1615.

Llorens, F. (2018). "Transformación Digital de las Universidades: fontanería al servicio de la filosofía". En Las tecnologías de información y comunicación: con rumbo a la transformación digital en la Universidad de Guadalajara. Editorial Universitaria, Universidad de Guadalajara.

Mahmood, K. (2016) Do people overestimate their information literacy skills? A systematic review of empirical evidence on the Dunning-Kruger effect. Communications in Information Literacy, 10(2), 198-213.

Mahmood, K. (2016). Do People Overestimate Their Information Literacy Skills? A Systematic Review of Empirical Evidence on the Dunning-Kruger Effect. Communications in Information Literacy, 10 (2), 199-213. https://doi.org/10.15760/comminfolit.2016.10.2.24

Maina and Nzuki Maina, M. K. &Nzuki, D .M. (2015). Adoption Determinants of E-learning Management System in Institutions of Higher Learning in Kenya: A Case of Selected Universities in Nairobi Metropolitan. International Journal of Business and Social Science, 6 (2)

Maina, M. K., & Nzuki, D. M. (2015). Adoption determinants of e-learning management system in institutions of higher learning in Kenya: A case of selected universities in Nairobi metropolitan. International Journal of Business and Social Science, 6(2).

Malcalm, E., & Tamatey, S. (2017). Examining the Effect of Leadership Style on Employee Performance: A Case of Ghana Atomic Energy Commission. International Journal of Scientific and Research Publication, 7(11).

Management System in Universities in Ghana. PhD thesis, University of Ghana.

Manyika, J., et al.. (2017, January). Harnessing Automation for A Future That Works. Report by McKinsey Global Retrieved from http://www.mckinsey.com/global-themes/digital-disruption/harnessing-automation-for-a-future-that-works

Mathew, v. (2010). Service Delivery Through Knowledge Management in Higher Education, Journal of Knowledge Management Practice, 11, 1-16

McElroy, J.C., Hendrickson, A.R., Townsend, A.M. & DeMarie, S.M. (2007) Dispositional factors in internet use. MIS Quarterly, 31, 809–820. Medical Education, 2, 53-55.

Mertens, D. M., Hesse-Biber, S. (2012). Triangulation and mixed methods research: Provocative positions. Journal of Mixed Methods Research, 6(2), 75-79.

Mevlana International Journal of Education, 3(2), 112–122. doi:10.13054/mije.13.35.3.2.

Middlehurst, R. (2016). 'Leadership and Innovation: Case Studies from the UK.' Paper presented at the Governance and Adaptation to Innovative Modes of Higher Education Provision Peer Learning Activity, Ecole supérieure de l'éducation nationale, de l'enseignement supérieur et de la recherche, Poitiers, France, 26 January

Modassir, A., & Singh, T. (2008). Relationship of emotional intelligence with transformational leadership and organisational citizenship.

Mohammadi, M. K., Mohibbi A. A., & Hadi Hedayati, M. (2021). Investigating the challenges and factors influencing the use of the learning management system during the

Covid-19 pandemic in Afghanistan, Educ Inf Technol (Dordr). 2021;26(5):5165-5198. doi: 10.1007/s10639-021-10517-z. Epub 2021 Apr 7.

Molina-Azorin, J. F. (2012). Mixed Methods Research in Strategic Management: Impact and Applications. Organisational Research Methods, 15(1), 33–56.

Mott, P.E (1972) The characteristics of effective organisations, Harper & Row, New York

Muleya, V. R., Fourie, L., & Schlebusch, S. (2017). Ethical challenges in assessment centres in South Africa. SA Journal of Industrial Psychology, 43(2), 1-20. doi:10.4102/sajip. v43i0.1324

Mullins, D., & van Bortel, G. (2010). Neighbourhood regeneration and place leadership: lessons from Groningen and Birmingham. Policy Studies, 31(4), 413-428

Mullins, J. (2010). Management and Organisational Behaviour (9th ed.). Macmillan Publishers Ltd.

Nahavandi, A. (2012). Iranian mystical leadership: Lessons for contemporary leaders. In Leadership through the Classics (pp. 191-204). Springer, Berlin, Heidelberg.

Northouse, P. G. (2013) Leadership: Theory and practice, Sage Publications Inc: Thousand Oaks

OECD (2019), 2018 Database - PISA, https://www.oecd.org/pisa/data/2018database/ (accessed on 24 August 2020).

OECD (2020), The world economy on a tightrope, OECD Publishing, Paris.

organizational culture. International Journal of Public Leadership, 14(1), 33-47. https://doi.org/10.1108/ijpl-06-

Oxagile, L., (2016). History and trends of learning management system. Retrieved from contact@oxagile.com

Perez, L. G., Uline, C. L., Johnson, J. F., James-Ward, C., & Bascom, M. R. (2010). Foregrounding fieldwork in leadership preparation: The transformative capacity of authentic inquiry. Educational Administration Quarterly, 47, 217-257.

Phillipo, J., & Krongard, S. (2012). Learning Management System (LMS). The Missing Link and Great Enabler.

Pinto, R.M. (2010). Mixed methods design. In Salkind, N.J. (Ed.) Encyclopaedia of Research Design [Online]. Available at: DOI: http://dx.doi.org/10.4135/9781412961288.n245 [Accessed on 23 November 2020].

Porter, W. W., and C. R. Graham. (2016). "Institutional Drivers and Barriers to Faculty Adoption of Blended Learning in Higher Education." British Journal of Educational Technology 47 (4): 748–762.

Powell, B. A., Gilleland, D. S., & Pearson, L. C. (2012). Expenditures, efficiency, and effectiveness in U.S. undergraduate higher education: A national benchmark model. Journal of Higher Education, 83 (1), 102–127.

Ramsden, P. (2013). Leadership for a Better Student Experience: What Do Senior Executives Need to Know? Stimulus Paper. Leadership Foundation for Higher Education

Rice, A. (2012, September 11). Anatomy of a campus coup. New York Times. Retrieved from http://www.nytimes.com/2012/09/16/magazine/teresa-sullivan-uva-ouster.html?_r=0

Richey, R. C., Silber, K. H., & Ely, D. P. (2008). Reflections on the 2008 AECT Definitions of the Field. TechTrends, 52(1), 24-25.

RocaSalvatella S. (2016). Las fases de la transformation digital de loss negocios. Modelo RocaSalvatella. Entrada 12/10/2016, http://www.rocasalvatella.com/es/las-fases-de-latransformacion-digital-de-los-negocios-modelo-rocasalvatella.

Roger, E. M., (1995), Diffusion of Innovations, Fourth Edition, New York: Free Press

Rogers, E. M. (1962). Diffusion of innovations. First edition. New York. Free Press.

Rogers, E.M. (2003). Diffusion of innovations. Fifth edition. New York: Free Press.

Rost, J. C. (1991). Leadership for the twenty-first century. Greenwood Publishing Group.

