USAGE OF E-LEARNING PLATFORMS AMONGST PRIVATE TERTIARY STUDENTS: A CASE STUDY OF BOTHO UNIVERSITY.

By

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DECLARATION

STUDENT NUMBER: **SFT1412679**

I declare that "**Usage of E-learning platforms amongst private tertiary students: A case study of Botho university**" is my own work and has not been written for me by any other person(s), and all work that is not originally mine has been dully acknowledged by means of complete references.

22-03-18

Mrs. ML Keosekile Date

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ABSTRACT

Since the integration of technology in teaching and learning, it has been observed that there is improvement in the acquisition and retention of knowledge. There is also existing body of research on adoption of e-learning platforms by students in institutions of Higher Education across the world. However, few of the existing studies has involved students in private tertiary education institutions in Botswana. Therefore, this study has set out to explore student usage of e-learning platforms, their attitudes, and the hurdles that they face in their daily usage of e-learning platforms in Botho University.

The population of the study was students of Botho university Francistown campus. Stratified random sampling was used to select participants from the target population, and data was collected from a total of 40 students (23 males and 17 females) across all faculties and years of study. The research tools used were questionnaire, focus group interviews, and observation to collect data. The study applied the Technology Acceptance Model (TAM) which is normally used to describe user acceptance of technology.

The study revealed a significant usage of e-learning platforms as the majority of learners belonged to the category of high users of e-learning platforms. This was shown by their positive ratings of the dimensions of TAM considered by this research (perceived usefulness, perceived ease of use and actual system usage). There were significant variables alongside these positive ratings and they are participant's age, gender, year of study and faculty. The variables "age" and "year of study" were statistically significant and were believed to have influenced the participant's responses/ratings, and the variables "gender" and "faculty" were not statistically significant. The study further collected learner's views about the challenges/hindrances that they face in their daily usage of e-learning platforms. The learners appreciated the learning technology and shared that the features available in e-learning platforms allow them to extend their learning outside the traditional form of learning, thus accommodating their learning needs. However, they noted challenges that normally hinder their learning such as files not opening or not downloading when needed, limited interaction and unreliable internet connection. Most of these barriers showed the technical problems that are common in e-learning. Participants shared their suggestions to address the challenges identified. The study was concluded with some recommendations for future research.

CHAPTER ONE

1. INTRODUCTION

In the past, education delivery in a classroom meant that a professor would give a lecture, while students listen and take notes. This interaction was seen as an essential learning arrangement. However, the world has experienced massive innovations in education technology, where systems that support education and training through modern ICT technology were introduced. Such systems include e-learning; Cook et al (2006) defines e-learning as an approach that facilitates and enhances learning through both computer and communication technologies. A number of e-learning tools have been made available and are being used in institutions of higher learning for purposes of teaching and learning. However, it has been argued (Anderson, 2007; Keller, 2007; Arshad & Ahmed, 2015; Seleviciene & Burksaitiene, 2015), that users often show behaviors of acceptance, resistance or rejection of e-learning tools, often leading to their little or no utilization in most cases.

Developed countries have taken initiatives to support e-learning to strengthen their financial advantage, while less developed countries have pursued to come up with e-learning plans though they differ with success levels. In some nations, e-learning is seen as an issue for institutions. Prominently, some countries have put in place some initiatives for e-learning (Oye, et al, 2011). France for example, has in the past decade been following a policy that aims at expanding the use of ICT in young children up to higher education schools, in addition to their initiative of ensuring internet and ICT access to the French society. Oye, et al (2010) continues to share that Australia on the other side is leading in creating appropriate environment for all Australians to have access to, and benefit from the "information economy". The Korean government as one of the developed nations has also taken initiatives to develop ICT and promote e-learning.

Botswana aspires to invest in education and training as preserved in the Vision 2016 pillar of Batswana becoming "…an educated, productive, innovative and informed nation…". This pillar generally shows the countries willingness to invest in the education and training of its people. It should however be noted that technology has the potential to bring new opportunities for both the learner and instructors if integrated into the curriculum (Moakofhi, et al, 2017) thus suggesting that education policies cannot be separated from technology nowadays. However, developing countries like Botswana have not fully realised the benefit of e-learning. Therefore, this study is set out to investigate how students of Botho University have accepted or not accepted e-learning platforms, with the intention to come up with potential best practice solutions that will ensure a successful learning environment for both the learner and the instructor. Many authors refer to "e-learning", "online learning", "virtual learning

environment", "web-based learning" interchangeably, and that will be the approach taken by this study.

1.1 GENERAL BACKGROUND

The study was carried out in Botho University in Francistown. Francistown is the second largest city in Botswana with approximately 100,000 inhabitants, situated in the North East of the country. Botho University is one of the private tertiary education providers in Botswana with centers in Gaborone, Francistown, Maun and Maseru (Lesotho), which started solely as a computer training institution in 1997, and has significantly grown over the years to offer other programmes in the Faculty of Business and Accounting, Faculty of Computing, Faculty of Engineering and Applied Sciences, Faculty of Health and Education, Faculty of Hospitality and Sustainable Tourism, Faculty of Graduate Studies and Research, and was awarded the University status in March 2013 (University website). At the onset of this study (July 2017), the institution had approximately 500 professional staff and a student population of around 5,000 students enrolled for full-time studies and approximately 200 students in Distance learning. The University has made attempts to improve internet access in all its campuses, and subscribed to many digital libraries across the world; but the rhetoric question here is that are students aware and fully utilizing this opportunity. With that in mind, the study saw it relevant to investigate the student's views on the usage of e-learning platforms in their regular training programmes.

1.2 PROBLEM STATEMENT

Institutions of higher learning are slowly shifting from the traditional classroom models of learning, thus expanding to the use of e-learning. However, little or no attention has been given to Botswana context, where institutions of higher learning harbor students who are in transition from traditional learning approaches to online learning. Such students are likely to see online learning as ineffective or meaningless if the students are not able to make use of such an opportunity. Selwyn (2003) shares that introducing online learning to a student who has never learned or studied online (or even had access to ICT resources) simply strengthens the patterns that already exist between individuals who were not using ICT previously and the already existing users, the gap will simply widen between the non-users and existing users. Therefore, this study aims at exploring level of student's usage, attitudes, and the hurdles that Botho University students face in their usage of e-learning platforms.

1.3 OBJECTIVES

The study will be mainly exploratory. According to Salkind (2010), an exploratory study scrutinizes the connections among variables and it is generally undertaken when little is known about a phenomenon or an event. This exploratory study aims to:

- Explore the level of student's usage of e-learning platforms.
- Find out if there is any relationship between the students' demographic variations (age, gender, programme of study, year of study, previous computer usage) and use of e-learning platforms.
- Identify hindrances faced by students in private universities in the usage of e-learning platforms.
- Suggest potential innovative solutions to hindrances faced by students of online learning.

1.4 RESEARCH QUESTIONS

The research questions for this study as influenced by the objectives will be:

- What are the patterns of usage of e-learning platforms amongst Botho university students?
- What is the relationship between the identified patterns of usage and the students' demographic variations?
- Which hindrances do Botho University students face in their usage of e-learning platforms?

1.5 RESEARCH APPROACH

In order to elucidate the research approach of this study, it is important to share the epistemological, ontological, theoretical and methodological approach that this study followed.

1.5.1 Epistemological and ontological approach

Killam (2013) shares that epistemology examines "the relationship between knowledge and the researcher during delivery"; this is to say how the researcher/knower comes to know what they know. Ontology refers to "the researcher's beliefs about the nature of reality". These definitions clearly indicate that multiple realities exist in different viewpoints of individuals looking at or going through an occurrence in reality. Furthermore, the responsibility of ontological and epistemological research lies on how individuals, for example students in a higher learning institution make sense of their experiences.

The "reality" (ontology) which will be explored in this study, together with information and sharing (epistemology) is that students of e-learning in private higher education institutions in Botswana make sense of usage of e-learning platforms in their learning based on their experience which is traditional classroom learning and how they interpret such experiences in a higher education setting. According to Greeff (2012), none of such experiences should be labeled as right or perfect, as the paradigm allows all experiences to be valid.

1.5.2 Theoretical approach

Literature review will be the basis of the theoretical approach which will help in exploring e-learning in higher education. The theoretical approach also hints on the different theories of technology acceptance, and concerning the explicit focus of this study, is the Technology Acceptance Model (TAM) which has been practically used in a variety of ICT's adoption behavior of users, thus making it applicable to this study as it will productively explain the adoption of e-learning platforms.

1.5.3 Methodological approach

The methodological approach of this study is discussed in detail in Chapter 3. Generally, the methodological approach will entail measuring instruments for usage of e-learning platforms in private tertiary institutions. The three instruments, questionnaire, group interview and observations were compiled based on thorough literature review. The research instruments proved to be appropriate for qualitative and quantitative approach largely due to the following reasons:

- A quantitative questionnaire has the benefit of being administered to a large group of participants, and because of its quantification nature, allows for generalisations to be made. These generalisations are therefore advantageous for a reliable and valid measure for student usage of e-learning platforms in Botho University. Furthermore,

questionnaires are anonymous during administration (a feature that is not present in other methods), which allows respondents to be honest when responding to the questions. Further explanations are given in chapter 3.

- Focus group interviews
  Group interviews are normally used to discover how different groups think and feel about a particular topic, thus adding a human dimension to impersonal data. The main advantage(s) of focus groups is that they give detailed information on personal and group feelings, perceptions and opinions. They also save time and money as compared to individual interviews.

- Observations
  Observation involves systematic data collection; where researchers apply all their senses to scrutinize participants in "naturally occurring situations". Observational research allows for access to people in real life situations, that is, the researcher can observe participants in action, as opposed to listening to "what they say they can do" (Wakefield, 2008; Williams & Thompson, 2004).

