DEVELOPING LIBRARY PRODUCTS AND SERVICES TO SUPPORT BLENDED LEARNING AT UGANDA CHRISTIAN UNIVERSITY AND ITS AFFILIATED CAMPUSES

Mini-Dissertation by

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DECLARATION

I Stephanas Galinnya declare that this Mini-Dissertation entitled "Developing Library Products and Services to Support Blended Learning at Uganda Christian University and its Affiliated Campuses". Is my own original work; and it has never been submitted to this or any other Institution for any award. I have also cited all data used to compile this Mini-dissertation for the partial fulfilment for the award of the Master degree of Information Technology for Librarians of the University of Pretoria.

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APPROVAL

This work has been submitted with the consent and approval of the following supervisors:

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DEDICATION

I dedicate this Research Report to my beloved wife Mrs. Immaculate N. Galinnya for her support spiritually, emotionally, socially, academically and financially. May God abundantly bless you.

ACKNOWLEDGEMENT

ACRONYMS

AIM	:	African Inland Mission
AGORA	:	Access to Global Research in Agriculture
AVU	:	African Virtual University
BBUC	:	Bishop Barham University College
CMS	:	Christian Missionary Society
CUPA	:	Church of Uganda Provincial Assembly
DVC A/A	:	Deputy Vice Chancellor Academic Affairs
DVC D&ER	:	Deputy Vice Chancellor Development and External Relations
HINARI	:	Health Internetwork of Access to Research Initiative
HOD	:	Heads of Department
ICT	:	Information Communication Technology
I.T	:	Information Technology
JSTOR	:	Journal Storage
LAN	:	Local Area Network
LMS	:	Learning Management System
NCHE	:	National Council for Higher Education
NIV	:	New International Version
OARE	:	Online Access to Research in the Environment
UCC	:	Uganda Communication Commission
UCT	:	University of Cape Town
UCU	:	Uganda Christian University
UIS	:	University Information and Communication Technology Services
UPTC	:	Uganda Posts and Telecommunication Corporation

ABSTRACT

Blended learning (also referred to as online learning) support at Uganda Christian University (UCU) is still at its initial stages at both the Main Campus and Affiliated Campuses. Blended learning is the combination of different training media such as technologies, activities and types of events which are used to create an optimum training program for a specific audience (Bersin, 2004). Blended learning offers use of multiple teaching styles (that is lectures, action learning activities and demonstrations within the lecture room) to retain the students' attention by accommodating the differing learning styles and thereby enhancing the learning experience of the students (Garrison and Kanuka, 2004).

Prior to this research the library supported blended learning by providing a link to the library platform which currently houses thousands of online journals and a few e-books on different databases such as; AGORA, Wiley Inter Science, Oxford University Press, Cambridge Journals Online, Oxford university scholarship, HINARI, Emerald, OARE, JSTOR and many others which students and staff can access and retrieve for future reference with the provision of getting a print copy (UCU, 2013a).

In an effort to better support blended learning this study attempted provide answers to the following research question: What online support services should be developed by the University Library in order to optimise the online component of blended learning initiatives at UCU? Several sub-questions were used to gain full understanding of the requirements for online support services. These are: What is blended learning and how does it differ from e-Learning? What is UCU's strategy regarding the implementation of blended learning? What is the current state of online learning support services provided by UCU library and its Affiliated Campuses? Is there a need for expanding the services at UCU? What further services could UCU and the libraries of its Affiliated Campuses develop to support online learning? What are the benefits and the challenges of online learning support services be to library patrons at UCU and its Affiliated Campuses? And how can the library strategise to overcome challenges and sustain online learning support services?

The methodology used to carry out the study focused on explaining the systematic ways used to solve the research problem of the study. The discussion under methodology covered the research design, research approach and the research strategies which were used to guide the study in exploring issues of developing the library services and products to support blended learning at UCU Main Campus and Affiliated Campuses. The chapter also discussed case study design, population of study, sampling method, data collection methods, data collection instruments, data quality control, data analysis; and ethical issues. This chapter ends with conclusion and gave an introduction to chapter four

The key findings resulted from the empirical study described in the methodology, was divided into two parts. The first part presents the findings captured, and the second discusses the findings against the backdrop of the literature review reported in Chapter 2. The researcher administered both questionnaires and interviews to collect data. The questionnaires resulted in feedback from 30 respondents. 20 of which were academic staff, and 10 librarians based at UCU Hamu Mukasa Library. This was with an aim of capturing new ideas about developing library products and services to support blended learning at UCU, and comparing them. The interviews were scheduled and administered to 20 Heads of Departments. They were selected as key respondents because of their roles in decisions making and planning for the University.

The findings were presented and discussed according to specific themes. The themes presented and discussed the description of respondents, technologies associated with online instructions, familiarity and access to technology to operate blended learning, and the proposed solutions to address the challenges faced.

The study concluded with specific research objectives designed within the context of blended learning to; identify UCU's strategy regarding the implementation of blended learning, explore the current state of online learning support services provided by UCU library and its Affiliated Campuses, identify the benefits and the challenges of online learning support services to the library patrons at UCU and its Affiliated Campuses, and formulate strategies to overcome challenges and sustain online learning support services. All these objectives were successfully achieved.

The study recommended that there should be skills trainings, support, technology, pedagogy and human factor.

Keywords: Blended learning, Online/e-Learning, library, academic and library staff, Heads of Department, Information Communication Technology (ICT).

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CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1   Introduction

This study endeavoured to capture the services that Uganda Christian University (UCU) library can develop to support the online component of the blended learning initiative (a collective phrase to refer to e-Learning in conjunction with face-to-face learning) at the Main Campus (at Mukono) and the affiliated campuses at Arua, Mbale, Bishop Barham Kabale and Kampala campuses. This study was initiated to determine the importance of e-Learning for the University and to establish how blended learning services can be supported by the library services at all UCU campuses.