Salamzadeh, A., Y. Salamzadeh & M. Daraei. (2011). 'Toward a Systematic Framework for an Entrepreneurial University: A Study in Iranian Context with an IPOO Model.' Globalm Business and Management Research 3(1): 31–7.

Saunders, M., Lewis, P., and Thornhill, A. (2016). Research methods for business students. 7th ed. Italy: Pearson Education

Schwab, K. (2015). The Fourth Industrial Revolution: What It Means and How to Respond. Retrieved from https://www.foreignaffairs.com/articles/2015-12-12/fourth-industrial-revolution.

Scotland, J. (2012). Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. English Language Teaching, 5 (9): 9–16. https://doi.org/10.5539/elt.v5n9p9.

Sekaran U, Bougie R (2010) Research method for business: a skill building approach. Wiley, Hoboken

Sekaran, U., & Bougie, R. (2010). Research Methods for Business: A Skill Building Approach (5th edition). New Jersey: John Wiley and Sons

Sharma, M. K., & Jain, S. (2013). Leadership management: Principles, models and theories. Global Journal of Management and Business Studies, 3(3), 309-318.

Shattock, M. (2013). University Governance, Leadership and Management in a Decade of Diversification and Uncertainty. Higher Education Quarterly 67(3), 217-233.

Steve (2014) Study on innovation in higher education: final report. European Commission

Stogdill, R. M. (1974). Handbook of leadership: A survey of theory and research. Free Press.

Swanger, D. (2016) Innovation in Higher Education: Can Colleges Really Change? Fulton-Montgomery Community College, NY, 58 p. URL: https://www.fmcc.edu/about/files/2016/06/Innovation-in-Higher-Education.pdf Retrieved 10.01.2021.

Szabo, M., & Flesher, K. (2002). CMI theory and practice: Historical roots of learning management systems. Paper presented at the E-Learn 2002 World Conference on E-Learning in Corporate, Government, Healthcare, & Higher Education, Montreal, Canada

Tagoe, M. A., & Abakah, E. (2014). Determining Distance Education Students' Readiness for Mobile Learning at University of Ghana Using the Theory of Planned Behavior. International Journal of Education and Development using Information and Communication Technology, 10(1), 91-106.

Tamatey, S., & Malcalm, E. (2017). Examining Leadership Style on Employee Performance in The Public Sector of Ghana. International Journal of Scientific and Research Publications, 7(11), 343-358

Tavakol M, Dennick R. (2011) post-examination analysis of objective tests. Med Teach. 2011;33:44758.10.3109/0142159X.2011.564682[PubMed][CrossRef] [Google Scholar]

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. International Journal of

Taylor, S., & Todd, P. (1995). Decomposition and crossover effects in the theory of planned behaviour: A study of consumer adoption intentions. International journal of research in marketing, 12(2), 137-155

Tellis, G. (2013). Creating a culture for unrelenting innovation. Retrieved from http://www-bcf.usc.edu/~tellis/MWorld.pdf

Tellis, G.J. (2013), Relentless Innovation: How to Build a Culture for Market Dominance, Jossey Bass, New York, NY.

Terraciano, A. & Costa, P.T. (2004) Smoking and the five-factor model of personality. Addiction, 99, 472–481.

Thatcher, J.B. & Perrewe, P.L. (2002) An empirical examination of individual traits as antecedents to computer anxiety and computer self-efficacy. MIS Quarterly, 26, 381–396.

Tierney W. G. & Lanford M. (2016) M.B. Paulsen (ed.), Higher Education: Handbook of Theory and Research, Higher Education: Handbook of Theory and Research 31, DOI 10.1007/978-3-319-26829-3_1

Tierney, W. G., & Lanford, M. (2015). An investigation of the impact of international branch campuses on organisational culture. Higher Education, 70(2), 283-298.

Tierney, W. G., & Lanford, M. (2016). Conceptualizing innovation in higher education. In Higher education: Handbook of theory and research (pp. 1-40). Springer, Cham.

Tipu, S., Ryan, J. & Fantasy, K. 2012. Transformational leadership in Pakistan: An examination of the relationship of transformational leadership to organisational culture and innovation propensity. Journal of Management and Organisation, 18(4):461-480.

United Nations, "Policy Brief: The World of Work and COVID-19", June 2020, available at https://www.un.org/sites/un2.un.org/files/ the_world_of_work_and_covid-19.pdf.

Venkatesh, V., M. G. Morris, G. B. Davis, and F. D. Davis (2003) "User Acceptance of Information Technology: Toward a Unified View" MIS Quarterly, 27(3), pp. 425-478

Vigoda-Gadot, E., & Dryzin-Amit, Y. (2006). Organisational politics, leadership and performance in modern public worksites: A theoretical framework. Handbook of organisational politics, 1, 3-15.

Vinnova, V.A. (2013:13) , Lennart Elg: "Innovationer och nyteknik, vilken roll spelar

Walker, D., & Lindner, J. (2015). Technologies in knowledge sharing.

Watson, W., & Watson, S. L. (2007). An argument for clarity: What are learning management systems, what are they not, and what should they become.

Weise, M. R., & Christensen, C. M. (2014). Higher Education: Mastery, Modularization, and the Workforce Revolution. Clayton Christensen Institute for Disruptive Innovation. 425 Broadway Street, Redwood City, CA 94063

World Economic Forum (2020) The rise of online learning during the COVID-19 pandemic | World Economic Forum (weforum.org) accessed on 23 May 2021).

Yukl, G. (2008). How leaders influence organisational effectiveness. The leadership quarterly, 19(6), 708-722.

Zook, T. D. (1993). An examination of leadership practices in large, protestant congregations (Doctoral dissertation, Indiana University of Pennsylvania)

APPENDICES

APPENDIX A: ETHICS CLEARANCE CERTIFICATE

UNISA | university of south africa

UNISA COLLEGE OF EDUCATION ETHICS REVIEW COMMITTEE

Date: 2021/11/10

Ref: **2021/11/10/10041117/10/AM**
Name: Mrs L Akyeampong
Student No.: 10041117

Dear Mrs L Akyeampong

Decision: Ethics Approval from 2021/11/10 to 2026/11/10

Researcher(s): Name: Mrs L Akyeampong
E-mail address: 10041117@mylife.unisa.ac.za
Telephone: +233 244220106

Supervisor(s): Name: Prof. SP Mokoena
E-mail address: mokoesp@unisa.ac.za
Telephone: +27 (11) 670-9329

Title of research:

Understanding Leadership Role of University Management and Governance in Promoting Innovation and the Use of Learning Management Systems in Ghana's Universities.

Qualification: PhD Education Management

Thank you for the application for research ethics clearance by the UNISA College of Education Ethics Review Committee for the above mentioned research. Ethics approval is granted for the period 2021/11/10 to 2026/11/10.