1.6 SIGNIFICANCE OF THE STUDY

E-learning platforms place emphasis on the use of IT in learning. As explained earlier, the teacher's role is no longer to dispense information and knowledge, but to facilitate learning. On the other side, student's role has to shift from the traditional form of being a passive and dependent learner, to an active and independent learner (Alobiedat & Saraierh, 2010). Therefore, this study is expected to provide deep insight on the usage patterns and real hurdles which Botho University students face in e-learning in order to show that although ICT has proven to have the desired practical applications in institutions of higher learning and education in general, all the relevant stakeholders should know that e-learning has its drawbacks too and they should consider closely monitoring students usage of educational technology and its tools to assist them in their transition from traditional methods of learning. In other words, developers and deliverers of online learning need to understand student perceptions and reactions to elements of e-learning in Botswana context, and also to understand how to implement the best practice solutions effectively to enhance learning. In addition, it has been observed that limited research has been done in Botswana institutions of Higher learning, few has been done in Botswana private institutions of higher learning, let alone offer potential innovative solutions to hindrances faced by e-learning students in Botswana private institutions. This study will therefore offer a consolidated report on the student patterns of usage of e-learning platforms, with the main contribution to the field of education technology being to offer potential innovative solutions to hindrances identified, with the

expectation to have improved usage of e-learning platforms and ultimately more enrolments in e-learning programmes.

1.7 DELIMITATIONS

- The study aims to investigate student usage patterns of e-learning platforms, specific to private universities, and does not include public universities due to time constraints.
- Furthermore, the study will only analyse student views on usage and acceptance of e-learning platforms in teaching and learning, but not their instructor's point of view.
- Lastly the study will focus on e-learning platforms which are available and functioning in Botho University and not other institutions of higher learning.

1.8 LIMITATIONS

- Due to time constraints, the research population is limited to Botho University only, and will therefore give a small sample size. The limitation here is that a small sample size will not permit for large scale generalities.
- The study came up with potential solutions to hindrances faced by students. However, these potential solutions were not tested empirically after its launch; therefore this matter can be explored in future research.
- Data was collected at a time when most students were busy preparing for their exams, final year students were already in the middle of their exams, so the students might have felt deprived of their study time.

CHAPTER TWO

2 LITERATURE REVIEW

2.1 Introduction

The introduction of ICT in all the spheres of education cannot be ignored. Web based education has become a vital matter in the last decade as traditional education delivery continues to be slowly eroded by online learning due to new innovations in education technology. Many Universities have implemented online education delivery, and online education systems are being endorsed as the impending education mode of instruction.

This section will look at an overview of ICT in education in order to give a general idea of how ICT has evolved in the education sector. Furthermore, the introduction of online learning can be appealing (or not appealing) to some students for many reasons (Alobiedat& Saraierh, 2010); such reasons need to be explored deeply and will also form a part of the discussion in this literature review. Lastly, one of the requirements of globalization is that higher education institutions should be furnished with technology, but as can be anticipated, there are challenges that can be faced by students of e-learning and some of those challenges will also be explored.

2.2 Definitions of e-learning

Authors and researchers have argued about a complete definition of e-learning as the already existing definitions had a tendency to mirror the interests and specializations of the writers. The definitions of e-learning in this study as gathered from review of literature generally shows four categories; "technology-driven, delivery-system-oriented, communication-oriented, and education-paradigm-oriented".

- *"Technology-driven definitions"*

Guri-Rosenblit (2006) defines e-learning as usage of diverse learning opportunities using "electronic media" which often ranges from additional functions in a traditional classroom, to a substitution of face-to-face interactions with fully online meetings.

E-learning can also mean accessing learning resources using internet connected to a device such as a computer, laptop, tablet or phone (Governors State University, 2008).

- *"Delivery-system-oriented definitions"*

  According to Lee and Lee (2006), e-learning is a "self-paced or real time" conveyance of education and training on the internet towards an end-user device.

E-learning can also be defined as “education” that is carried out using web technologies (Liao & Lu, 2008).

- *“Communication-oriented definition(s)”*

Bermejo (2005) defines e-learning as “learning” that uses “computerized communication system” which allows for interaction to take place between students and instructors.

- “Education- paradigm-oriented definitions”

These are the definitions that define e-learning as a “new way of learning”, or an upgrade of the already existing education paradigm.

Aldrich (2005) shares that e-learning combines “processes, content and infrastructure” that uses computers and the internet to improve the learning value chain, which comprises of management and delivery.

Significantly, these definitions generally show that they are influenced by the nature of concern, and specialization of the researcher/study. The sections that follow will discuss e-learning as it has evolved from the definitions.

2.3 ICT in education: An overview

In a traditional learning set up, a teacher’s responsibility is to prepare for, and teach classes, in addition to developing teaching aids and preparing assessments tests for students. However, in e-learning, a student plays a dominant role as they “manage their own learning process” through software known as e-learning platforms or virtual learning environments (VLE) (Fuentes et al, 2017).

E-learning surfaced at the same time as the development of “electronic equipment” and use of information and communication technologies (ICT). Researchers (Keller & Cernerud, 2002; Oye et al, 2011; Arshad & Ahmed, 2015) have observed that e-learning has the potential to reach out to a larger audience than before as the support of ICT systems in e-learning have removed any communication barriers as evidently proved by the introduction of digital platforms such as digital libraries; thus allowing transfer of knowledge and information anywhere and anytime. This generally shows that studying online has the advantage of not demanding attendance of scheduled lectures, therefore, those who cannot afford to go to class full-time due to work or family commitments can enroll for online courses.

Virtual Learning Environments (VLE's) offers quite a number of opportunities, and some of those opportunities are:

- Learning resources: instructors are able to share information such as list of topics, recommended textbooks, syllabus and many more with students enrolled in their courses (Fuentes et al, 2017). Students will then access and download the learning material at their convenient times. Generally, the instructor would stipulate "start and stop dates" for each topic.

- Dissemination of announcements: Angelis (2014) points out that notices to students can concurrently be made available in the e-learning platform and e-mailed to all the students in the course. Thus bringing them up to date with all the specific class notices such as changes in the course syllabus, availability of assignments/tests and marks obtained in previous assignments.

- Discussion forums: Any debate topics can be shared in the discussion forum and allow those interested to share their opinions in a "participatory" way. Within each forum, participants can see existing posts known as threads, and can also reply to those posts or create their own thus bridging the gap between the instructor and the learners.

- Assessments: the different tools available in VLE's allow for creation of assessments. The system then randomizes the questions so that students do not copy from each other. Fedena (2014) shares that randomization of assessment questions usually takes into consideration elements such as the "audience, type of test, or the testing environment and the computer lab. Generally, the randomizing option rearranges the questions for every student who appears for the exam.

2.4 E-learning as pedagogy

All the comprehensive definitions (section 2.2) of e-learning contain an assortment of hardware and software, which is used to convey e-learning and all the frameworks important for an effective and compelling education. As a take-off from e-learning's association with technology, Bermejo (2005) named this initiative as a methodology of delivering "education that uses computerised communication systems as an environment for communication, the exchange of information and interaction between students and instructors" for any individual, at any place, and anytime by using the web and digital technologies in line with guidelines and plan standards. Bermejo's definition acquainted the thought that technology ought to serve those purposes about traditional instructional method. In the same trend, Conole and Oliver (2007) depicted e-learning as the term mostly used to show a broader "domain of development research activities on the application of technologies to education". However, it was afterward

established that technology should be saddled toward pedagogies before it can be seen as a method for educational conveyance.

Whilst adaptability offers an answer to diverse methodologies to education, time and place restraints, e-learning made these necessities feasible in order for the learners to reside anywhere and get an education (Lee and Lee;2006). However Schank (2000) suggests that a successful framework is suitable for empowering learners to communicate with others and assist them to develop positively as required.

The European e-learning Action Plan has highlighted that usage of first-hand ICT technologies and the internet to advance the excellence of education by easing access to resources and services as well as remote exchanges and collaborations (Com, cited in Holmes and Gardner, 2006). E-learning was firmly located within an educational community in spite of students' choices of their own space and period when authors like Almuheisin (2002) categorized it as a kind of learning which is centred on the use of electronic media for communiqué between instructors and students and the institution at large. The tripartite liaison between pedagogy, technology and educational administration was part of Aldrich's (2004) definition of e-learning as a broad amalgamation of process, content and infrastructure by means of computers and networks to gauge and/or improve one or more important aspects of the learning chain, together with management and delivery.

Therefore, despite the captivation for equipment, as indicated above, e-learning cannot occur unless there is a basic justification for joining the components of technology, instructional method and the organization. In relation to the social science focus on the learning environment and its positive and negative effects on the development of the school, and the perceptions of learners be included in the investigations of e-learning.

2.5 Employing e-learning in education

In as much as there are different types of e-learning, three different models of e-learning have been identified. The first model is adjunct, whereby e-learning poses as the right hand man in the traditional classroom, putting forth relative autonomy of the learner.

The second is blended learning, whereby teaching and learning is shared between traditional learning and e-learning in the classroom set-up. According to Brown (2003), blended learning is an effective integration of face to face learning and internet technology. It supports all the discussed benefits e-learning (cost reduction, time efficiency, location convenience

The third is totally online, which takes place without classroom or traditional learning set-up. In a totally e-learning set-up, learner independence is at its maximum. This model (Totally online)

is further divided into individual and collaborative learning. Individualised learning means that each student is treated as an individual learner and facilitation takes into consideration his/her learning style and academic competence (Sarwart & Irshad, 2014). This therefore means that the student is responsible for their own learning as they work on separate and individualised learning activities. While collaborative learning means that students learn in small groups on assigned tasks and assisting each other when need arises.

Collaborative learning was further divided into synchronous and asynchronous learning (Zeitoun, 2008). Asynchronous learning is not tied to any physical location, thus allowing students to study regardless of their geographic location. Singh et al (2005) claims that learning the asynchronous way accords all people across the world the opportunity to lifelong learning. Synchronous learning is similar to a traditional learning set up, whereby communication and interaction happens in real time (Hrastinski, 2007). In this learning set up, students get the opportunity to watch the instructors' presentations and verbally interact during the learning sessions, thus making the discussions to be more dynamic as compared to asynchronous mode.