1.2   Brief Background of UCU and its Campuses

UCU Main Campus (Mukono) was established by the province of the Church of Uganda in 1997, being settled in the former college of Bishop Tucker Theological College which has been in existence since 1913. UCU has been a Chartered University by the government of Uganda since 2004. Being a church-founded institution it is based on Christian morals to train and teach young adults. It was founded to deliver information through training in different programmes (UCU, 2013c).

The University has four campuses. These are described in more detail below:

1.2.1   Arua Campus

The UCU Arua campus is located in West Nile Region of North-western Uganda in Arua district. It started as a rural Trade School in 1959 and founded by the African Inland Mission (AIM) under Rev. Robert Booth as its first principal. Booth was a missionary from the United States of America and he laid the foundation of Ringli Institute as a Lay Readers' Training College in 1960s; training in Lugbara the native language. During the 1970s the course was taught in English and during the 1978 a full priest ordination course was started. After 25 years the

institution's name was changed to St. Paul's Theological College. By then, it had trained many Lay readers and servants from Uganda and the entire great lakes region countries include: Rwanda, Malawi, Democratic Republic of Congo, Burundi, Kenya and Tanzania. In 2003 the college changed its status to become a UCU affiliated college. This has allowed the campus to admit students for diploma and degree programmes in the wide range of programmes being conducted at Ringili during day, and evening programmes at Mvara Mission in Arua Municipality. The campus currently accommodates 585 students (UCU, 2013b).

1.2.2 Mbale Campus

Mbale campus is located in Mbale town opposite to St. Andrews community centre and the former Bishop Usher Wilson Theological College in Buwalasi, Sironko district. It was started in 2003 when UCU opened it up as the Eastern Campus in Mbale. It facilitates education needs in this region of Uganda and western parts of Kenya (UCU, 2013d).

1.2.3 Bishop Barham University College (BBUC)

BBUC was found in 1924 by Dr. S. Smith and L. Sharp who came to Uganda as missionary under the Christian Missionary Society (CMS). The setting up of this college was to train Bible teachers and lay readers in Western Uganda. However during the 1980s it became the Regional Theological College of the Church of Uganda for the South-Western Region. Due to its gradual development it was granted a status of constituent college of UCU in the Western Region of Uganda by the Church of Uganda Provincial Assembly (CUPA) in 2000. This status was ratified by the National Council for Higher Education (NCHE) in March, 2006. This constituent college is administered by 12 dioceses of the Church of Uganda; Muhabura, North Ankole Kigezi, North Kigezi, Kinkizi, Ankole, West Ankole, Rwenzori, East Rwenzori, Bunyoro-Kitara, Masindi-Kitara and South Rwenzori (UCU, 2013e).

1.2.4 Kampala Campus

Kampala campus is a campus which caters for working class students in the city of Kampala. It runs programmes mainly on evening sessions from 5:00pm to 9:30pm. The campus is located at

Talemwa Towers, Kabaka Njagala road at Mmengo in Rubaga Municipality-Kampala (UCU.2013f).

1.3　　Current State of Blended Learning at UCU

Blended learning support (also referred to as online learning) at UCU has just been conceived and it is in its initial stages at the Mukono (main) Campus. Currently the programme is conducted for a few foundation courses such as: "Health and Wholeness", and "Writing and Study Skills". Some professional courses such as Information Literacy, Information Systems, Television News Reporting, Fundamentals of Television, Introduction to Education, Organisation Development, Organisational Leadership and Empowerment will be conducted through blended learning.

In order for any lecturer to login on this platform he/ she has to register and get an account from the University's ICT Service Department. However the face-to-face lectures are still being conducted in conjunction with facilitation of online support. The platform for online services has a link to the library which currently houses thousands of online journals and few e-books on different databases such as; AGORA, Oxford University Press, Cambridge Journals Online, Oxford University Scholarship, HINARI, Emerald, OARE, JSTOR and many others which students and staff use to access and reference with the provision of getting a print copy (UCU, 2013a). Research needs to be conducted to establish how to improve the current service and embed the library into the online learning platform.

1.4　　Research Questions

The study therefore attempted to provide an answer to the following key question:

Which online support services should be developed by the Library in order to optimise the online components of blended learning initiatives at UCU?

Several sub-questions were also formulated to investigate and fully understand the requirements for online support services. These questions are provided below:

1. What is blended learning and how does it differ from e-Learning?

2. Looking at the available literature on blended learning: What are other libraries reported to be doing to support blended learning and is there a need for similar services at UCU?

3. What is UCU's strategy regarding the implementation of blended learning?

4. What is the current state of the online learning support services provided by UCU library and its Affiliated Campuses?

5. What other services could UCU and the libraries of its Affiliated Campuses develop to support online learning?

6. What are the benefits and the challenges of online learning support services to the library patrons at UCU and its Affiliated Campuses?

7. How can the library strategise to overcome challenges and sustain online learning support services?

1.5   Scope and Limitations of Study

1.5.1   Scope of the Study

This study considered literature to gain an overview of the possibilities of the study and to select the reasonable scope which fulfilled the study. This study (on developing library initiatives to support the online learning component at the Main Campus-Mukono and affiliated college campuses; Mbale, Arua, Bishop Barham and Kampala university college UCU) was conducted from September to November, 2014. The study was conducted at Main Campus of UCU, Mukono as well as the Arua, Mbale, Bishop Barham University College and Kampala campuses. The purpose of this study is to understand the UCU management's stand on blended learning. It was also to investigate whether all budgeting, technical and administrative aspects have been

considered. Finally, it advised the library on the initiatives it should take to fully embed in and support the UCU blended learning initiative.