The **medium risk** application was reviewed by the Ethics Review Committee on 2021/11/10 in compliance with the UNISA Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher will ensure that the research project adheres to the relevant guidelines set out in the Unisa Covid-19 position statement on research ethics attached.
2. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
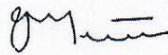
University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
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Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
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3. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the UNISA College of Education Ethics Review Committee.

4. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.

5. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing.

6. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.

7. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.

8. No field work activities may continue after the expiry date **2026/11/10**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

*The reference number **2021/11/10/10041117/10/AM** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Kind regards,

Prof AT Motlhabane
CHAIRPERSON: CEDU RERC
motlhat@unisa.ac.za

Prof PM Sebate
EXECUTIVE DEAN
Sebatpm@unisa.ac.za

Approved - decision template – updated 16 Feb 2017

APPENDIX B1

INTRODUCTORY LETTER FROM THE UNIVERSITY OF PROFESSIONAL STUDIES, ACCRA TO UNIVERSITY OF GHANA, LEGON

UPSA | **ACBSP**
UNIVERSITY OF PROFESSIONAL STUDIES, ACCRA
Scholarship with Professionalism
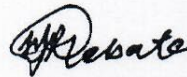ACCREDITED

P. O. Box LG 149, Accra, Ghana.
Tel: (+233) 0302 500171/500722
Website: www.upsa.edu.gh
Email: info@upsamail.edu.gh, admissions@upsamail.edu.gh

Ref. No. /AA/LAUPSA/IL/002

11th October, 2021

University of Ghana

P. O. Box LG25

Accra, Ghana

Dear Sir/Madam

Letter of Introduction for Data Collection – Mrs. Leticia Akyeampong

Mrs. Leticia Akyeampong (UNISA Student No.10041117), an Administrative Staff of University of Professional Studies, Accra is a Doctoral Student at the University of South Africa(UNISA). To fulfil the requirement for a degree of Doctor of Philosophy in Education Management, the student is currently conducting a research entitled "Understanding the Role of Leadership in Promoting the Use of Learning Management Systems in Universities in Ghana"

The aim of the research is to understand the role of leadership in developing an organizational culture that promotes innovation in universities in Ghana and to develop a theory and policy that guides practice. Furthermore, the research findings will contribute to a deep knowledge on leadership and innovation, and provide measures that university leadership can take to increase innovation performance.

The Study adopts the mixed method approach and requires that questionnaires and semi-structured interview be used as data collection instruments from your University. Participants and respondents will be Senior Management of the university, Deans, HODs Administrative Staff and Student Leaders.

Therefore, on behalf of University of Professional Studies, Accra, I kindly request that you accord Mrs. Leticia Akyeampong the necessary support for the collection of data till the completion of the stud.

Thank you

DIRECTOR, ACADEMIC AFFAIRS
UNIVERSITY OF PROFESSIONAL STUDIES
BOX LG 149, LEGON

Director, Academic Affairs
For: Registrar

APPENDIX B2

INTRODUCTORY LETTER FROM THE UNIVERSITY OF PROFESSIONAL STUDIES, ACCRA TO UNIVERSITY OF ENERGY

P. O. Box LG 149, Accra, Ghana.
Tel: (+233) 0302 500171/500722
Website: www.upsa.edu.gh
Email: info@upsamail.edu.gh, admissions@upsamail.edu.gh

Ref. No. /AA/L/UPSA/IL/001

11th October, 2021

University of Energy and Natural Resources (UNER)

Post Office Box 214, Sunyani

Ghana, West Africa

Dear Sir/ Madam,

Letter of Introduction for Data Collection – Mrs. Leticia Akyeampong

Mrs. Leticia Akyeampong (UNISA Student No. 10041117), an Administrative Staff of University of Professional Studies, Accra is a Doctoral Student at the University of South Africa(UNISA). To fulfil the requirement for a degree of Doctor of Philosophy in Education Management, the student is currently conducting a research entitled "Understanding the Role of Leadership in Promoting the Use of Learning Management Systems in Universities in Ghana"

The aim of the research is to understand the role of leadership in developing an organizational culture that promotes innovation in universities in Ghana and to development of theory and policy that guides practice. Furthermore, the research findings will contribute to a deep knowledge on leadership and innovation, and provide measures that university leadership can take to increase innovation performance.

The Study adopts the mixed method approach and requires that questionnaires and semi-structured interview be used as data collection instruments from your University. Participants and respondents will be Senior Management of the University, Deans, HODs Administrative Staff and Student Leaders.

Therefore, on behalf of University of Professional Studies, Accra, I kindly request that you accord Mrs. Leticia Akyeampong the necessary support for the collection of data till the completion of the study.

Thank you

DIRECTOR, ACADEMIC AFFAIRS
UNIVERSITY OF PROFESSIONAL STUDIES
Director, Academic Affairs LEGON
For: Registrar

APPENDIX C1

LETTER REQUESTING PERMISSION TO CONDUCT RESEARCH AT UNIVERSITY OF PROFESSIONAL STUDIES, ACCRA

To: Registrar, University of Professional Studies, Accra

Subject: **Request for Permission to Conduct Research at University of Professional Studies, Accra**

My name is Mrs. Leticia Akyeampong, an Senior Assistant Registrarat University of Professional Studies, Accra. Currently, I am a doctoral student in Education Management at the University of South Africa. I am conducting a study on "Understanding Leadership Role of Management and Governance in Promoting Innovation and the Use of Learning Management Systems in Ghana's Universities" in partial fulfilment for the Degree of Doctor of Philosophy in Education Management.   This project will be conducted under the supervision of Professor SP Mokoena (mokoesp@unisa.ac.za) in the College of Education at University of South Africa in the Department of Educational Leadership and Management and you can contact him in case you need any information on the research.

Here, I am seeking your permission to collect data from Senior managers of universities, Deans, HODs, Lecturers, Administrative staff and Students Leadership by using questionnaire and interviews which will take 45- 50 minutes. I also want to get permission to use relevant documents from the schools for research purposes only. The university was randomly and purposively selected for the study.

I assure you that the names of participants will not be mentioned anywhere in the research report and the data collected will be confidential. Participants will be asked to sign consent forms for participation which will be on voluntary basis. The participant can also decline from participation at any time.

After completing the research, I will give one bound copy of the findings of the full research report to your office. If I get an article of the research published, I will provide a copy of it to your office. If you need further information, please contact me on +233 244220106 or 10041117@mylife.unisa.ac.za.

I would appreciate if you could complete the letter of permission at the end of this letter and return it to: Mrs. Leticia Akyeampong, University of Professional Studies, Accra. P. O. Box LG 149, Accra. Ghana.