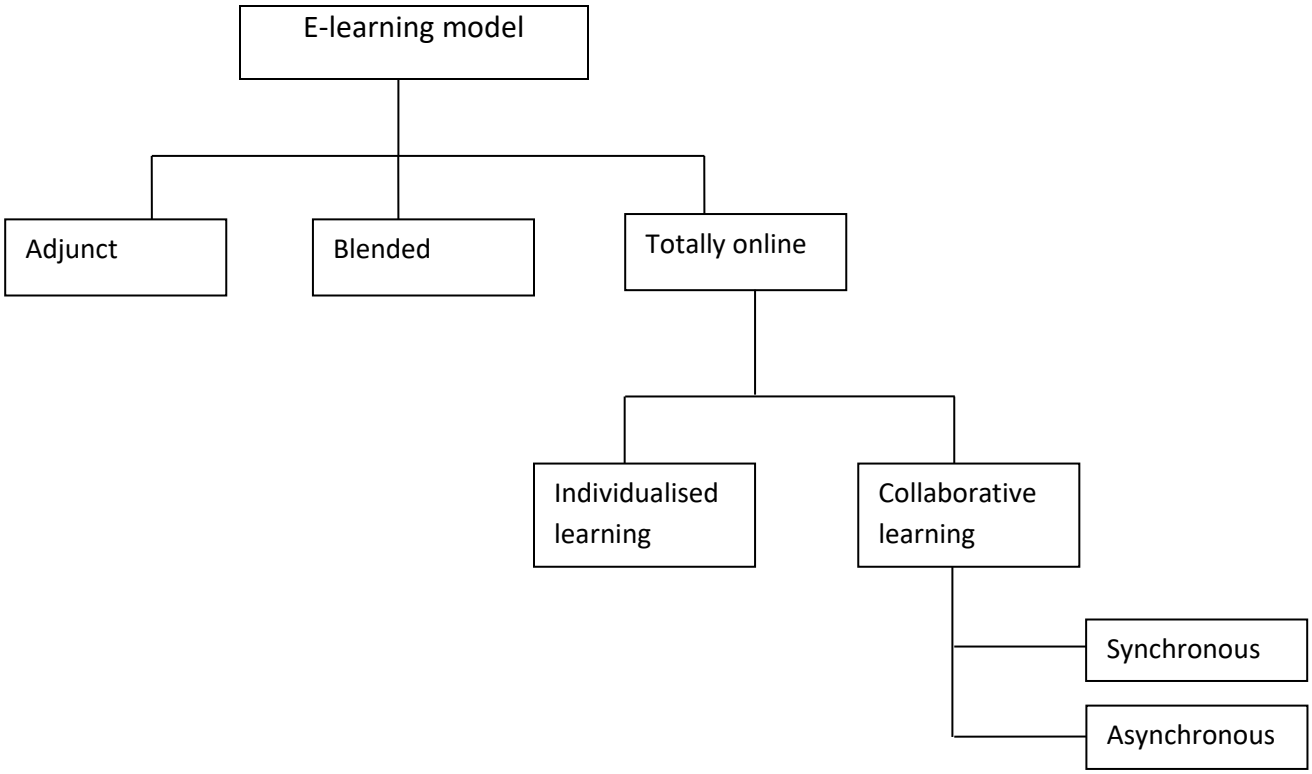


Figure 1: E-learning model (Adapted from Zeitoun,2008)

2.6 Will e-learning replace instructor-led teaching?

In the past decades, should one require a qualification, let alone learn something new, the requirement was that they should sign up for a programme or module(s) at an institution, pay the fees (if any), then start to physically attend classes. However, all that has changed since the introduction of online learning.

Goyal (2012) shares that the last few years have witnessed e-learning emerging as a solution that promises bring "lifelong learning" and workforce training. Organisations now see the need for effective and efficient training for staff so that they are all fortified with modern information and progressive skills. Upon realizing this need, universities worldwide offer online courses from certificate level to PhD. According to (McLeod, 2006; and Goyal, 2012), e-learning can be developed and delivered quicker and a large population across the world can use it at the same time, thus giving e-learning an advantage over instructor led teaching (ILT). Learners can access content/course material at any time convenient to them and participate only in sections relevant to them. E-learning has the benefit of reduced costs for travel (amongst other things), thus saving the learners and the company's time and money, whereas ILT is costly as there are some expenses associated with it such as "infrastructure cost, electricity cost, travel expense, meal expenses, lodging expenses and several other costs associated with it".

ILT has an advantage over e-learning in the sense that an instructor is physically present in the classroom and is able to answer or solve any student queries instantly. However, students are guided through the course in ILT during a specific timeframe, whereas e-learning gives the students the opportunity to study at their own haste, focusing only on what is important and get to skip any information that they feel is unnecessary, but in ILT the students are taught all the information at the same level and pace as the rest of the class. (McLeod,2006; and Goyal, 2002) shared the same observations that e-learning is far better, less costly and a learner friendly way of studying as compared to ILT.

This discussion has showed that e-learning is getting very popular these days, many institutions of higher learning worldwide now offer education programs online and big organisations are investing in e-learning. In this era of globalization and modernization, learners enjoy learning on a tablet with content loaded on it. Therefore, it is safe to conclude that e-learning will in future become the most popular mode of instruction around the world.

2.7 Students views on e-learning in higher education

Research has shown that students who use different e-learning tools have increased significantly over the years since ICT was integrated in teaching and learning. So it is important to share student's views on education technology as discussed in previous studies.

Alobiedat & Saraierh (2010) conducted a study on students attitudes towards e-learning resources, and they discovered that to many students, online learning gives them the flexibility and convenience to study and complete their studies when and where they so desire. Additionally, many opt for online education as a way of saving costs as compared to traditional learning.

Some learners have shared that technology and online instruction generally develops their critical thinking skills as they are provided with real life contexts that engages them to solve complex problems (Duffy& Cunningham, 1996). The usage of real life contexts generally includes activities that engage learners to "analyse, synthesize, and evaluate information" at the same time fabricating knowledge.

Student's perceptions on e-learning are influenced by personal variables such as "age, gender, previous experience with computers, technology acceptance and individual learning style" (Keller & Cernerud, 2002). Young students according to Keller & Cernerud, may have the opportunity to experience e-learning in secondary schools, while older students may use computers for the first time at University. Irrespective of age, the society expects men to use computers more than women (usefulness), while women use computers because they consider the system easy to use (ease of use); thus concluding that men and women consider different facets when opting for e-learning opportunities (Vankatesh & Morris, 2000).

In a study conducted in Sri-Lanka by Anderson (2007), it was discovered that even though some students felt web based learning is "cool", many (especially the novice e-learners) still regard it as improper for delivering education as compared to the traditional "face to face" teaching and learning. Another observation on students attitudes revealed that online education prides itself in "flexible" teaching and learning for those enrolled, but some exams and activities are not "flexible" in terms of what time of the day the exam will be conducted, thus advocating for them to be allowed to choose at what time of the day they want to write the exam. This point has led this discussion to now investigate which other challenges do students in e-learning face.

2.8 Major hurdles faced by students in e-learning

Even though the digital environment has proven to offer numerous opportunities in learning, there are challenges that can be encountered in the process and some of such challenges will be discussed in this section.

Student's challenges in e-learning can be influenced by "specific individual variables" such as age, gender, individual learning styles, and technology acceptance (Kelly and Cernerud 2002):

Age is believed to be one of the contributing factors to challenges faced by students in e-learning. Young students have the advantage of being exposed to e-learning at secondary schools, while adult learners are likely to use a computer for the first time in University often leading to successful utilization of ICT in education by younger learners as compared to adult learners (Kelly and Cernerud (2002).

Although some authors (Mills, et al. 2007) believe that there is no true unanimity about gender-effects on usage of ICT in education, Venkatesh & Morris (2010) and Ahmed & Kurshid (2015) conducted studies which proved that there is a significant relationship between usage of ICT in education and gender. The studies recorded high usage of ICT by men than women, due to issues of technology acceptance ("perceived ease of use, and perceived usefulness") which will be explored further in this study.

Aniela & Sorinel (2014) shared that the diversity of learning styles of students using e-learning can be a hindrance if their learning styles are not catered for in the learning process. To avert to that, Aniela and Sorinel advocate that teaching and learning material should be delivered in various interactive ways that will attract the different learners; for example, video, audio and writing.

Access to both a computer and internet makes online learning attainable (Anderson, 2007) but access without quality connectivity will not allow full contact with the content needed. Therefore, the steadfastness of bandwidth or the connection speed will affect the user's ability to track their studies. Many students in rural areas have noted that they cannot access internet because of connection speed, often leading to a back fall in their studies.

Summary/conclusion

This section gave a detailed discussion on the growing interest of many scholars in the different aspects of e-learning in higher education, such as the evolution of e-learning, student's attitudes (both positive and negative), and the challenges that they face has shown that even though they use e-learning tools and enroll for online education, there is still a lot that needs to be done. Furthermore, literature on the effectiveness of e-learning is very few especially in Botswana context and it generally suggest that the users are not a homogeneous group of users thus prompting this study to investigate e-learning platforms usage in the context of Botho university as a way of giving timely feedback/evaluation of the student's e-learning experiences. In other words, the discussion showed that e-learning is not only a new phenomenon in Botswana, but across the world too; so this study was an academic inquiry to

fill the gap in the education technology field about the effectiveness of e-learning and the value that the users attach to it.

Theoretical framework

This section will analyse some of the technology adoption models/theories which will eventually lead to the theoretical framework for online learning platforms of the students' technology acceptance for learning through virtual learning platforms. These will include, but not limited to: Theory of Reasonable Action (TRA) by (Fishbein and Ajzen, 1975), Theory of Planned Behaviour (TPB) by (Ajzen, 1991) and the Technology Acceptance Model (TAM) by Davis, 1989).

The Theory of Reasonable Action (Fishbein and Ajzen, 1975) shares that there are factors that regulates "behavioral intentions" of an individual's attitudes towards behaving a certain way. Attitude, according to (Fishbein and Ajzen, 1975), is affective and normally based on certain beliefs about the purpose of behaviour, for example; studying online is convenient for me as I can work during the day and study at home after hours. Furthermore, an individual's "subjective norms" of what they perceive as attitude towards certain behavior by their close community, for example; my friends have studied online, and it's a cost saving initiative on tuition fees.