1.5.2   Limitations of the Study

The study focused only on initiatives or activities that the library could embed to support our blended learning drive within Main Campus and the affiliated college campuses of UCU.

Several factors, such as lack of sufficient financial resources, working materials like stationery, and due to the limited time available for the study, influenced the choice of the target population. The research target population was limited to only UCU and its affiliated college campuses staff academics, librarians and Heads of Department.

1.6   Justification for the Research

It was anticipated that the study would be useful to UCU. The study was expected to improve the management and operation of the e-Learning system. It will identify the benefits, weaknesses, strategies and threats for improvement of the blended learning initiatives that the UCU libraries can initiate.

The research was sought to benefit the academic staff, librarians, students on campus (diploma, undergraduates and post- graduate candidates), administrative officers and Information and Communication Technology (ICT) support staff. This would simplify the student learning activities while also simplifying and making more efficient the activities required by academic and support staff. For students there should not be wastage of time and transport fees to gain access to content. Changes in climate should also not hinder them accessing services on time. Academics and library staff should also be more efficient in the way that they make their services available.

To help UCU adopt and use e-resources more than the face-to-face learning strategy, UCU and its affiliated college campus libraries are currently unable to continuously and consistently follow the normal progress of the learning for students through the traditional system of face-to-

face learning. The libraries adopted e-resource services in 2012 - which are not sufficiently utilised. It was anticipated that this research project would help list all the burdens to be overcome before the UCU would have a fully functional blended learning initiative.

The findings and recommendations of the study would be useful to the library and university administrators and stakeholders. They would not need to rely on haphazard personal experiences, subjective judgements or the traditions in their management tasks. They would be able base their decisions on reliable information regarding the issues identified. This would improve the internal efficiency and help in advancing and re-inventing the libraries of UCU and the affiliated college campuses.

1.7 Literature Review

Literature on the support of e-Learning and blended learning initiatives is abundant. In most of the studies reported, the ICT context is not similar to that experienced in Uganda. It has therefore been decided to also take that aspect into consideration when reviewing the literature. Similarly the shortage of appropriate skills may influence the conclusions arrived at and the recommendations made after the research has been completed. The following relevant topics were identified. Some of these will be discussed in more detail in Chapter 2 of this report.

1.7.1 Brief Background on Information Communication Technology in Uganda

Today information technology transformation and advancement is changing all aspects of human activities and living, especially in the use of bandwidth or broadband space. The same changes and developments are gradually growing in libraries that have adopted the use of online services, developing initiatives to meet the needs and requirements of their patrons. Online services are replacing what traditional libraries tasks used to carry out to provide efficient work of reasonable quality (Gruca, 2010).

In Uganda, amidst economic and political challenges, the country is experimenting different initiatives to ensure the availability of ICT services for lifelong literacy. It has reported with

varying degree of success. Since 1994 the telecommunication services in Uganda were managed by the Uganda Posts and Telecommunication Corporation (UPTC) which was the only government body that owned and provided telecommunication services in the country. However by 1997 the Uganda Communication Act was endorsed and passed by The Parliament of the Republic of Uganda which lead to birth of Uganda Communication Commission (UCC). Its started operating in 1998 (ITU, 2001). Since then it has become easier for universities to consider providing online services. Online services have implications for skills development but also hold several benefits. Blended learning, which addresses both the skills and the essential support services required, is a first step towards the full implementation of e-Learning activities. The following sections address the issues that need to be kept in mind when doing research into the library's blended learning support services.

1.7.2   Online skills

Studies focusing on the drivers of successful e-Learning initiatives generated similar results. For example one study established that students' computer anxiety is one of the critical factors that reduced their e-Learning experience satisfaction rate (Sun *et al.,* 2008). Another study, in Japan, concluded that when students' online skills were of an acceptable standard it could be predicted that there would be satisfaction with e-Learning (Bray, Akoi, and Dlugosh, 2008).

1.7.3   What is e-Learning?

Three authors state the following regarding e-Learning:

"E-learning is the learning and teaching facilitated online through network technologies" (Garrison and Anderson, 2003).

"*E-learning can be defined as the use of computer network technology, primarily over an intranet or through the Internet, to deliver information and instruction to individuals*" (Rosenberg, M. J. (2001).

"*E-Learning is the use of telecommunication technology to deliver information for education and training*" (Katz, 2000; Katz, 2002).

The researcher agrees with these definitions as they all indicate that e-Learning requires network connections so that students/ learners access the learning content and services required for their studies without moving from their work stations.

1.7.3.1   Implications of e-Learning to the Patrons

According to (Kalat, 2002) the following actions contribute to the success of any e-Learning programme:

- Patrons have to be provided with feedback so as to monitor their operations and take corrective action if required. For example at UCU students and academic staff both will be able to receive awareness on the progress of academic activities such as assignments scores, research reporting
- Learning needs to be promoted in the sequence of simple complex, known to the unknown and knowledge to application, where by students and academic staff do not have a problem in capturing required learning materials
- Clients have to be informed about the explicit outcomes of the learning task so that they can set expectations and judge for themselves whether or not they have benefitted from the e-Learning lessons and services. At UCU students when they are informed about their tasks earlier it simplifies their learning
- Patrons must be tested to determine whether or not they have achieved their learning outcome. Online testing or other forms of assessment should be integrated into the learning sequence to check the learners' achievement level and to provide appropriate feedback.