With kind regards,

Leticia Akyeampong(Mrs)
Cell: +233 2444220106
B.O.Box LG 149
Accra, Ghana
APPENDIX C2

LETTER REQUESTING PERMISSION TO CONDUCT RESEARCH AT UNIVERSITY OF ENERGY AND NATURAL RESOURCES (UENR)

To: Registrar, University of Energy and Natural Resources (UENR)

Subject: <u>Request for Permission to Conduct Research at University of Energy and Natural Resources (UENR)</u>

My name is Mrs. Leticia Akyeampong, a Senior Assistant Registrar at University of Professional Studies, Accra. Currently, I am a doctoral student in Education Management at the University of South Africa. I am conducting a study on *"Understanding Leadership Role of Management and Governance in Promoting Innovation and the Use of Learning Management Systems in Universities in Ghana"* in partial fulfilment for the Degree of Doctor of Philosophy in Education Management. This project will be conducted under the supervision of Professor SP Mokoena (mokoesp@unisa.ac.za) in the College of Education at University of South Africa in the Department of Educational Leadership and Management and you can contact him in case you need any information on the research.

Here, I am seeking your permission to collect data from Senior managers of universities, Deans, HODs, Lecturers, Administrative staff and Students Leadership by using Questionnaire and interviews which will take 45- 50 minutes. I also want to get permission to use relevant documents from the schools for research purposes only. The university was randomly and purposively selected for the study.
I assure you that the names of participants will not be mentioned anywhere in the research report and the data collected will be confidential. Participants will be asked to sign consent forms for participation which will be on voluntary basis. The participant can also decline from participation at any time.

After completing the research, I will give one bound copy of the findings of the full research report to your office. If I get an article of the research published, I will provide a copy of it to your office. If you need further information, please contact me on +233 244220106 or 10041117@mylife.unisa.ac.za.

I would appreciate if you could complete the letter of permission at the end of this letter and return it to: Mrs. Leticia Akyeampong, University of Professional Studies, Accra. P. O. Box LG 149, Accra. Ghana.
With kind regards,

Leticia Akyeampong (Mrs)
Cell: +233 2444220106
B.O.Box LG 149, Accra, Ghana
APPENDIX C3

LETTER REQUESTING PERMISSION TO CONDUCT RESEARCH AT UNIVERSITY OF GHANA, LEGON

To: Registrar, University of Ghana, Legon

Subject: <u>Request for Permission to Conduct Research at University of Ghana, Legon</u>

My name is Mrs. Leticia Akyeampong, a Senior Assistant Registrar at University of Professional Studies, Accra. Currently, I am a doctoral student in Education Management at the University of South Africa. I am conducting a study on "*Understanding Leadership Role of Management and Governance in Promoting Innovation and the Use of Learning Management Systems in Ghana's Universities*" in partial fulfilment for the Degree of Doctor of Philosophy in Education Management. This project will be conducted under the supervision of Professor SP Mokoena (<u>mokoesp@unisa.ac.za</u>) in the College of Education at University of South Africa in the Department of Educational Leadership and Management and you can contact him in case you need any information on the research.

Here, I am seeking your permission to collect data from Senior managers of universities, Deans, HODs, Lecturers, Administrative staff and Students Leadership by using Questionnaire and interviews which will take 45- 50 minutes. I also want to get permission to use relevant documents from the schools for research purposes only. The university was randomly and purposively selected for the study.
I assure you that the names of participants will not be mentioned anywhere in the research report and the data collected will be confidential. Participants will be asked to sign consent forms for participation which will be on voluntary basis. The participant can also decline from participation at any time.

After completing the research, I will give one bound copy of the findings of the full research report to your office. If I get an article of the research published, I will provide a copy of it to your office. If you need further information, please contact me on +233 244220106 or <u>10041117@mylife.unisa.ac.za</u>.

I would appreciate if you could complete the letter of permission at the end of this letter and return it to: Mrs. Leticia Akyeampong, University of Professional Studies, Accra. P. O. Box LG 149, Accra. Ghana.
With kind regards,

Leticia Akyeampong(Mrs)
Cell: +233 2444220106
B.O.Box LG 149
Accra, Ghana

APPENDIX D (1)

LETTER TO SENIOR MANAGERS OF UNIVERSITIES, REQUESTING FOR PARTICIPATION IN THE RESEARCH

Dear Sir/Madam,

I am Mrs Leticia Akyeampong. I am a doctoral student at University of South Africa. I am conducting a study on "*Understanding Leadership Role of Management and Governance in Promoting innovation and the Use of Learning Management Systems Ghana's Universities*`" in partial fulfilment for the Degree of Doctor of Philosophy in Education Management. The main aim of the study is to investigate the role of leadership in promoting the use of learning management systems (LMS) in universities in Ghana.

Specifically, the study seeks to:
- Identify the kind of innovations currently taking place in Ghana's public and private universities
- To investigate the role of leadership and governance on innovation in Universities in Ghana.
- To identify leadership competencies needed to drive innovation in Universities in Ghana
- To develop strategies that university leaders can adopt for effective innovation management

Your critical reflection on the role of leadership in promoting the use of learning management systems (LMS) in universities is vital to the achievement of the above objectives. This is because you have first-hand experience regarding the use of LMS for teaching and learning activities as well as how its use is being promoted. Without obtaining in-depth information from you, it will be impossible to finalize and complete the study.

Your participation in the study will be on voluntary basis and you can withdraw at any point in time from participation without penalty. It takes you about 45-50 minutes to complete the questionnaire. The information you provide will be kept confidential and it will be used only

for the purpose of completing this study. I assure you that no harm will be caused to you because of your participation. Your name will not be mentioned anywhere in the study. Completion of the questionnaire will take place during convenient time for you. In case you want to know the outcome of the study, one copy of the final report will be given to your university.

If you are willing to participate in this study, please sign and return the consent form and and return it to: Mrs. Leticia Akyeampong, University of Professional Studies, Accra. P. O. Box LG 149, Accra. Ghana or via mail 10041117@mylife.unisa.ac.za. If you need further information, please contact me on +233 244220106 or 10041117@mylife.unisa.ac.za

With kind regards,

Leticia Akyeampong (Mrs)
Cell: +233 2444220106
B.O.Box LG 149
Accra, Ghana

Consent by the Participant:

I, _____, have read and understood the written details provided for me about the research; and agree to participate in the research project. I am willing to participate in the study by filling the questionnaire. I have taken note of that my participation is voluntary and I may not continue participating at any time. I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential I also understand that my name will not be mentioned in the research and the data will be used only for the purpose of the research indicated in the letter.

I agree to participate in the interview

I have received a signed copy of the informed consent agreement.

Participant Name & Surname :

_____

_____

_____

Participant Signature   Date

_____

Researcher's Name & Surname

Mrs. Leticia Akyeampong

_____ Researcher's signature

APPENDIX D (2)
LETTER TO DEANS, REQUESTING PARTICIPATION IN THE RESEARCH

Dear Sir/Madam,

I am Mrs Leticia Akyeampong. I am a doctoral student at University of South Africa. I am conducting a study on "Understanding Leadership Role of Management and Governance in Promoting Innovation and the Use of Learning Management Systems in Ghana's Universities `'" in partial fulfilment for the Degree of Doctor of Philosophy in Education Management. The main aim of the study is to investigate the role of leadership in promoting the use of learning management systems (LMS) in universities in Ghana.