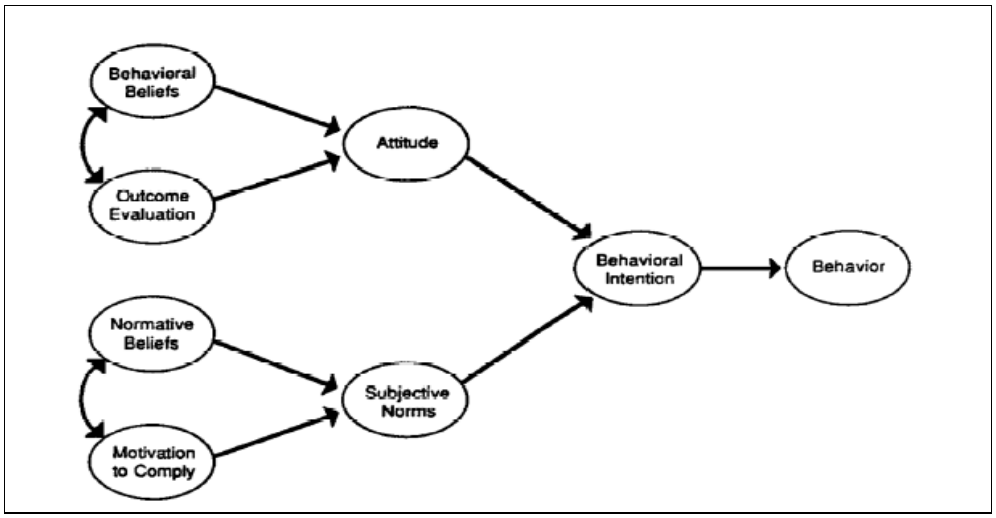


Figure 1. The Theory of Reasonable Action (TRA) (Fishbein and Ajzen, 1975)

It can be noted that TRA suggests that social norms are important in determining behavioral intentions of users, something which authors like Davis, Bagozzi and Warshaw's (1989) found to be very weak. For that reason, TRA could not be adopted in this study to establish student's acceptance and adoption of e-learning platforms.

Another theory by Ajzen (1991) known as Theory of Planned Behavior (TPB), suggests that there is one more factor that can be used to determine "behavioral intentions" towards a certain behavior (in addition to "Attitude" and "Subjective norms" that already exists in TRA). This additional factor is known as "Perceived Behavioral Control" which is the resistor that users feel is likely to limit their behavior (for example: can I apply for online learning and what are the necessities?).

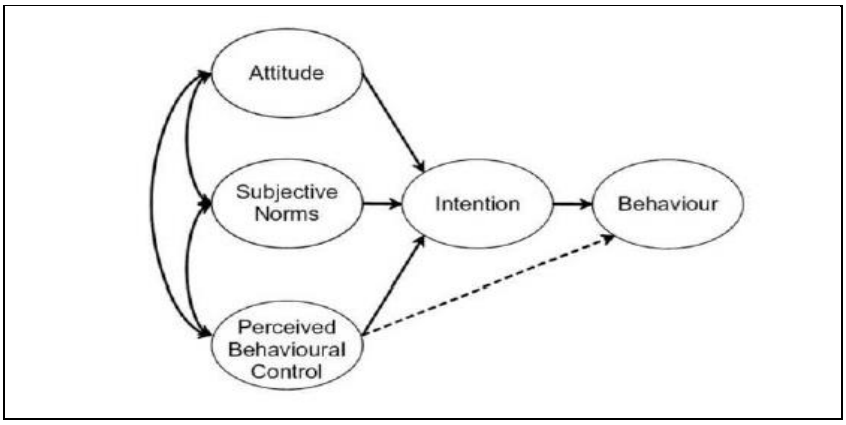


Figure 2. Theory of Planned Behavior (Ajzen,1991)

Just like the TRA, TPB was also bunked by many scholars (Davis, Bagozzi and Warshaw (1989), Yi, Jackson, Park, and Probst (2006) for incorporating social factors to explain technology adoption. Davis, Bagozzi and Warshaw (1989) elucidated that social norms do not have a strong "psychometric standpoint" as they were likely not to put forth any influence on technology users' behavioral intentions, especially if the system application is personal and usage is voluntary. Therefore, the theory TPB by Ajzen (1991) did not apply to this study.

The Technology Acceptance Model (TAM) was developed by Davis (1989) and it was custom-made to model user's acceptance of information systems. TAM aims at explaining the contributing factors to technology acceptance, and has included two tested beliefs: Perceived ease of use (PEU) and Perceived Usefulness (PU). According to Davis (1989), PU is defined as the user's likelihood to use a system because it will improve their action; and PEU is the degree to which a user expects a system to be uncomplicated.

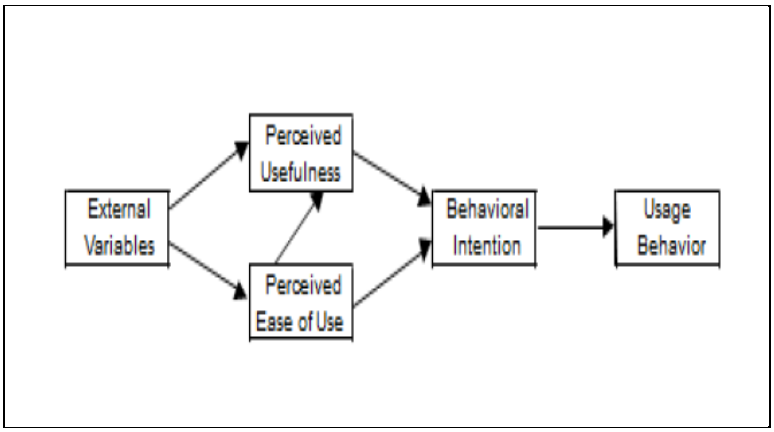


Figure 3: Technology Acceptance Model (TAM) (Venkatesh and Davis, 1996)

Lee, Kozar and Larsen (2013) shares that TAM has been cited in many studies which deal with "user's acceptance of technology". It can be concluded that TAM assists researchers to differentiate why certain technology systems may be acceptable or not acceptable. Therefore, this study has adopted Venkatesh and Davis' (1996) model to determine if the students acceptance or non-acceptance of e-learning platforms is influenced by their perceived usefulness and perceived ease of use of the platforms.

As discussed earlier, the study will explore the contributing factors of adoption of e-learning platforms from a student's point of view, and TAM (since its origin) has been practically used in a variety of ICT's adoption behavior of users, thus making it applicable to this study as it will productively explain the adoption of e-learning platforms.

CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

This section will closely discuss the different methods and instruments of data collection that will help answer the research questions. Furthermore, the ideal population and the sampling techniques will also be shared; validation and reliability of research instruments will be explained in detail. Ethical considerations and data analysis will also follow at the end of the chapter.

The study used an integration of different research methods in order to strengthen the validity of the findings. Baran & Jones (2016) share that almost 70-80% of past literature has used "triangulation" method in order to ensure that any "inherent bias of one method is overcome by the strengths of the other methods". Therefore, this study used a "Mixed method approach", which is a combination of qualitative and quantitative methods operating side by side to ensure validity.

3.1 RESEARCH DESIGN: METHODS OF DATA COLLECTION

MIXED METHOD APPROACH

This chapter aims to describe the quantitative and the qualitative methods as shared in the literature, including their connection to this study. Mertens (2009) shares that quantitative method is often used to scrutinize variables in a quantifiable approach. Data is collected using quantitative instruments such as questionnaires, which have been produced to guarantee that the data is valid, reliable, and has also been connected to a sample that represents the whole population. Accompanying its collection, data will be transformed quantitatively, prompting statistical results which after analysis will be generalised to the entire population. The quantitative strategies are often more centred on experimentation and revelation of the cause or the effect phenomena, also its validity relies on "accuracy" and "rigour" of the numerical information (Bryman, 2004). For purposes of this exploratory study, raw data from the questionnaire answers were analysed using SPSS with the help of the statistical departments of the university where the study was conducted (Botho University).

On the other hand, qualitative method, as discussed in the literature, emphasizes the understanding of the phenomena, perceiving research as an arranged action that locates the observation of the world, as it transforms into representations such as "field notes, interviews, conversations, photographs, recording, and memos" (Martens, 2009;p. 225). Furthermore,

Denzin and Lincoln (2000) discovered that qualitative research is unproblematic, as it includes "particular experiences, life stories, and interviews".

Qualitative research gives a comprehensive picture using words; data is collected using qualitative instruments such as "interviews, observation and the study of documents" (Bryman,2004), the legitimacy of qualitative methods comes from its procedures, as opposed to the sample, which most of the time is very small. Data is often gathered through communications among the researcher and the respondents. Moreover, conclusions are often reached by "contextual analysis of data" (Algahatani, 2011). Bryman (2004) continues to share that the results of a qualitative study are difficult to generalise to the whole population which is represented by the sample because of the fact that the method is not specifically designed for generalisations as it reveals the participants experiences of the phenomena under study.

The discussion has proved that qualitative research is mostly useful in exploratory research, where the mandate is basically to gain a deeper understanding of any underlying "reasons, opinions and motivations". Qualitative research answers the "how and why" questions because of its ability to analyse and interpret data. However, the method often varies using unstructured or semi-structured techniques (Wyse, 2011).

Quantitative research on the other hand is often used to quantify the research problem in numerical data and can therefore be "transformed into usable statistics" (Wyse, 2011). The method quantifies the defined variables, and the results are then generalised to a larger population.

This study used the mixed method approach which implies usage of both qualitative and quantitative methods to address the research questions. The qualitative method was used for the focus groups interviews, observations and the optional open-ended question at the end of the questionnaire, whilst the quantitative method was used for the questionnaire.

This section has outlined the major differences between qualitative and quantitative methods, in continuation the section below will further elaborate how the research instruments will be specifically used and applied in this study.