1.7.3.2   Potential Benefits of e-Learning

Aydin and Tasci (2005), Cronje and Vorster (2004) have identified some of the benefits of e-Learning as listed below:

- Reduced training time, as more duties would be achieved by use of visual and audio material/ content;
- Reduced costs of instruction over time - depending on the economic situation of the environment;
- E-Learning can cover a wider range of audiences by reaching out to the masses or general public;
- E-Learning leads to different modes of service delivery and distribution of services that is online, face-to-face or even offline;
- There is a potential to re-use content especially when content is packaged in smaller learning objects;
- E-Learning leads to the utilisation of current and advanced technologies; and
- Flexibility in terms of availability because services can be approached and utilized anytime and anywhere.

In relation to the findings of this study academic staff are so much interested in promoting e-Learning though challenges such as network problems, low internet bandwidth are some of the hindrances.

1.7.3.4 Potential Disadvantages of e-Learning

There are also disadvantages to e-Learning. Melicherikova and Busikova (2012) identified the disadvantages are listed below:

- Lack of motivation: e-Learning requires enough time in order for those who have interactive collaborations and assignments to complete the tasks. Therefore students need to be highly motivated and responsible due to the fact all what they perform belongs to them. This will be a challenge to students with low motivation skills to be able complete modules.
- Software problems: Software compatibility and the issue of learning new software for e-Learning programme utilisation is not an easy task for learners at 'beginner' skill level. It can seem complex to keep track of their computer files and how to organise these files.

The files can also get disorganised, saved in an incorrect folder or saved automatically by the computer – all of which will cause the learner to waste a lot of time finding this file.

- Typing and online communication skills: Students should have adequate typing and communication skills in order to cope with the e-Learning process – which is usually a text-based and self-paced programme. When students are used to being in a structured and scheduled environment it will be a disadvantage as many will get confused and be left behind without understanding what is being taught at that moment.

- Infrastructure: Students may lack efficient and enough technologies, resources and communication infrastructure.

- Skills level of the instructors: In some cases the instructors lack good ICT skills to conduct the modules.

- Personal contact: Some student may prefer a personal explanation - especially when it comes to practical topics and modules

- Security issues: There is personal relation among students and instructor as well as lack of sufficient security.

In relation to the findings of the study respondents pointed out cases of motivation and training, poor internet coverage which has made it hard to promote e-Learning at UCU.

Two further disadvantages were traced. These are the following:

- Isolation: Some students may feel isolated and not supported while learning. When instructors are not always available to help the students they lack the discipline of working independently without any assistance. They may also become bored when there is no interaction (Dziuban, Hartman and Moskal, 2004).

- Inappropriate tools: According to Burbles (2004) there are "hidden barriers to access" of a virtual classroom. The communication tools (such as audio streaming) may not be suitable to some students while others may not hear what the instructor is teaching or will not hear opinions from their fellow students. Thus they fail to access and attend online classes.

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1.7.3.5   Educational, Social and Pedagogical Values of e-Learning

The major values of e-Learning to education are noted below:

- There is a great linkage between e-learning and lifelong learning opportunities
- E-learning seems to cater for learners with interests and learning capabilities
- It would also influence the quality of learning and teaching delivery, when it is considered with the discipline of face-to-face lecturing approach.
- The learning notion which is also flexible with regard to the locality and the period aspect which allows more students to participate in learning at their own convenient time (Masoumi, 2010)

In relation to the study there has not been enough educational training to promote e-Learning at UCU.

1.7.3.6   e-Learning Systems

Rapid application and development of information technology has also led to significant changes in education and training technologies. For e-Learning to succeed, the smoothness of the course transmission process and the information technology infrastructure are very important to ensure an effective e-Learning system (Selim, 2007). Selim also tested and verified the key factors for successful e-Learning systems. The two most important factors are: ease of use and the trustworthiness of the Information technology. However, Pituch and Lee (2006) investigated factors such as functionality, interaction and response and these factors also will have a positive influence on the actual utilisation and confident use of e-Learning material. Similarly Liaw, Huang and Chen (2007) have emphasised that the quality of the e-Learning system has a positive effect on the lecturer's use for and enjoyment of the e-Learning content. Self-efficacy (such as the behavioural intention to employ e-Learning, how to demonstrate the important system and the quality of the pedagogical) contribute to lecturer's proper use of e-Learning.

Piccoli, Ahmad, and Ives (2001), in turn, indicated that there are framework factors which influence e-Learning. These factors are technical quality, efficiency and trust-worthiness and complete course content. The functionality of the system includes interaction, response, interface design and this forms flexibility of the course content and constitutes a crucial set of factors to effectiveness of the students and employees.

In relation to the study at UCU there is a Moodle system which has not been used fully due to ignorance and failure to publicise it to the University community.

1.7.3.7 How to Sustain e-Learning in an Institution

Callan and Bowman (2010 p.11) discuss that when implementing sustainable e-learning you have to; "…build organisational cultures, systems and work processes that support innovation and the work of champions and their e-learning adopters"

Therefore they state that the following issues have to be taken into consideration:

- New trends and available opportunities within and outside the institution.
- Team work - is it is crucial for innovation purposes.

According to the findings from the study (see Chapter 4), the heads of departments are willing to support, promote and implement e-Learning at UCU, by supporting the budgets for this phenomena and lecturers who are willing to promote the service.

1.7.4 What is Blended Learning?

The following paragraph contains the opinions of several authors defining what blended learning is: This is the learning facilitated by the effective combination of different modes of delivery, models of teaching and styles of learning and applying them in an interactively meaningful learning environment (Clayton, Heather and Horn, 2012). Blended learning is also the combination of different training media such as technologies, activities and types of events

which are used to create an optimum training program for a specific audience (Bersin, 2004). Moore, (2006) states that blended learning; "*is the supervised correspondence study combined with face-to-face learning, represented by application of supervision component with the correspondence, paper-based print content*". Picciano (2009) went further and identified blended learning broadly as "some nebulous combination of online and face-to-face instruction". "Blended learning combines training, coaching, and self-help" (Davies, 2003).