Specifically, the study seeks to:

- Identify the kind of innovations currently taking place in Ghana's public and private universities
- To investigate the role of leadership and governance on innovation in Universities in Ghana.
- To identify leadership competencies needed to drive innovation in Universities in Ghana
- To develop strategies that university leaders can adopt for effective innovation management

Your critical reflection on the role of leadership in promoting the use of learning management systems (LMS) in universities vital to the achievement of the above objectives. This is because you have first-hand experience regarding the use of LMS for teaching and learning activities as well as how its use is being promoted. Without obtaining in-depth information from you, it will be impossible to finalize and complete the study.

Your participation in the study will be on voluntary basis and you can withdraw at any point in time from participation without penalty. It takes you about 45-50 minutes to complete the questionnaire. The information you provide will be kept confidential and it will be used only for the purpose of completing this study. I assure you that no harm will be caused to you because of your participation. Your name will not be mentioned anywhere in the study.

Completion of the questionnaire will take place during convenient time for you. In case you want to know the outcome of the study, one copy of the final report will be given to your university.

If you are willing to participate in this study, please sign and return the consent form and and return it to: Mrs. Leticia Akyeampong, University of Professional Studies, Accra. P. O. Box LG 149, Accra. Ghana or via mail 10041117@mylife.unisa.ac.za. If you need further information, please contact me on +233 244220106 or 10041117@mylife.unisa.ac.za

With kind regards,

Leticia Akyeampong (Mrs)
Cell: +233 2444220106
B.O.Box LG 149
Accra, Ghana

Consent by the participant:

I, _____, have read and understood the written details provided for me about the research; and agree to participate in the research project. I am willing to participate in the study by filling the questionnaire. I have taken note of that my participation is voluntary and I may not continue participating at any time. I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential I also understand that my name will not be mentioned in the research and the data will be used only for the purpose of the research indicated in the letter.

I agree to participate in the interview

I have received a signed copy of the informed consent agreement.

Participant Name & Surname :

_____

_____

_____
Participant Signature

_____
Date

Researcher's Name & Surname

Mrs. Leticia Akyeampong

_____ Researcher's signature

APPENDIX D (3)

LETTER TO HODS, REQUESTING PARTICIPATION IN THE RESEARCH

Dear Sir/Madam,

I am Mrs Leticia Akyeampong. I am a doctoral student at University of South Africa. I am conducting a study on "Understanding Leadership Role of Management and Governance in Promoting Innovation and the Use of Learning Management Systems in Ghana's Universities `'" in partial fulfilment for the Degree of Doctor of Philosophy in Education Management. The main aim of the study is to investigate the role of leadership in promoting the use of learning management systems (LMS) in universities in Ghana.

Specifically, the study seeks to:

- Identify the kind of innovations currently taking place in Ghana's public and private universities
- To investigate the role of leadership and governance on innovation in Universities in Ghana.
- To identify leadership competencies needed to drive innovation in Universities in Ghana
- To develop strategies that university leaders can adopt for effective innovation management

Your critical reflection on the role of leadership in promoting the use of learning management systems (LMS) in universities vital to the achievement of the above objectives. This is because you have first-hand experience regarding the use of LMS for teaching and learning activities as well as how its use is being promoted. Without obtaining in-depth information from you, it will be impossible to finalize and complete the study.

Your participation in the study will be on voluntary basis and you can withdraw at any point in time from participation without penalty. It takes you about 45-50 minutes to complete the questionnaire. The information you provide will be kept confidential and it will be used only for the purpose of completing this study. I assure you that no harm will be caused to you because of your participation. Your name will not be mentioned anywhere in the study.

Completion of the questionnaire will take place during convenient time for you. In case you want to know the outcome of the study, one copy of the final report will be given to your university.

If you are willing to participate in this study, please sign and return the consent form and and return it to: Mrs. Leticia Akyeampong, University of Professional Studies, Accra. P. O. Box LG 149, Accra. Ghana or via mail 10041117@mylife.unisa.ac.za. If you need further information, please contact me on +233 244220106 or 10041117@mylife.unisa.ac.za

With kind regards,

Leticia Akyeampong (Mrs)
Cell: +233 2444220106
B.O.Box L

Consent by the participant:

I, _____, have read and understood the written details provided for me about the research; and agree to participate in the research project. I am willing to participate in the study by filling the questionnaire. I have taken note of that my participation is voluntary and I may not continue participating at any time. I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential I also understand that my name will not be mentioned in the research and the data will be used only for the purpose of the research indicated in the letter.

I agree to participate in the interview

I have received a signed copy of the informed consent agreement.

Participant Name & Surname :

_____

_____

_____   _____
Participant Signature   Date

Researcher's Name & Surname

Mrs. Leticia Akyeampong

_____ Researcher's signature

APPENDIX D (4)

LETTER TO LECTURERS, REQUESTING FOR PARTICIPATION IN THE RESEARCH

Dear Sir/Madam,

I am Mrs Leticia Akyeampong. I am a doctoral student at University of South Africa. I am conducting a study on "Understanding Leadership Role of Management and Governance in Promoting Innovation and the Use of Learning Management Systems in Universities Ghana`" in partial fulfilment for the Degree of Doctor of Philosophy in Education Management. The main aim of the study is to investigate the role of leadership in promoting the use of learning management systems (LMS) in universities in Ghana.

Specifically, the study seeks to:

- Identify the kind of innovations currently taking place in Ghana's public and private universities
- To investigate the role of leadership and governance on innovation in Universities in Ghana.
- To identify leadership competencies needed to drive innovation in Universities in Ghana
- To develop strategies that university leaders can adopt for effective innovation management

Your critical reflection on the role of leadership in promoting the use of learning management systems (LMS) in universities vital to the achievement of the above objectives. This is because you have first-hand experience regarding the use of LMS for teaching and learning activities as well as how its use is being promoted. Without obtaining in-depth information from you, it will be impossible to finalize and complete the study.

Your participation in the study will be on voluntary basis and you can withdraw at any point in time from participation without penalty. It takes you about 45-50 minutes to complete the questionnaire. The information you provide will be kept confidential and it will be used only

for the purpose of completing this study. I assure you that no harm will be caused to you because of your participation. Your name will not be mentioned anywhere in the study. Completion of the questionnaire will take place during convenient time for you. In case you want to know the outcome of the study, one copy of the final report will be given to your university.