Data collection instruments

The research instrument that was used in quantitative approach is **Questionnaire**. The questionnaire was used to measure student usage and acceptance of e-learning platforms. There were three sections altogether; the first section was the opening section that introduces the respondent to the study, the purpose of the study and the reason why the respondent was chosen to participate was outlined. The second section had closed ended questions on the

Demographic data of the participants; their age, gender, faculty, and study programme. The third section asked questions related to their perceived ease of usage, and perceived usefulness of e-learning platforms as outlined by the Technology Acceptance Model (TAM) on a 4-point Likert-scale with strongly agree; agree; disagree; and strongly disagree.

In order to ensure validity of the questionnaire, about 5 officers from the office of Blended and distance learning campus and 5 lecturers were given questionnaires to revise it for objectivity, so that any irregularities can be identified before administering the questionnaire to the students. Issues of anonymity and confidentiality were taken into consideration too.

Focus group Interviews were used to introduce the qualitative approach of the study.
Face-to-face interviews were conducted to help identify students attitudes towards e-learning platforms, and the hurdles that they face when using e-learning platforms. Advantages of face-to-face interviews according to Saunders et al (2003) is that participants will be able to ask for clarity whenever they do not understand the question, the interviewer will also be able to follow up on the interviewee's responses.

Observation technique will help get "first-hand information" from the participants. Students were observed (without direct contact with them) in the library, computer labs and during class to see which educational technologies do they use and visit often, and also how they seem to be swayed to use a particular e-learning tool. If need arises to validate what is observed, I asked the participants some questions. An observation schedule was designed and it outlined the "behavioral and situational" factors to be observed and noted during observation.

3.3 POPULATION

The ideal population for this study was Botho university students across all faculties and years of study.

SAMPLE SELECTION

Stratified random sampling was used to collect quantitative data from students across all faculties, genders and year of study. This sampling technique was chosen because it has the advantage of capturing the "key population characteristics" in the sample (Killam, 2013), and it generally works well with populations that have a variety of attributes (thus making it relevant to this study).

Convenience sampling was used to collect Qualitative data. This sampling technique was used because it makes it easy to recruit subjects due to their "convenient accessibility and proximity to the researcher". Many researchers have shown appreciation of this sampling technique due to the fact that it is "fast, inexpensive, easy and the subjects are readily available". Participants

across all faculties, genders and year of study who participated in filling out the questionnaire were invited to willingly participate in the qualitative study.

3.4 VALIDATION AND RELIABILITY OF INSTRUMENTS

Validity is the degree to which a measuring device measures "what it is supposed to measure, and perform as it is designed to perform" (Mouton & Marais, 1996). For purposes of this study, external validity was employed. This generally means that the instrument will help obtain population generalizability; that is, the results can be "generalized from a sample to a population" (Mouton & Marais, 1996).

In order to ensure validity of the questionnaire, it was piloted on about 5 lecturers who were given questionnaires to revise it for objectivity, so that any irregularities can be identified before administering the questionnaire to the students. In specific terms, pre-testing of the questionnaire was done by interviewing lecturers in the institution for purposes of understanding the nature of e-learning platforms in Botho University, and how they incorporate them in their daily teaching and learning purposes. The lecturers formed an expert panel which evaluated the questionnaire forming the pre-testing stage.

The first thing that the panel commented on was that the questionnaire should not be too long and too wordy since the students were busy preparing for their exams so they should not be kept away from their books and study groups for too long. Some students had started writing exams already; so it was important to avoid a lengthy questionnaire so that the students do not get tempted to return the scripts empty.

The questionnaires initially used the five-point Likert scale which seemed easy for the panel to interpret. It was however suggested that the 'Neutral' scale which normally appears in the middle be removed. The main reason was that most respondents always opt for the neutral option yet most of the time it is not a true indication of their perceptions as the other options in the scale. So the final likert scale used in the final questionnaire administration was therefore a four-point scale.

According to Kent (2015), a **Reliable** measure has to be consistent in reflecting the construct that it is measuring. For purposes of this study, Cronbach's Alpha was used to measure consistency of results. Field (2009) shares that a Cronbach's alpha (α) is a commonly used and acceptable measure of reliability in quantitative research, and has values ranging between 0 and 1. Therefore, if the score is 0.7 and higher, then the scale is reliable.

Reliability Statistics

Cronbach's Alpha	N of Items
.873	19

The alpha value for the instrument is .873 which means that it is acceptable.

3.5 ETHICAL CONSIDERATIONS

Kent (2015) shares that ethics are apprehensive with usage of techniques in a such a way that there will be no mischief to the participants, users or any other person involved.

3.5.1 Confidentiality

In order for a study to be transformative, confidentiality must be questioned. So, in this study, the participant's right to privacy will be protected by not sharing or not making it recognizable to the community who has shared the data. Signed declarations which constrain right to use to data which identifies the participant should be acquired before any exposure can happen (Cohen, et al. 2007). Furthermore, privacy of participants can also be protected by deleting any characteristics of the participants that might point the information shared to a specific individual (Frankfort-Nachmias & Nachmias, 1992).

3.5.2 Informed consent

According to Shahnazarian et al (2017), the participants should freely volunteer to make a knowledgeable agreement to be part of the study. This was done in order to fulfill the researcher's obligation to fully enlighten the participants what the study is about, and how the data collected will be dispersed. Furthermore, it was discussed with the participants that they had the right to refuse to be part of the study, to understand how privacy will be sustained, the potential uses of the data collected, and since the process of consenting is ongoing, the participants were made aware of their right to "re-negotiate" consent (opt out or withdraw from the study at any stage). In short, informed consent process gives assurance that the participant understands what they are signing up for.

3.5.3 *Research permit*

As stipulated in the Botswana guidelines for application for research permit, the research proposal together with a completed application form was sent to the Ministry of Tertiary Education, Research, Science and Technology. Since this study was done as part of a partial fulfillment of an academic qualification and was affiliated to Botho University, a letter of endorsement from the institution accompanied the application.

3.6 DATA ANALYSIS

3.6.1 Analysis and interpretation of questionnaire data

Since respondents used a paper questionnaire, Falissard (2011) shares that responses from the questionnaire should be manually transferred into a spreadsheet. The four point likert scale responses were coded from 1 to 4; where strongly agree=4, agree=3, disagree=2 and strongly disagree=1 in order to calculate the Means. Further reference was made to one way ANOVA-Analysis of variance whereby first of all, it will be determined if any "statistical differences exists between the group means of two or more independent groups" (Wegner, 2012).

As soon as the questionnaires were filled and returned, they were thoroughly checked so that any questionnaires that were incomplete or did not show any seriousness can be left out. Fortunately, all the questionnaires were accepted and the number remained at 40. As Falissard (2011) had advised, the responses were transferred to a spreadsheet, where they were later transferred to the statistical package for social sciences (SPSS).

3.6.2 Analysis and interpretation of observed data

E-learning students' "behavioral and situational" factors of education technology usage observed and noted every hour during observation were shared in a table and graph plan. The number of hours spent on the internet, the frequency of usage of each internet website visited versus e-learning platforms usage observed was analysed, and the total frequency for all websites versus e-learning tools used by students was calculated.

3.6.3 Analysis and interpretation of interview data

Barnes and Hoyos (2012) suggest steps to analyse interview data. First, they recommend that all notes should be read, and tape recordings be listened to, carefully noting down the listeners first impressions of the transcriptions as a whole. The next step will be to code the data into relevant words, phrases, concepts or differences in opinion. Harding (2015) shares that coding helps examine commonality, differences and relationships between variables. Data with the same colour theme was later analyzed in detail.

Summary/Conclusion

This chapter has shared the research design and methodology that was used in this study. An integration of different research methods (qualitative and quantitative) in the form of a case

study was adopted. Methodologies that allow for collection of rich and first-hand information such as questionnaires, interviews and observations were used. Coding was the chosen method for analysis for empirical data, and SPSS and ANOVA was used to analyse questionnaire data. Furthermore, ethical considerations such as seeking permission to conduct the research, confidentiality and informed consent were also discussed.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF RESULTS

Chapter 3 presented a comprehensive discussion of the methodology that was followed in this study; where it was clearly stated that a combination of qualitative and quantitative methods were used, operating side by side to ensure validity. This chapter therefore focuses on presenting and analyzing data collected using the three methods of data collection (group interview, observation and questionnaire).

As discussed earlier, the aim of the study is to explore how students of Botho University have accepted or not accepted e-learning platforms, with the intention to come up with potential best practice solutions that will ensure a successful learning environment for both the learner and the instructor. The study took into account the students' demographic variations such as age, gender, faculty, and year of study to understand whether there are any statistical differences that might be affecting the respondent's acceptance or non-acceptance of e-learning platforms. This demographic data was tested using statistical methods for each variable.

4.1 Presentation and Analysis of questionnaire data

The quantitative questionnaire was used as a measuring instrument for the student usage of e-learning platforms and the relationship between the identified patterns of usage and the students' demographic variations. Therefore, this section focuses on presentation and analysis of data obtained using the questionnaire. It should be noted that this study was an exploratory that aimed at investigating student's usage, attitudes, and hurdles that Botho University students face in their usage of e-learning platforms.

Research Question 1

What are the levels of students usage of e-learning platforms

The questionnaire contained a total of 19 items to be analysed using a total of four (4) rankings (Strongly Agree, Agree, Disagree, and Strongly Disagree). So in order to determine the student's level of usage of e-learning platforms, it should be established whether they fall in the categories of Low, Medium or High users of e-learning platforms based on their rankings of each item from the Technology Acceptance Model (TAM) dimension (Perceived ease of use, Perceived usefulness and Actual system usage).

The Strongly Agree ranking in this case will give the participant a maximum score of 4 points, Agree will give 3 points, Disagree will give 2 points, while Strongly Agree will give 1 point. Therefore, a high user of e-learning platforms from the 19 questionnaire items will have a maximum score of 76 points (19 items × 4 points= 76 points), while a low user will score a minimum of 19 points (19 items × 1 point= 19 points).

After consolidation of participant's responses (where the sum of each participant's ranking of all the 19 items was calculated), it was concluded that:

- None of the participants fell under the Low usage category.
- A total of 8 users were medium users.
- 32 users were High users.