From the section above it is clear that it is not easy to give a clear definition of blended learning except that it is possible to say that blended learning is a mode of teaching that captures both online and face-to-face instruction. Both electronic and print materials are used to aid instruction.

1.7.4.1   Benefits of Blended Learning

Alonso et al. (2005) identified the following advantages to making use of blended learning: Blended learning offers institutions with an opportunity to engage in using technology in conjunction with the more traditional delivery.

It provides institutions with an opportunity to embrace development in technology and this encourages the institution to support active and meaningful learning.

Blended learning offers use of multiple teaching styles that is lectures, action learning activities, demonstrations within the lecture room and this accommodates students' attention hence differing learning styles and enhancing the learning experience of the students (Garrison and Kanuka (2004) identified the same advantage).

Comprehensiveness; it provides learning events from many sources hence enabling the learners to select a favoured format or learning method. It encourages collaborative interaction because people learn from one another and blended learning connects students with colleagues and experts both within and outside the institution. You get all the learning services when you need them. It is dynamic whereby you meet experts online; get the best sources and fast access to information for quick reaction.

In relation to the study majority of the respondents were using social networks and online communication well.

1.7.4.2.   Disadvantages of Blended Learning

Expertise is required. Blended learning systems will not create learning strategies and instructional technologies for researchers and instructors who are unfamiliar with the system. For example to develop a web-based tool requires expertise in programming languages such as JAVA, SQL, HTML and use of a web site designing tool such as Dreamweaver.

Developing blended learning content can be resource intensive. Resources like time, money (to buy equipment such as software and hardware), and experienced trainers will all be required to develop the system. This may serve as a potential disadvantage for some institutions with limited resources (Cucciare, Weingardt, and Villafranca, 2008).

When the instructor does not participate in person class members (peers) can make the delivery of content boring.

The presentation of materials sometimes is fragmented and it is therefore difficult to acquire a holistic picture of the learning process.

Blended learning has no universal standards for content development and so the purchasers cannot easily match offerings from different providers with the learning system.

In relation to cases of poor network and breakdown of the Moodle system where pointed out, which has burdened the academic staff to continue with blended learning.

1.7.4.3   Goals of Blended Learning

Osguthorpe and Graham (2003) identified the following as the purpose or goals of blended learning:

1.7.4.3.1   Pedagogical Richness

It permits faculty and the institution to change the way they conduct lectures. Swain (in Osguthorpe, 2013) states that; "This has completely changed what I do in class, I used to spend time dispensing information. Now they get that online, and we can go deeper in class than ever before". For this matter lecturers may employ blended learning for different set of reason and purpose could drive all the motives to improve students' learning.

1.7.4.3.2   Access to Knowledge

This will encourage lecturers to use blended environment to increase accessibility to information for their students. For example it will describe a web-based set of resources of teaching initial instructions to design skills for the best mode of learning, and students would be able to access all the necessary information towards their modules.

1.7.4.3.3   Social Interaction

Learning is a mode of social interaction. Students are able to share questions, experience and insights hence acquiring experience of higher level of mastery. Being distance delivery system of learning when it is built with blended environment it enhances the possibilities of both face-to-face and online learning.

1.7.4.3.4   Cost Effectiveness

Blended learning environment offers reduction in costs and this is argued with proponent to reduce time in class, paying additional tuition for students hence allowing them to enter an institution to fill the vacant seats left by those who spending part of their time learning online. It also offers the possibility of replacing full-time lecturers and students get involved with less expense of part-time lecturers and students.

1.7.4.3.5   Ease of Revision

Due to the fact that most blended learning systems are developed by lecturers, it means that online resources will be accessible easily. This is because the courses will relatively be simple, and easy to change. There will be no sophisticated programming to access the services. For example responding to students questions and comments is conducted smoothly and due to blended system it has the potential to create a good learning atmosphere which is flexible, spontaneous and responsive (Osguthorpe and Graham, 2003).

With the above literature overview as background the research methodology that was followed is discussed in detail in the next section.

1.8   Research Methodology

1.8.1   Research Design

This study was qualitative in nature.

Qualitative research is where the researcher is interested in understanding the meaning people have constructed and how people make sense of their organisation or society and the experience they have in the institution or organisation (Merriam, 2009).

Qualitative research is also the situation where the activity is located to the observer in the organisation. This will consist of a set of interpretive, material practices which makes the organisation visible and this practice transforms the organisation and it turns the series of representations, including field notes, interviews, face-to-face conversations, recordings, photography and self-written memos (Denzin and Lincoln, 2011).

In most cases qualitative research involved an interpretation and naturalistic approach of the services delivered in the organisation. And the researcher was able to study the environment in its natural setting, attempting to make sense of the finding by interpreting the terms in their phenomena to identify the meaning over what the respondents are trying to present after interrogating with the researcher though the interview and attending to his questionnaires.

According to the study, it appears that academic staff do not appreciate the blended format. It is not yet acknowledged that the blended format of learning enhances participation of students and also draws them nearer to the instructor. Students who are weak and slow as well as fast learners could easily be accommodated in the same class. It is not accepted that this is how they could improve their academic results. Similarly the flexibility, were students and the instructor can both achieve their goals even if there is a geographical barrier, is not being acknowledged.

Typical data collection instruments used when doing qualitative research are surveys, questionnaires, interviews, and focus group discussion schedules. This study made use of interviews and questionnaires. These are discussed in some detail below.

1.8.2   Data Collection Methods

The study used questionnaires and interviews as the main tools for collecting data. The selection of these tools was guided by the nature of data, the time available the objectives of the study. The overall aim of this study was to identify library initiatives that could be developed to support e-Learning, and the researcher was mainly concerned with the views, perceptions, feelings, opinions and attitudes of respondents towards blended learning.