If you are willing to participate in this study, please sign and return the consent form and and return it to: Mrs. Leticia Akyeampong, University of Professional Studies, Accra. P. O. Box LG 149, Accra. Ghana or via mail 10041117@mylife.unisa.ac.za. If you need further information, please contact me on +233 244220106 or 10041117@mylife.unisa.ac.za

With kind regards,

Leticia Akyeampong (Mrs)
Cell: +233 2444220106
B.O.Box LG 149
Accra, Ghana

Consent by the participant:

I, _____, have read and understood the written details provided for me about the research; and agree to participate in the research project. I am willing to participate in the study by filling the questionnaire. I have taken note of that my participation is voluntary and I may not continue participating at any time. I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential I also understand that my name will not be mentioned in the research and the data will be used only for the purpose of the research indicated in the letter.

I agree to fill the questionnaire

I have received a signed copy of the informed consent agreement.

Participant Name & Surname :

_____

_____

_____   _____
Participant Signature   Date

Researcher's Name & Surname

Mrs. Leticia Akyeampong

_____ Researcher's signature

APPENDIX D (5)

LETTER TO ADMINISTRATIVE STAFF, REQUESTING FOR PARTICIPATION IN THE RESEARCH

Dear Sir/Madam,

I am Mrs Leticia Akyeampong. I am a doctoral student at University of South Africa. I am conducting a study on *"Understanding Leadership Role of Management and Governance in Promoting Innovation and the Use of Learning Management Systems in Ghana's Universities `"* in partial fulfilment for the Degree of Doctor of Philosophy in Education Management. The main aim of the study is to investigate the role of leadership in promoting the use of learning management systems (LMS) in universities in Ghana.

Specifically, the study seeks to:

- Identify the kind of innovations currently taking place in Ghana's public and private universities
- To investigate the role of leadership and governance on innovation in Universities in Ghana.
- To identify leadership competencies needed to drive innovation in Universities in Ghana
- To develop strategies that university leaders can adopt for effective innovation management

Your critical reflection on the role of leadership in promoting the use of learning management systems (LMS) in universities vital to the achievement of the above objectives. This is because you have first-hand experience regarding the use of LMS for teaching and learning activities as well as how its use is being promoted. Without obtaining in-depth information from you, it will be impossible to finalize and complete the study.

Your participation in the study will be on voluntary basis and you can withdraw at any point in time from participation without penalty. It takes you about 45-50 minutes to complete the

questionnaire. The information you provide will be kept confidential and it will be used only for the purpose of completing this study. I assure you that no harm will be caused to you because of your participation. Your name will not be mentioned anywhere in the study. Completion of the questionnaire will take place during convenient time for you. In case you want to know the outcome of the study, one copy of the final report will be given to your university.

If you are willing to participate in this study, please sign and return the consent form and and return it to: Mrs. Leticia Akyeampong, University of Professional Studies, Accra. P. O. Box LG 149, Accra. Ghana or via mail 10041117@mylife.unisa.ac.za. If you need further information, please contact me on +233 244220106 or 10041117@mylife.unisa.ac.za

With kind regards,

Leticia Akyeampong (Mrs)
Cell: +233 2444220106
B.O.Box LG 149
Accra, Ghana

Consent by the participant:

I, _____, have read and understood the written details provided for me about the research; and agree to participate in the research project. I am willing to participate in the study by filling the questionnaire. I have taken note of that my participation is voluntary and I may not continue participating at any time. I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential I also understand that my name will not be mentioned in the research and the data will be used only for the purpose of the research indicated in the letter.

I agree to participate in the interview

I have received a signed copy of the informed consent agreement.

Participant Name & Surname :

_____

_____

_____   _____
Participant Signature   Date

Researcher's Name & Surname

Mrs. Leticia Akyeampong

_____

Researcher's signature

APPENDIX D (6)

LETTER TO STUDENT LEADERSHIP, REQUESTING FOR PARTICIPATION IN THE RESEARCH

Dear Sir/Madam,

I am Mrs Leticia Akyeampong. I am a doctoral student at University of South Africa. I am conducting a study on "*Understanding Leadership Role in Promoting the Use of Learning Management Systems in Universities Ghana*`" in partial fulfilment for the Degree of Doctor of Philosophy in Education Management. The main aim of the study is to investigate the role of leadership in promoting the use of learning management systems (LMS) in universities in Ghana.

Specifically, the study seeks to:
- Identify the kind of innovations currently taking place in Ghana's public and private universities
- To investigate the role of leadership and governance on innovation in Universities in Ghana.
- To identify leadership competencies needed to drive innovation in Universities in Ghana
- To develop strategies that university leaders can adopt for effective innovation management

Your critical reflection on the role of leadership in promoting the use of learning management systems (LMS) in universities vital to the achievement of the above objectives. This is because you have first-hand experience regarding the use of LMS for teaching and learning activities as well as how its use is being promoted. Without obtaining in-depth information from you, it will be impossible to finalize and complete the study.

Your participation in the study will be on voluntary basis and you can withdraw at any point in time from participation without penalty. It takes you about 45-50 minutes to complete the questionnaire. The information you provide will be kept confidential and it will be used only for the purpose of completing this study. I assure you that no harm will be caused to you because of your participation. Your name will not be mentioned anywhere in the study. Completion of the questionnaire will take place during convenient time for you. In case you want to know the outcome of the study, one copy of the final report will be given to your university.

If you are willing to participate in this study, please sign and return the consent form and and return it to: Mrs. Leticia Akyeampong, University of Professional Studies, Accra. P. O. Box LG 149, Accra. Ghana or via mail 10041117@mylife.unisa.ac.za. If you need further information, please contact me on +233 244220106 or 10041117@mylife.unisa.ac.za

With kind regards,

Leticia Akyeampong (Mrs)
Cell: +233 2444220106
B.O.Box LG 149
Accra, Ghana

Consent by the participant:

I, _____, have read and understood the written details provided for me about the research; and agree to participate in the research project. I am willing to participate in the study by filling the questionnaire. I have taken note of that my participation is voluntary and I may not continue participating at any time. I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential I also understand that my name will not be mentioned in the research and the data will be used only for the purpose of the research indicated in the letter.

I agree to participate in the interview

I have received a signed copy of the informed consent agreement.

Participant Name & Surname :

_____

_____

_____   _____
Participant Signature   Date

Researcher's Name & Surname

Mrs. Leticia Akyeampong

_____

Researcher's signature

APPENDIX E (1)

CONFIDENTIALITY AGREEMENT REQUEST LETTER FOR SENIOR MANAGERS OF UNIVERSITIES WHO WILL PARTICIPATE IN INTERVIEW

Dear Research Participant,
Thank you very much for your willingness to participate by signing consent forms to participate in this research. You already know that any information you provide during the interview will be kept confidential and only be used for the purpose of this study. As a result, the information you provide should also be kept confidential.

Thus, I request you to show your agreement to this by signing the following confidentiality agreement statement.