Table 4.1: ***Level of student usage of e-learning platforms***

Category	**Total users**
Low (0-25 points)	0
Medium (26-51 points)	8
Low (52-76 points)	32

The results were satisfactory as majority of users fall in the category of high users, with only a few falling under medium usage. So it can safely be concluded that students of Botho University have shown good and acceptable usage of e-learning platforms.

Research Question 2

What is the relationship between the identified patterns of usage and the students' demographic variations?

The research instrument (Questionnaire) was distributed among 40 students. The questionnaires were hand delivered and collected from the participants. Nature and purpose of the study, Issues of anonymity and confidentiality were discussed with the participants before attempting to answer the questionnaire. *Table 1* shares the demography of the participants classified under Age, gender, Faculty, year of study and gender.

Table 4.2: Demography of participants

Faculty/Department	**Year of study (N)**					**Male**	**Female**
	1	2	3	4	TOTAL		
Accounting and Finance (FOBA)		4	5	5	22 (55%)	23	17
Business Management (FOBA)				8			
Health Information (FHE)		4	2	4	10 (25%)		
Computing (FOC)			3	6	8 (20%)		

Table 1 above shows that a total of 40 respondents participated in the questionnaire data collection. From that population, 57.5% of the sample composed of male learners, while 42.5% were females. There are currently three Faculties in Francistown campus FOBA, FHE, and FOC. From FOBA, 55% of the participants comprising of final year students studying BSC (Hons) Business Management, BSC (Hons) Accounting) and BSC (Hons) Finance participated in this study. From Faculty of Health and Education, 25% of the participants were studying BSC (Hons) in Health Information Management. FOC was represented by 20% of students studying BSC (Hons) Network Security and Forensics. As can be noted from the table, the campus currently does not have any first year students.

Table 4.3: Distribution according to age

With regards to age, a total of three age categories were divided to cover the 4 years which Batswana students spend in university, and were chosen between undergraduates' common ages when they finish senior secondary school to start tertiary education (around the age of 19 years), and likely to continue until they are around 24 years old.

Age	**Frequency**	**Percentage**
20 years or less	-	-
21 to 23 years	20	50%
24 years or more	20	50%

The table above shows that none of the participants fell in the age group of 20 years or less. This can probably be attributed to the fact that the age group normally covers first year students who are currently not represented in this study as the university has no first year intake this academic year. The sample composed of 50% participants aged 21-23 years, and 50% of those aged 24 years or more.

Table 4.3.1: Age wise comparison of Mean and Standard deviation in the acceptance and usage of e-learning platforms.

In order to measure if the variable "Age" has any significance in the participant's responses to any of the dimensions; Mean and Standard deviations were calculated, followed by t-tests to show if the variable has any statistical significance.

Age	N	Mean	Std. Deviation
21-23	20	53.5500	7.60523
24 or more	20	61.5000	6.62134

	t-test for Equality of Means					
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	
Equal variances assumed	-3.526	38	.001	-7.95000	2.25479	

As discussed earlier in this section, the youngest age group of 20 years or less was not represented in this study. 50% was represented by the middle age group of 21 to 23 years, and

the remaining 50% comprised of the older age group of ages of 24 years or more. The statistics show Sig .001 which means that the variable Age was statistically significant. In other words, the participant's age affects their response to the dimensions.

Table 4.4: Gender wise comparison of acceptance and usage of e-learning platforms

In order to measure if the variable "Gender" has any significance in the participant's responses to any of the dimensions; Mean and Standard deviations were calculated, followed by t-tests to show if the variable has any statistical significance.

Gender	N	Mean	Std. Deviation
Male	23	58.9565	7.44970
Female	17	55.5882	8.77538

	t	df	Sig. (2-tailed)	Mean Difference
Equal variances assumed	1.311	38	.198	3.36829

The results above indicate that gender does not show any significance in their responses any of the dimensions on usage of e-learning platforms.

Table 4.5: Year of study wise comparison of acceptance and usage of e-learning platforms

In order to measure if the variable "Year of study" has any significance in the participant's responses to any of the dimensions; Mean and Standard deviations were calculated, followed by ANOVA test to show if the variable has any statistical significance.

	N	Mean	Std. Deviation	Std. Error
Year 2	7	51.7143	7.56559	2.85952
Year 3	10	54.2000	7.64199	2.41661
Year 4	23	60.7391	7.10453	1.48140
Total	40	57.5250	8.10820	1.28202

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	584.512	2	292.256	5.463	.008
Within Groups	1979.463	37	53.499		
Total	2563.975	39			

The results show that 17.5% of the study population was represented by Year 2 learners; Year 3 learners represented 25% of the study population, while Year 4 was represented by 57.5%. The statistics show a Sig .008 which means that the variable "Year of study" was statistically significant. In other words, the participant's year of study affected their response to all the dimensions.

Table 4.6: Faculty/department wise comparison of acceptance and usage of e-learning platforms

In order to measure if the variable "Faculty/Department" has any significance in the participant's responses to any of the dimensions; Mean and Standard deviations were calculated, followed by ANOVA test to show if the variable has any statistical significance.

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Computing	10	58.2000	7.94145	2.51131	52.5190	63.8810	47.00	74.00
HIM	8	54.1250	10.73629	3.79585	45.1492	63.1008	42.00	68.00
Accounting & Finance	13	59.6923	6.95683	1.92948	55.4883	63.8963	49.00	69.00
Business management	9	56.6667	7.44983	2.48328	50.9402	62.3931	45.00	67.00
Total	40	57.5250	8.10820	1.28202	54.9319	60.1181	42.00	74.00

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	164.731	3	54.910	.824	.489
Within Groups	2399.244	36	66.646		
Total	2563.975	39			

The results show that F [3, 36] = .824, P <.05 at 95% level of confidence, the Mean score of usage of e-learning platforms (using TAM dimensions of Perceived usefulness, Perceived ease of use, and Actual usage) between learners of different Faculties/departments are not statistically significant.

4.2 Presentation and Analysis of interview and observed data

This section (4.2) will focus on presentation and analysis of empirical data. This is the data that was obtained from focus group interviews and observations. Interview questions focused on establishing the participant's challenges that they face in their daily usage of e-learning platforms. The student's lived experiences were so rich such that they addressed one of the research questions fully; "Which hindrances do Botho University students face in their usage of e-learning platforms?**"** The discussion revealed a detailed picture of the student's challenges in the usage of e-learning platforms.

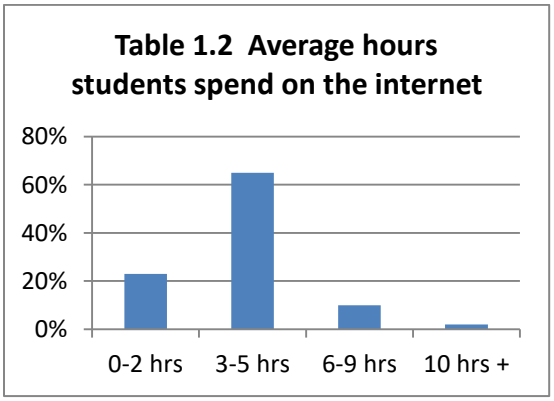
The methodology section mentioned techniques that can be used to draw a sample. Algahtani (2011) shares that the most commonly used ways are "simple, systematic, stratified and cluster random sampling". There are also "non-random methods such as purposive and accidental". This study used Convenience sampling in order to obtain "basic data and trends" regarding the study. As for the sample for the group interview, the choice and size was influenced by literature (McLafferty, 2004, & Algahtani, 2011) who recommended "six to eight, eight to ten, while others said eight to twelve and others up to sixteen percent of the questionnaire sample". This generally shows that group interview size and choice is a very controversial issue in research. For this study, as mentioned in the literature, a sample that represents the population was achieved by inviting all the participants who filled in the questionnaire to participate again in group interviews. A total of five participants showed up on the scheduled day, which gave twelve and a half percent total of those who participated in the questionnaire sample. As shared earlier, the interviews aimed at establishing the hindrances faced by Botho University students in their daily usage of e-learning platforms.

Research Question 3

Which hindrances do Botho University students face in their usage of e-learning platforms?

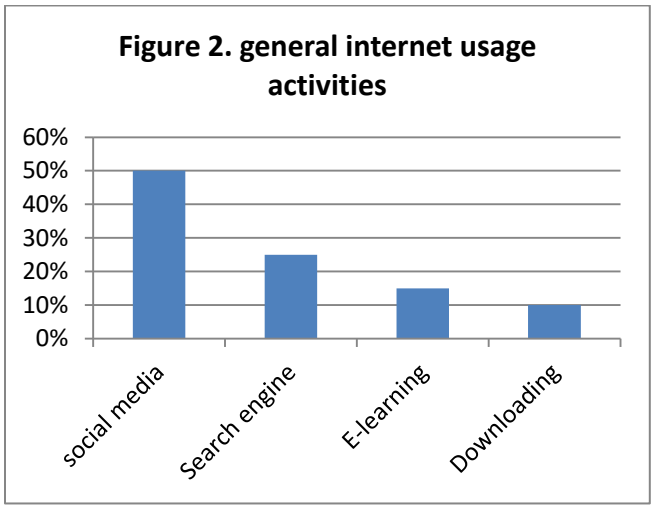
4.2.1 Observation data

Students were observed to establish roughly how many hours they spend a day on the internet. The participants usage of the internet showed that technology has brought the whole world into their hands, as they opened so many websites in a short period of time, and the institution allows free access to most websites on the internet which made it even easier to always be online either on their smart phones, laptops or in the computer labs. When approached briefly to share how many hours they spend online, most participants claimed that they do not normally keep track of the number of hours they spend online, especially when they are on campus. However, on average, 65% of the participants stated that they spend an average of 3-5hours a day, and that is the time they are in the university premises, 23% spend 0-2hours a day, 10% spend 6-9hours (both on campus and at home) , while only 2% spend 10hrs or more per day (figure 1).