1.8.3   Questionnaires

A questionnaire is a series of self-administered written questions a researcher supplies to his or her respondents, requesting for their response. They are administered through posting to respondents requesting them to complete and return a completed sheet.

Basavantappa (2007, p. 333) is of the idea that a questionnaire is a document sent via mail to informants to be answered as specified in a covering letter and the schedule is then completed by the research worker who interprets questions when necessary.

Data collection was done through the use of questionnaire which was relatively cheap since the researcher spent more time on preparing the questionnaire and mailing them to the respondents. There is no need of involving a field staff, the success of questionnaire lies more on the quality of the questionnaire itself and this gave the basis of success for the researcher.

Questionnaires were used since the study was more concerned with the variables that cannot directly be observed such as opinions, attitudes, perceptions, and feelings. The sample size was quite large 50 respondents were targeted. The respondents were sub-divided as follows: 10 Librarians, 20 Lecturers and 20 Heads of Department. It was anticipated that, when given

enough time, questionnaires would be the ideal tool to collect data. The predicted target population was largely literate and it was unlikely that difficulties would arise in their response to questions.

1.8.4   Interviews

An interview is the personal interaction where cooperation is essential. These are a series of questions a researcher addresses in person to the respondents.

This is a method of collection of data in which an interviewer asks question to another person (Interviewee) conducted by face-to-face interaction or by telephone contact (Polit and Beck, 2006).

These were conducted with University Librarian, Deputy Vice Chancellor Academic Affairs (DVC.AA), Deputy Vice Chancellor External Relations and Development (DVC. ER&D), Director Teaching and Learning, Director Planning, Director Finance, Deans of Faculties, and Affiliated College Principles. A total of 20 respondents were involved.

1.8.4.1   Structured Interviews

This is a list of questions asked and answers are recorded on standardised schedule. The content and procedures are organised in sequence and the wording of the questions are mainly determined by the scheduled procedure. The interviewer has no option to make changes to the questions during the interview.

1.8.4.2   Unstructured Interviews

This is an interview which is open and having greater flexibility and freedom. Research questions determine the questions to be asked, their content, sequence and wording are entirely

left to the interviewer (Akbayrak, 2000). An unstructured interview is used when the researcher needs the freedom to make changes to the questions - depending on the response of his respondents. This helped the researcher to capture the necessary data to achieve the study components.

1.8.4.3 Semi-structured interviews

A semi-structured interview refers to the guide used so that information from different interviews is directly comparable (Guthrie, 2010). This allowed flexibility to vary the order of intervening questions to provide a natural flow. It provided coded closed-response questions such as (did you find the library services useful to support your learning? (YES/NO) and it also considered the open ended questions such as "why?"). This made the interviewer's duty easier in getting a better understanding of the respondents' ideas.

Semi-structured interviews were used for gaining input from the University Librarian, Deputy Vice Chancellor Academic Affairs (DVC.AA), Deputy Vice Chancellor External Relations and Development (DVC. ER&D), Director Teaching and Learning, Director Planning, Director Finance, Deans of Faculties, and Affiliated College Principles. Since the study was more concerned with the variables that cannot directly be observed such as opinions, attitudes, perceptions, feelings and others, and such information can easily be collected by the use of interviews. The sample size of 20 was quite small, but given the time, it was the ideal tool to collect data. The predicted target population was largely literate and it was unlikely to have difficulties to respond to the Interviewer.

1.9 Target Population

This refers to the population that the researcher wishes to study - the population about which the researcher wishes to make a generalisation (Basavantappa, 2007, p.190).

The researcher targeted librarians, academic staff and Heads of Department. This population was targeted because they are the decision makers, and practitioners of the blended learning programme.

1.10   Sampling

This study employed purposive and snowball sampling to select a sample size of 70 respondents. Respondents were distributed as follows: 10 Librarians, 40 Lecturers, and 20 administrator respondents comprising of the Deans of Faculties, Affiliated College Principles, University Librarian, Deputy Vice Chancellor Academic Affairs (DVC.AA), Deputy Vice Chancellor External Relations and Development (DVC. ER&D), Director Teaching and Learning, Director Planning, and Director Finance, from UCU Main Campus and affiliated college campuses. The first group received questionnaires while the administrator group were interviewed. This targeted population totalled up to 70 respondents.

1.10.1 Purposive Sampling Method

Purposive sampling method was used to select the Librarians, academic staff and Heads of Department the category of respondents who were included in the sample.

In purposive sampling method, the researcher decided who to include in the sample. It was used to collect focused information from the population that shares similar characteristics and responsibilities. This ensured equitable representation of the population in the sample. The researcher was convinced that the target population would not be uniform since they are all on different levels of administration and different faculties or departments. Purposive sampling was therefore used to select useful information. It saved time and money.

1.10.2 Snowball Sampling Method

Snowball sampling method is where the researcher uses a social network. The fact that colleagues tend to have similar characteristics to trace difficult subjects, it was used to collect focused information from the population which is difficult to trace, in order so as to ensure equitable representation of the population in the sample. For this study part time academic staff, who are contributors and who were not easy to identify at the start of the research, were identified during the interaction with fellow fulltime academic staff.

1.11 Analysis of Data

Analysis of data is the separation of data into constituent parts or the examination of data to distinguish its component parts or elements separately and in relation to the whole (Oso and Ono, 2005: 92). The researcher described how he would reduce the field of information or data to a usable size. The researcher will apply inferential method of data analysis. Inferential data analysis was used to draw conclusions concerning the relationships and differences found in research results. This was done using the correlation technique.