With kind regards,

Leticia Akyeampong (Mrs)
Cell: +233 2444220106
B.O.Box LG 149
Accra, Ghana

Confidentiality agreement

I_____ grant consent that the information I share during the research may be used by Mrs. Leticia Akyeampong for research purposes. I am aware that the interview will be digitally recorded and grant consent for these recordings, provided that my privacy will be protected. I undertake not to divulge any information that is shared in the interview to any person outside in order to maintain confidentiality.

Participant's Name (Please print): _____

Participant Signature: _____

Researcher's Name: (Please print): ___Mrs. Leticia Akyeampong _____

Researcher's Signature: _____

Date: _____

APPENDIX E (2)

CONFIDENTIALITY AGREEMENT REQUEST LETTER FOR DEANS AND HODs WHO WILL PARTICIPATE IN INTERVIEW

Dear Research Participant,

Thank you very much for your willingness to participate by signing consent forms to participate in this research. You already know that any information you provide during the interview will be kept confidential and only be used for the purpose of this study. As a result, the information you provide should also be kept confidential.

Thus, I request you to show your agreement to this by signing the following confidentiality agreement statement.

With kind regards,

Leticia Akyeampong (Mrs)
Cell: +233 2444220106
B.O.Box LG 149
Accra, Ghana

Confidentiality agreement

I_____ grant consent that the information I share during the research may be used by Mrs. Leticia Akyeampong for research purposes. I am aware that the interview will be digitally recorded and grant consent for these recordings, provided that my privacy will be protected. I undertake not to divulge any information that is shared in the interview to any person outside in order to maintain confidentiality.

Participant's Name (Please print): _____

Participant Signature: _____

Researcher's Name: (Please print): ___Mrs. Leticia Akyeampong _____

Researcher's Signature: _____

Date: _____

APPENDIX E (3)

CONFIDENTIALITY AGREEMENT REQUEST LETTER FOR ADMINISTRATIVE STAFF WHO WILL PARTICIPATE IN INTERVIEW

Dear Research Participant,

Thank you very much for your willingness to participate by signing consent forms to participate in this research. You already know that any information you provide during the interview will be kept confidential and only be used for the purpose of this study. As a result, the information you provide should also be kept confidential.

Thus, I request you to show your agreement to this by signing the following confidentiality agreement statement.

With kind regards,

Leticia Akyeampong (Mrs)
Cell: +233 2444220106
B.O.Box LG 149
Accra, Ghana

Confidentiality agreement

I_____ grant consent that the information I share during the research may be used by Mrs. Leticia Akyeampong for research purposes. I am aware that the interview will be digitally recorded and grant consent for these recordings, provided that my privacy will be protected. I undertake not to divulge any information that is shared in the interview to any person outside in order to maintain confidentiality.

Participant's Name (Please print): _____

Participant Signature: _____

Researcher's Name: (Please print): ___Mrs. Leticia Akyeampong _____

Researcher's Signature: _____

Date: _____

APPENDIX E (4)

CONFIDENTIALITY AGREEMENT REQUEST LETTER FOR STUDENTS WHO WILL PARTICIPATE IN INTERVIEW

Dear Research Participant,

Thank you very much for your willingness to participate by signing consent forms to participate in this research. You already know that any information you provide during the interview will be kept confidential and only be used for the purpose of this study. As a result, the information you provide should also be kept confidential.

Thus, I request you to show your agreement to this by signing the following confidentiality agreement statement.

With kind regards,

Leticia Akyeampong (Mrs)
Cell: +233 2444220106
B.O.Box LG 149
Accra, Ghana

Confidentiality agreement

I_____ grant consent that the information I share during the research may be used by Mrs. Leticia Akyeampong for research purposes. I am aware that the interview will be digitally recorded and grant consent for these recordings, provided that my privacy will be protected. I undertake not to divulge any information that is shared in the interview to any person outside in order to maintain confidentiality.
Participant's Name (Please print): _____
Participant Signature: _____
Researcher's Name: (Please print): ___Mrs. Leticia Akyeampong _____
Researcher's Signature: _____
Date: _____

APPENDIX F

QUESTIONNAIRE FOR LECTURERS

University of South Africa (UNISA) College of Education, Department of Education Management and Leadership

Dear Respondent,

A questionnaire to be filled out by Lecturers.
I am conducting a study on "Understanding Leadership Role of Management and Governance in Promoting Innovation and the Use of Learning Management Systems in Ghana's Universities" in partial fulfilment for the Degree of Doctor of Philosophy in Education Management.

The main aim of the study is to investigate the role of leadership in promoting the use of learning management systems (LMS) in universities in Ghana and to propose possible recommendations.

The findings of the study will benefit the educational sector by proposing reform options that promote the use of LMS to improve university leadership and management, teaching and learning methods, staff development and curriculum development in the universities.

We rely on your expertise to describe to us your work and opinion as accurately as possible. As such, I would be grateful if you will spend 45-50 minutes to answer the questions in this survey. All information that is collected in this study will be treated confidentially. You are guaranteed that neither you, the university, nor any personnel will be identified the report on the results of the study. Thus, the success of this study depends on your willingness to give genuine and timely information. Therefore, you are kindly requested to respond to the questions as per the instruction indicated under each section.

About the questions

- This questionnaire should take approximately 45 to 50 minutes to complete.
- Guidelines for answering the questions are highlighted bold.
- Most questions can be answered by marking the most appropriate answer.
- Please do not write your name. No attempt will be made to identify your response
- When in doubt about any aspect of the questionnaire, or if you require further information about the questionnaire or the study, you can reach directly on please contact me on +233 244220106 or 10041117@mylife.unisa.ac.za or my supervisor on +278-2712429311 (Prof SP Mokoena) Department of Educational Leadership and Management, College of Education, UNISA, e-mail: mokoesp@unisa.ac.za

- Please return the completed questionnaire to the designated person/ coordinators

- I have read the information provided in this informed consent form. Please tick if you agree or disagree.

Agree = [   ]   Disagree = [   ]   Signature (respondent) _____

Thank you in advance.

Leticia Akyeampong

SECTION A
Instruction-2: the following items/questions are related to the promotion and use of Learning Management Systems in universities in Ghana; descriptive statements are listed below. Please reply to items under the content by selecting the option that shows the degree to which the descriptive statements correspond. Numerically, choose the degree to which the issue better represents your preferences where strongly agree = 5, Agree = 4, partially agree = 3, Disagree = 2, and strongly disagree = 1

1. Which of the following LMS does the University use for teaching and learning? *(You can tick more than one)*

   Blackboard
   Sakai
   KEWL
   Moodle
   Jusur
   Desire 2 Learn

   Other, please specify ……………………….

2. Which of the following LMS do you prefer using for teaching and learning?

   Blackboard
   Sakai
   KEWL
   Moodle
   Jusur
   Desire 2 Learn

   Other, please specify ……………………….