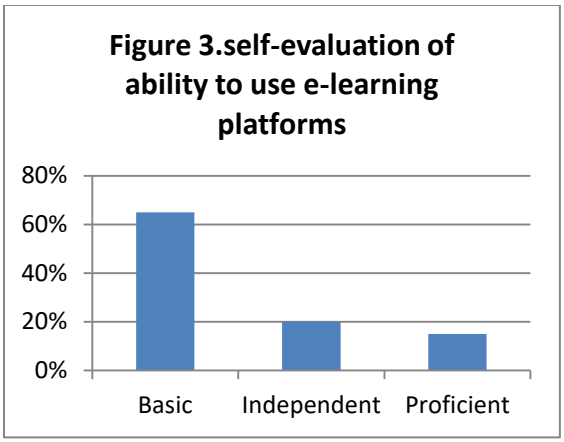
The observation further sought to establish the participant's purpose for being online during the hours specified above. Participants (50%) appeared to be using the internet mostly for social communication as majority seemed to embrace the idea of forming and building social relationships online. They visited social media sites like Facebook (heavily used), WhatsApp, Myspace, Instant messaging for social interaction. 25% of participants had the chance to use

search engines like Google to search for information, which most of the time was not academic related; as one of the participants spent a considerable amount of time searching for celebrity gossip. E-learning platforms scored 15% of the total time spent on the internet; when approached to comment on why they spent little time of the average time spent on the internet studying, most participants lamented that they found that the same slides which were uploaded on Blackboard were the same slides which were presented in class, furthermore, some of their instructors are "lazy" and are "not innovative enough" to come up with exciting content to upload, "some tutors do not even update content in those platforms daily, yet they expect us to visit it daily". Downloading movies, music and playing online games scored 10% of the time (figure 2).



4.2.2 Group interview data

The participants were asked to self-evaluate their ability to use e-learning platforms and other internet websites. Majority classified themselves as basic users (65%), while 20% call themselves independent users, and the remaining 15% falls under proficient users (Figure 3).



Furthermore, participants were asked to rate the features/applications of e-learning platforms which they find potentially significant for learning their programme of study. Majority was happy with the innovations brought by Blackboard (57%), although a small population still prefers the traditional face to face interaction with their tutors and peers; one participant shared that "some topics are very hard/complicated to study alone away from a traditional classroom, should I have a query it cannot be raised and addressed within the moment." Even though one participant prefers face-to-face interaction, she grieved that some of her tutors often chase her away when seeking for one-on-one moments with them, "they say I should learn to study and figure out things on my own, instead of waiting to be spoon fed on every topic". Most participants widely held the video sharing application (33%) as it brings them closer to the traditional classroom set up they are used to (although there is a limitation on interaction). As shared earlier, participants often feel that tutors upload the same slides presented in class on Blackboard, so there is no need to re-visit them, "some tutors copy the text book chapters as they are and paste them on the slides", so slide share scored 9%, Discussion forums (1%) because of its lack of instant discussion and feedback, and Wikis (0%) (Figure 4).

From the questionnaire open ended question responses, the observations, and the few interview questions already discussed, it can be predicted that there are probably many challenges that students who use technology in an academic environment face. Therefore, students were asked to share the challenges that they face in their transition to learning using education technology.

> Students shared that there is limited interaction when learning using technology. For example; Blackboard does not have provisions for live discussions (also known as

synchronous discussions), as they only participate in asynchronous discussions which do not encourage engagement.

Technical problems such as files like video clips and PDF declining to open/download at a time of need, forcing the user to wait for the next day (if they were studying after university working hours) or come to the university if they were working from home to ask for assistance. This point takes us back to the previous one that emphasizes the need for synchronous discussions.

Internet connectivity and reliability items on the questionnaire open ended questionnaire appeared several times, thus prompting for a follow up through group interviews. The participants lamented that internet connection is not reliable in the university as there are times when the internet speed will be very slow, which affects modules/topics integrated with video clips and animations.

Some instructors do not update the learning resources regularly. Some participants shared that their instructors often upload learning resources from previous years, and most of the time the content is outdated. One participant shared they she really appreciated their instructors for always uploading extra learning material on Blackboard, but the content has to be up to date.

"*Some of the instructors do not use e-learning platforms, nor upload new content every day. Yet they expect us to visit it daily*…." Was a comment from one of the participants who was observed opening and closing Blackboard in a period of 5 minutes, while he spent more than 2 hours in other internet websites. The group was asked to comment on their experiences regarding that observation, and majority concurred with the statement. Some instructors according to the participants only upload content at the beginning of the semester and never go back to use the other features of the learning platform, while some copy the text book chapters as they are and paste them on the slides.

The negative points shared by the participants in the group interviews generally show the student's concern for some instructors who do not fully utilize the e-learning platforms which calls for a thorough investigation. The open ended question at the end of the questionnaire revealed the students dissatisfaction with internet connection in the university, which according to the live discussions is very unreliable and often very slow to allow for any form of online learning to take place.

Summary

In summary, chapter 4 has shared the research findings from the research instruments questionnaire, observations and focus group interviews. The questionnaire responses were

presented in table form, compared and summarized. Any comments arising from the open ended section of the questionnaire were reported and summarized. The reasons why qualitative research was necessary for this study were also shared.

One important fact that emerged from both qualitative and quantitative study indicated that learners perceived e-learning platforms as a learning method that can improve their learning (perceived usefulness), and it is generally easy to use (perceived ease of use). Interacting with the learners showed that they were generally all able to learn using e-learning platforms and found it easy to interact with the content, colleagues and their instructors online. The students' demographic factors such as their age, gender, year of study and faculty did not show any impact on the students' perceived usefulness and perceived ease of use of e-learning platforms, and the way they interact with their colleagues and instructors. The optional open ended question in the questionnaire showed that students were generally frustrated with unreliable internet connection in the university.

The students perceptions discussed in the previous paragraph were endorsed in the focus group discussions and quite a number of issues that specifically address student usage of e-learning platforms were discussed in detail as compared to the written comments. Issues such as the length of time they usually spend on the internet and the things they get up to when they browse the internet were discussed at length. It was also important to find out the e-learning platform features that they find appealing, and everyone had to motivate their choice; and that is where some of the challenges that they face as users of e-learning platforms.

CHAPTER FIVE

DISCUSSION AND INTERPRETATION OF RESULTS

Introduction

Chapter 4 presented and analysed data from the three methods of data collection adopted in this study. The participants shared their lived experiences on usage of e-learning platforms on their academic journey. The discussion in chapter 5 will shadow the same structure that was used in chapter 4, where the research questions were discussed in the order in which they appear in chapter 1, that is, the first research question results will be discussed first and then the second and third question will follow in the same manner.

It is important to note that the main focus of this study was to explore usage of e-learning platforms by Botho university students. The study aimed to establish the students' patterns of usage of e-learning platforms, followed by the relationship between the usage patterns and the students' demographic variations, and lastly to identify any hindrances that they face on daily basis as they use e-learning platforms.

Research Question 1

What are the patterns of usage of e-learning platforms amongst Botho university students?

Most of the items with regards to the learner's perceived usefulness, perceived ease of use and Actual usage of e-learning platforms were ranked between "Strongly agree" and "Agree". This generally suggests that the students are satisfied with the positive impacts that e-learning platforms have on their studies. So it can be determined that students do not feel any kind of pressure in terms of interaction with content, peers and instructors.

The Perceived ease of use dimension in the questionnaire had the highest ratings. This therefore proposes that students often feel encouraged to use the platforms due to it being user friendly regardless of user's previous e-learning experience, and probably the built in features in the system. This was also supported by Ownston (1997) study where it was discovered that e-learning allowed easy access to a vast pool of information which saves time and money that can be invested in further knowledge acquisition.

El-Seoud et al. (2014) share that the significance of e-learning as "an education tool" has grown significantly over the years. According to their findings, a yearly increase of around 12-14% of online enrolments over a period of five years (2004-2009) was noted. This increase was attributed to the fact that e-learning can be undertaken at any place, any time; it also gives the learner the opportunity to choose whether they want to study full-time or part-time. Another advantage is that students can share information easily.

A description of the positive benefits of e-learning in higher education as discussed by Laurillard (2004) suggests that e-learning has effectively been used to improve the "traditional forms of teaching and administration". This was proved by the fact that students across all faculties in some institutions of higher learning now have access to their lecturers learning resources, digital resources that support their learning, discussion forums where they can share ideas and experiences with their course mates.

In closing, the answers to the first research question on student's level of usage of e-learning platforms show that usage is satisfactory. Learners are generally satisfied with the degree to which the system is not difficult/complicated to use and helps them get the work done, thus helping them to uphold a positive approach to learning. All this discussion has pointed to online learning growing in popularity as students enjoy all the positives that come with e-learning such as convenience and ease.

Research Question 2

What is the relationship between the identified patterns of usage and the students' demographic variations?

The student's demographic data (specifically their gender and faculty) did not show any significant differences attributed to their perceived usefulness and perceived ease of use of e-learning platforms. This generally points to the fact that usage of ICT has become so popular across all genders, thus creating a widespread usage across all faculties. A study by Arshad & Ahmed (2015) shared the same sentiments that students aged between 21 and 30 years (the same period that covers the student university life in Botswana that was used in this study) showed little or no concerns with regards to their perceptions and attitudes towards using ICT in their education as compared to students in their middle ages.

However, there was a statistically substantial difference ascribed to the participant's age, attributed to the dimensions of perceived usefulness and perceived ease of use. Perceived ease of use showed higher scores amongst males than females. Finally, there were statistically significant differences in the dimension attributed to perceived usefulness of those who use the platform on daily basis.

All the participants had indicated that they did not have previous experience in using e-learning platforms upon joining the institution, but their general positive results on perceived usefulness and perceived ease of use of e-learning platforms suggest that they have successfully adjusted to the pedagogy, and have found the system acceptable and beneficial for their academic purposes in general. These positive results can probably be attributed to the training that they receive before they can actually start using the platform for their learning.

Research Question 3

Which hindrances do Botho University students face in their usage of e-learning platforms?