1.12 Correlation Technique

Correlation was used to analyse the data. Correlation is a measure of the degree of association between two or more scores or between two or more variables that have been obtained from the same group of subjects (Oso and Onen 2008:96). Correlation was used because the data that the researcher intended to collect which had more than one variable and at different levels which was basically grouped into perceptions, feelings, attitudes, opinions and views of different respondents on the effect of e-Learning at Main Campus-Mukono and affiliated college campuses of UCU.

1.13   Value of the Study

The research worked as yard stick to help the library capture new ideas which can be adopted to develop and embed the blended learning support services that should be delivered to the users

This study would help the University Information and Communication Technology (ICT) services (UIS) department to find out people's opinions and views regarding blended learning services. This was the basis for the further research to be carried out on e-Learning in an academic environment.

1.14   Clarification of Key Terms and Acronyms

For the purpose of this study the researcher has associated the meaning of each term as indicated below:

Blended Learning: This is the formal education conducted when students learn through online delivery and also face-to-face classes for some time.

e-Learning: For the case of this study e-Learning is the online teaching and learning which is conducted by use of the internet for connectivity to remote learners. This learning is supported by the application of Information and communication technology.

Information and Communication Technology (ICT):   This refers to the application of computing services, by means of software and hardware equipment, to deliver information and to communicate in the form of text and audio-visual formats, via the internet (through different networks) and through the use of e-mail services, mobile SMS and MMS and fax services with the help of devices like computers, mobile phones, IPods and other gadgets.

Institutional Support: This can be termed as the support from the institution in form of human and physical support, financial, decision and individual support from individual level. Therefore this support will be needed to champion the implementation process of e-Learning at Main Campus and Affiliated Campuses.

1.15   Conclusion

This chapter provided brief backgrounds to the area of study. It also addressed the research questions, scope, and limitations of the study, justification of the research and an overview of the most important literature. The chapter also addressed the research methodology and indicated the target population, the sampling techniques as well as the instruments which were utilised to gather research data, and the value of the research.

CHAPTER TWO: LITERATURE REVIEW

2.1   Introduction

Blended learning is becoming an increasingly important mode of education delivery in institutions of higher learning (universities) because of the new and improved capabilities in technology and advances in software and hardware equipment. Hardware has become very portable (mobile) in terms of communicating with and connecting people to various sources of information and data – also learning content. However, to fully understand what blended learning is it is first necessary to place it in the broader context of teaching at Institutions of higher learning.

This chapter focuses on reviewing relevant literature, which as Pan (2008) indicated is an original piece of work based on the critical examination of the literature on a topic. Literature review usually takes a broader perspective to ensure that research does not repeat/ rediscover knowledge that has already been reported (Fisher *et al.,* 2007).

This chapter specifically focuses on the modes of teaching (blended learning, face-to-face learning, and e-Learning). The benefits and challenges of each of the modes are discussed in some detail. The historical development of online learning in African Universities was investigated and the case of online learning at Kenyatta University is provided in some detail. Similarly the performance of the African Virtual University (AVU) in Kenya is also discussed. The role that academic libraries and librarians can play in all three modes of teaching and the implications of providing library support to each of the modes are discussed in some detail. This chapter concludes with the recommendations from literature regarding the products and services libraries and librarians can apply to improve blended learning. Lastly a brief summary of the chapter is provided.

In this 21st century generation of advanced technology there are two approaches in the education sector worldwide today the modern and postmodern which have assimilated into the higher education institutions to keep education motivated. In the modern approach education delivery is centred at one point while the postmodern approach has lead students and their demands with interest fast and centred at both face-to-face and online learning. Education in this digital era has

centred the student and teacher hence bridging both parties and promoted information sharing Uzun, 2012).

Learning is for anyone, anytime, anywhere hence leading to lifelong learning and distance learning forming part of the virtual education forum. Therefore education is bearing transition from modern to postmodern education system (Uzun, 2012).

2.2   Difference between Learning and Teaching

Learning is the process of acquiring knowledge through reading and studying (Cunningham and Hillier, 2013). It is the act of combining/ synthesising new knowledge with that which already exists to change behaviour, develop new skills and adapt values.

Learning could be regarded as either formal or informal. Informal learning is seen as learning related to the understanding of knowledge or skills outside a specific educational curriculum of the institution. Informal learning also does not refer to workshops and courses offered at academic and training institutions. Formal learning is where a more organised and structured nature of learning takes place with goals and objectives and is conducted either in a physical classroom or virtual spaces. Learning is encouraged through formal qualifications but also workshops, seminars and internships or traineeship experiences (Cunningham and Hillier, 2013).

Learning can be experiential, auditory and/ or visual. Each of these in more detail below:

- Experiential learning is an interdisciplinary approach which relates education, management and psychology. It implies an holistic process of action based on people or group's experience (Bevan and Kipka, 2012). It can also be defined as learning achieved by the application of experience or learning by doing (Valkanos and Fragoulis, 2007).

- Auditory learning is where learning is based on verbal lectures, talking and listening to each other, discussion to hear what others have to say. For this type of learning tone of voice, speed of talking and voice quality are important factors (Virtanen, Myllarniemi and Wallander, 2013).

- Visual learning is the learning which developed by seeing/ reading and also having an integration of other sensory experiences which helps the learner to visually interpret visible actions, symbols, man-made or natural, objects which he or she visually witness in his or her environment hence being able to appreciate and comprehend the network of visual communication (Harris, 2013).

Teaching is the establishment of a relationship among three focal issues in education; the teacher, student and subject matter. It is a complex of art guiding students with a variety of experiences selected towards attaining appropriate teaching-learning goals. It is further described as the process which brings up teachers, students and subject matters together for a common objective (Aggarwal, 2007). In the next stage the researcher will explain face-to-face learning, e-learning and blended learning.