Kindly indicate "x" in the most appropriate box. Choose from a range of choices from strongly disagree to strongly agree
Key: 1 = Strongly Disagree   **2 = Disagree**   **3**   **=**
Neutral   **4 = Agree** **5** **=** **Strongly**
Agree

	USE OF LMS (ALGHAMDI & BAYAGA, 2016)	**1**	**2**	**3**	**4**	**5**
UL(1)	Course administration (managing class information, tracking student activities).					
UL(2)	Teaching delivery (providing materials and resources to students)					
UL(3)	Student testing (assessing and evaluating students).					
UL(4)	Class communication (communicating and collaborating with students).					
	COSTA & MCCRAE (1992) NEO PERSONALITY INVENTORY ITEMS					
Q/N	**Neuroticism**	**1**	**2**	**3**	**4**	**5**
N(1)	Using LMS systems to share information makes me feel anxious					
N(2)	I feel frustrated using LMS for learning					
N(3)	I feel depressed using the LMS to conduct online-lectures					
N(4)	I feel uneasy using the LMS to request for online submission of student assignment					
N(5)	I feel nervous using the LMS to train academic and non-academic staff					
N(6)	I feel vulnerable using the LMS to update my personal profile					
	Extraversion					
E(1)	Using the LMS to interact staff and students is comfortable					
E(2)	LMS enables me to communicate and transfer information easily with colleagues					
E(3)	I feel confident using the LMS to conduct online exams and assignments					
E(4)	Using the LMS helps me to complete my course syllabus on-time					
E(5)	Using the LMS to conduct student learning forums is effective and efficient					
E(6)	I feel excited using LMS to collaborate with colleagues to conduct course projects for students					
	Openness					
O(1)	Using LMS improves my creativity regarding how to teach my semester courses online					

O(2)	I enjoy using the LMS because the interface design is very artistic and interactive					
O(3)	I am able to receive student feedback easily using the LMS					
	Conscientiousness					
C(1)	I am able to print out student grades and performance graphs on-time using the LMS					
C(2)	I am able to monitor student participation for each course using the LMS					
C(3)	I am able to engage the LMS system administrator remotely when I experience system challenges					
	PERSONAL INNOVATIVENESS (THATCHER & PERREWE, 2002)					
	Personal Innovativeness	1	2	3	4	5
PA1	I always look for ways to use and explore the features of the LMS					
PA2	Among my colleagues, I am usually the first to explore new ways of using the LMS more efficiently					
PA3	I like to experiment with the LMS by requesting for the inclusion of additional features					

Section B

<u>**Demographic information**</u>
Section B – Requires your personal information regarding your school, age, gender and educational background
Kindly indicate select the appropriate option

1. **Gender:** Male [ ] Female [ ]

2. **Age:** 18 – 25 [ ] 26 – 30 [ ] 31 – 35 [ ] 36 – 40 [ ] 41 – 45 [ ]
   46 – 50 [ ] 51 – 55 [ ] 55 – 60 [ ]

3. **Qualification:** Undergraduate [ ] Postgraduate [ ] Professional programme [ ]

4. **Position:** Lecturer [ ] Senior lecturer [ ] HOD [ ] Vice Dean[ ]
   Dean [ ]

APPENDIX G

INTERVIEW GUIDE FOR TOP MANAGEMENT OF UNIVERSITIES

The following is a list of interview questions designed to investigate how Management of universities promote innovation and use of LMS in universities in Ghana:

1. What innovative measures have you adopted to ensure continuous teaching and learning after the COVID-19 pandemic?
2. What factors influence the adoption of innovation and the use of LMS in the university for teaching and learning?
3. Do members of the university willingly use LMS?
4. How do you promote or encourage members of the university community to use LMS?
5. Do you encounter challenges in promoting the use of LMS in the university?
6. What challenges do you encounter? (if any)
7. How do you resolve challenges/complaint from members of the university community regarding the use of LMS?
8. What are the main barriers that you face in promoting innovation?
9. How has the use of LMS affected teaching and learning?
10. How does the LMS help you accomplish your overall objective as a university?
11. How would you describe the university's performance and productivity since the introduction of LMS?

APPENDIX H

INTERVIEW GUIDE FOR DEANS AND HODS

The following is a list of interview questions designed to investigate how HODs promote the use of LMS in Universities in Ghana.

1. How is effective and efficient use of LMS promoted by Deans and HODS in the university?
2. How do you manage the academic calendar/curriculum at your faculty/department using the LMS?
3. What are challenges you encounter in promoting the use of LMS at your faculty or department?
4. How do you think these challenges can best be resolved?
5. Do you think the use of the LMS has improved the overall performance both students and staff at the university?
6. Why do you think the use of the LMS has affected (improved or not improved) the overall performance of both students and staff at the university?
7. How do you manage activities on the LMS to ensure effectiveness and efficiency of the system?
8. In what ways can this be improved?
9. What are the possible intervention strategies that can be recommended to promote innovation in universities in Ghana?

APPENDIX I

INTERVIEW GUIDE FOR ADMINISTRATIVE STAFF

The following is a list of interview questions designed to investigate how Administrative staff promote the use of LMS at universities in Ghana

1. How is the effective and efficient use of LMS promoted by administrative staff in the university?
2. How do you manage the academic curriculum at the various faculties/departments using the LMS?
3. What areas are some of the challenges you encounter in the promotion of the use of LMS as an administrator?
4. How do you think these challenges can best be resolved?
5. Do you think the use of the LMS has improved the overall performance administrative staff at the university?
6. Why do you think the use of the LMS has improved or not improved the overall performance of administrative staff at the university?
7. How do you manage activities on the LMS to ensure effectiveness and efficiency of the system?
8. In what ways can this be improved?

APPENDIX J

INTERVIEW GUIDE FOR STUDENT LEADERSHIP

The following is a list of interview questions designed to investigate how the use of LMS is promoted at universities in Ghana from the perspective of student leadership

1. How do the authorities in the university encourage students to use the LMS?
2. How would you describe the effect of the promotion of use of LMS by university authorities on the performance of students?
3. How are students supervised, assessed and taught using the LMS?
4. Do you think using the LMS can improve the effectiveness of teaching and learning?
5. What are some of the challenges students face in the use of the LMS?
6. How do you resolve these challenges?
7. In what ways do you think the use of LMS can be improved in the university?

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UNDERSTANDING LEADERSHIP ROLE OF UNIVERSITY MANAGEMENT AND GOVERNANCE IN PROMOTING INNOVATION AND USE OF LEARNING MANAGEMENT SYSTEMS IN GHANA'S UNIVERSITIES

By

LETICIA AKYEAMPONG

I declare that I have edited and proofread this research. My involvement was restricted to language usage and spelling, completeness and consistency. I did no structural re-writing of the content.

I am qualified to have done such editing, having worked as a journalist and news producer for over 9 years. I have edited a lot of scripts over the years.

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