The negative points shared by the participants in the group interview generally show student's concern for some instructors who do not fully utilise the e-learning platforms which calls for a thorough investigation. The open ended question at the end of the questionnaire revealed that students are not satisfied with internet connection and speed. The live discussions shared that the connection is often very slow to allow for any form of online learning to take place.

These negative points on technical obstacles were supported by McConnel (2008) who explained that technological infrastructure has a large impact on the student's beliefs regarding e-learning. For example, countries like China have the most advanced and decent infrastructure, but UK offers developed "support measures" which are better than the ones in China, often leading to students and teachers in China experiencing some challenges in adoption of e-learning in higher education as compared to those in the UK. Hiltz & Turoff (2005) share that if universities are not able to make their technological infrastructure at par with new technologies; they are likely to fall behind in technological development.

Although the e-learning platform (Blackboard) in Botho University currently supports only asynchronous mode of communication (where student interaction happens "over a time gap") using tools such as email and discussion forums, Hrastinski (2007) maintains that asynchronous communication is good at supporting "cognitive participation" as the users get sufficient time to reflect and exchange compound information. The partcipants reasons for their desire to have an e-learning platform that supports synchronous mode of communication were supported by Hrastinski (2007) who shared that synchronous communication happens in real time, interaction is instant as compared to depending solely on asynchronous communication.

Potential solutions to the hindrances identified

All the students showed a great concern about unavailability of live discussions when using e-learning platforms, such that if a student needs immediate feedback or assistance they have to be physically present on campus. This hindrance is generally likely to lead to disengagement in some students and end up abandoning usage all together. Therefore, they recommended that the institution should invest in infrastructure that will make provisions for instant and timely feedback (one that supports both synchronous and asynchronous discussions), rather than be

stuck with an education tool that academics do not like or one that restricts their learning as it can lead to disengagement and in most extreme cases, drop outs.

The institution has obviously invested lots of money on computers and internet connection, so the participants pointed out that it is high time internet speed and reliability be solved right away so that technology can be used effectively to bring returns to the investment.

Furthermore, it was suggested that instructors should be encouraged to update every learning resources to be uploaded on Blackboard, preferably before the semester begins and things start becoming hectic for both the instructor and the learners.

Lastly, it was suggested that instructors should be encouraged to use e-learning platforms and incorporate them in their daily teaching. So it is important to first start by establishing why they are not incorporating it in their teaching and learning so that the challenges can be addressed fully. As El-Seoud et al (2014) has suggested, in order for success to take place instructors in institutions of higher learning "must accept, implement and adopt technological advancements offered by e-learning". A study conducted by Mashhour and Saleh (2010) also established that some instructors do not understand how e-learning "would be of use to their own teaching". As a result, teachers did not use e-learning in their teaching. Therefore, Mashhour and Saleh suggested that instructors and institutions of higher learning, should be prompted to encourage usage of e-learning in order to make students completely employ it in their studies.

Summary

This chapter has discussed the results of this study, which generally indicate that usage of e-learning platforms is accepted and perceived positively by the all the participants. The discussions in group interviews showed that the students are aware of the limitations that come with usage of e-learning platforms, and are willing to see them amended for improved usage. It can therefore be said that conclusions and generalisations can be drawn from the results.

The next final section of this chapter will share the suggestions for future research as identified from the three methods of data collection used in the study (questionnaire, observations and group interviews) and the general conclusion of this study.

SUGGESTIONS FOR FUTURE RESEARCH

During this study, it became evident that further research is required into the area of education technology which could benefit the students, the facilitators and the institution at large. Therefore, I suggest that further research should be done in the following areas:

- The study has revealed that not all lecturers/facilitators are active users of e-learning platforms. Therefore, it is important that a study be carried out to find out why some of the lecturers/facilitators are not incorporating e-learning platforms in their daily teaching. Is there any particular reason for non-acceptance/non-adoption?

- It is suggested that further research be done in other private tertiary institutions in Botswana as this study only focused on participants from Botho University. This will help bring in a larger sample.

- Further research should also be done to find out how the software "vendors" take into consideration the needs and expectations of academics.

GENERAL CONCLUSION

Literature review has shared that globalization requires higher education institutions to be significantly computerized, and all personnel (instructors and educators) should be equipped with the skills and expertise to use technology to enhance their teaching methodology. Research has shown that e-learning has the advantage of a quicker delivery cycle than "traditional classroom based instruction", and the results of this study have clearly demonstrated the effectiveness of e-learning platforms from students' point of view. Although there are some negatives or hindrances which students face, the impression is that the suggested solutions will help reduce any controversy and remedy any drawbacks. This study on "usage of e-learning platforms amongst private tertiary students: a case study of Botho University" is therefore concluded by saying that usage of ICT in teaching and learning in institutions of higher learning has been explored through literature review, usage of triangulation as a research method and has suggested areas for future research. This study will therefore be hopefully used by the academic community of Botho University, Botswana and the world at large.

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APPENDIX A

QUESTIONNAIRE

INTRODUCTION

My name is MOTLATSI LORATO KEOSEKILE. I'm a student at Botho University pursuing Masters in Education-Higher Education. I am currently conducting a study on "**Student usage of E-learning platforms"**. The aims of this study are to explore how students of Botho University use e-learning platforms, which factors influence student usage of such platforms, and to identify the hindrances that they face, with the potential to come up with innovative solutions to any hindrances identified. Please feel free to answer all questions honestly, and the information that you provide will only be used for purposes of this study and will not be abused in any way.

PART A

Demographic Information

Gender	Male	Female		
Year of study	Year 1	Year 2	Year 3	Year 4
Faculty/Department	Computing	Health and information	Accounting and Finance	Business management

PART B

Students' Technology acceptance levels

Please share your honest judgment to what extent do you agree with the following statements.

Please tick one of the five options for each statement below.

	Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
Perceived usefulness				
E-learning platforms can help improve my reading skills.				
E-learning platforms can help improve my writing skills.				
E-learning platforms can help improve my speaking skills.				
E-learning platforms can help improve my listening skills.				
E-learning platforms can help improve my study skills.				

Perceived ease of use				
Learning my programme of study using e-learning platforms is easy for me.				
I realize that I have become skillful in using e-learning technologies in my studies.				
E-learning platforms are flexible in interacting and collaborating with peers and instructors.				
E-learning platforms are easy to use.				
E-learning platforms are useful in my studies				
The advantage of using E-learning platforms outweighs disadvantages of not using it in my studies.				
E-learning platforms offer a good learning opportunity in my studies.				

Actual system usage
How would you rate your Actual usage of e-learning platforms?

I have sufficient ICT skills to take me through usage of technology in learning.				
I use e-learning platforms to improve my studying and learning.				
I use e-learning platforms to enhance my competency levels in my studies.				
Students receive adequate IT support from the university.				
Downloading and uploading assignments online always feels safe.				
The standards used to support privacy of data are clear that is why I use e-learning platforms.				
My course is easy to teach and learn using e-learning platforms.				

Any other experiences related to your actual system usage not listed above can be written in the space below:

_____

_____

_____

THANK YOU FOR YOUR PARTICIPATION

APPENDIX B

INTERVIEW QUESTIONS

1. Do you all have access to internet? Whether on/off campus?

2. How many hours do you spend on the internet in a day? Say in a scale of 0-2hrs, 3-5hrs, 6-9hrs, and 10+ hrs?

3. What do you normally do when you are online during those hours?

4. How would you evaluate your ability to use e-learning platforms like Blackboard? Would you say you are a basic/independent/proficient user?

5. How would you rate the features of e-learning platforms (start with the one's you feel are potentially significant for learning your programme of study), e.g. video sharing, discussion forums, wikis, slide-share, etc. any specific reasons for rating the features high or low?

6. Which challenges do you normally face during your encounter with e-learning platforms?

7. Kindly suggest solutions to any challenges discussed earlier.

APPENDIX C

OBSERVATION SCHEDULE

Participant's internet usage behavior

Participant code: _____

Name of observer: Motlatsi keosekile_____ Date:_____

Note the participant's behavior in the following categories

Usage behavior	**Observation notes**
Hours spent on the internet	
General internet usage activities	
Challenges observed	

APPENDIX D

CONSENT FORM

I, the undersigned,..... hereby agree to: take part in the research on the topic: **USAGE OF E-LEARNING PLATFORMS AMONGST PRIVATE TERTIARY STUDENTS: A CASE STUDY OF BOTHO UNIVERSITY.**

I authorize the researcher to use in her discretion, the data that I here provide for purposes of writing a research report on the topic given above.

Furthermore, I also state that it is my understanding that:

I may, at any time, withdraw my consent and discontinue taking part in the research; the information that I have provided until such time as I withdraw my participation in this research can still be used by the researcher; the researcher will, at all times maintain strict confidentiality and anonymity of the identity of the participant and the information so given by the participant;

I have the prerogative to refuse to answer any question(s) as and when I feel such question(s) infringe on my privacy; by signing this consent form, I undertake to answer in an honest manner all reasonable questions, not to provide false information and not in any purposeful way mislead the researcher;

I herewith declare that the researcher;

- has explained to me the aims of this research
- has informed and explained to me the content of this consent form.

By co-signing this consent form, the researcher undertakes to observe the provisions of this form and I (the participant) indicate that I understand and agree to take part in this research.

Signed at..... on ..... (date)

Participants' signature.....

Researchers' signature.....

APPENDIX E

GABORONE:
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Ref: 0649/GSERC/GB/2017
December 7, 2017

The Permanent Secretary
Ministry of Tertiary Education, Research Science & Technology
Private Bag 00517
Gaborone

Dear Sir/Madam

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

This is to confirm that Mrs. Motlatsi Lorato Keosekile is a student of Botho University reading for a Masters of Education in Higher Education programme.

The student would like to conduct research at Botho University under the topic "**Usage of E-learning platforms amongst private tertiary students-A case study of Botho University**".

In light of the above, the Faculty of Graduate Studies and Research in Botho University is seeking your permission to allow her to carry out this research and accord her the necessary support as it will help in the completion of his studies.

The information collected will be used solely for this research and will be treated with high confidentiality.

Yours faithfully

Dr. Norman Rudhumbu (PhD)
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