2.3   Teaching styles

2.3.1   Face-to-Face Learning

This is the mode of learning where traditional lectured instruction is dominant. The instructor dominates classroom activities and student interaction is very limited (Ocker and Yaverbaum, 1999). Face-to-face learning is where learners are given an assignment or class work with instructions on how to complete it and by the state they have to finish the assignment in and the time frame. It also involves diagnostic tests which are constructed to examine the materials or disciplines which have been covered in specific topics or lessons (Halabi *et al.*, 2010).

2.3.1.1   Implementation of Face-to-Face Learning

The implementation of face-to-face learning in an institution needs to take note of the following issues:

- The roles, which are needed to deliver the required services to support face-to-face learning, have to be defined. The institution and its information process needs proper coordination between faculty members and students to combine them together for effective learning.

- Self-organising mechanism can be organised whereby courses which are offered at one university can be transferred by the same instructor to another university without changing the mode of service delivery. This is possible when the faculty employees lecturers who can rotate locally in all the university campuses to deliver face-to-face lectures.

- Faculty deans could create a 'synergy committee' where faculty staff of every programme can meet to evaluate the performance of new students (first year joining university) and these reports of performance can act as guides to report to the university senate on how to modify and deliver courses to promote and increase on their performance

- Lecturers are knowledge transmitter and for this matter they develop topics in class, propose questions and problems to guide students in building their own knowledge in class and students for this matter are players of the learning process not passive (Reyes, 2012).

Face-to-Face lecturing does not necessarily happen in the absence of technology. Introducing technology tools, which are powerful, may simplify a lecturer's work in class. One example is to introduce a digital white board which allows the lecturer's computer to be directly projected onto the board (Reyes, 2012).

Instrumental competences where it requires capabilities of handling the ideas and manual skills that is language, physical skills which would include planning strategies, technological and linguistic communication that is; oral and written skills, both the lecturer and students must be able to learn effectively and take over their own responsibilities to use the academic skills such as; argumentation, analysis, adoption of learning strategies, plan and work towards long-term goals, purposely reflecting on their learning (Gvaramadze, 2012).

Interpersonal competences to develop relational and personal ability to express feelings and emotions to be able to work in groups towards a common goal and also foster social cooperation and interaction (Gvaramadze, 2012).

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2.3.1.2   Benefits of Face-to-Face Learning

Meyer (2003) identified the following benefits of face-to-face learning:

- Competition; it is a good venture where students have an opportunity to compete for time in class to display their knowledge to each other and the teacher which leads to generation of ideas and face to face sharing.

- There is more sense of leadership and instruction from the teacher.

- There is an opportunity for verbal discussion however much it is an impermanent mode.

- With time members in a group can meet on starting time and stop at suggested time, with strong sense of group work, group members can leave after the meeting, it is easy to control time and deadline is adhered too for assignments regulated.

- There is constructive model of learning and teaching of which information is passed and shared among different minds.

2.3.1.3   Challenges of Face-to-Face Learning

Poor decision making by managers in the face-to-face learning is one of the challenges facing face-to-face learning (Griffiths, 2013). There are poor planning structures which are created and this leads to poor performance which develops due to poor design of the learning structure and the all blame is on teachers who carry out daily instructions they have been given by their managers, then play them consequently to take action and ignore the best role hence leading to worst performance. And also the computer based technology has confused many to change their equation so as to enable them and their educational managers to increase on the means of face-to-face performance in the technology environment to extend services to the users.

Confidence and self-efficacy is someone's individual judgement with ability to execute services with required behaviours (Giallo and Little, 2003). Therefore self-efficacy and confidence of teachers can lead to either good decision making processes. This is where someone is expected to

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perform a behaviour or skill and task with a belief to produce good results. Confident teachers will maintain students attention and perform academic activities effectively than those who are less confident about their service delivery and this can lead a class to be stressful, employing less effective strategies to manage the class, so less confident teachers are most likely become threatened by misbehaving, use of inappropriate management methods, fill that students are difficult to handle and not teachable.

To share about preparedness in face-to-face, this implies that teachers who are not prepared is a challenge because it is essential in the development teachers to be prepared to execute services and this has lead to unimproved academic delivery during face-to-face learning (Giallo and Little, 2003).

There is poor classroom management due to the fact that it determines the effectiveness of teachers and quality of teaching with students learning in face-to-face learning, poor classroom management can lead unsupportive and unfriendly environment in a classroom and students will feel unsafe, disrespected, not cared for and insecure. Ineffectiveness leads to poor cooperation, indiscipline and irresponsibility for both students and teachers, so failure to plan practically can lead to problems, such as disruptions, deviant behaviours (Ahmad *et al.,* 2012).

The all structuring of classroom neatness and cleanness in face-to-face learning each class must have a non-threatening atmosphere. The physical management of the classroom is closely related to student's behaviour towards, classroom management is an organised space, time and materials which can facilitate effective teaching, therefore it is highly difficult task for teachers who are not organised and this brings individual differences among students due different interest and choices (Ahmad *et al.,* 2012).

There is no competency the face-to-face learning with teachers who are not competent it is prone to problems in teaching and indicates a class with unreasonable study furniture, poor approach to students by question examination, poor establishment of rules, communication is poor to students, all this affects the physical determination of classroom and affects students participation at all levels (Ahmad *et al.,* 2012).

Poor communication will also determine a degree of achievement between teachers and students and the response towards questions and assignment will deteriorate hence affecting the mutual understanding of the different concepts for students (Ahmad *et al.,* 2012).

2.3.1.4   Roles Libraries Play in Face-to-Face Instruction

Li, Leung and Tam (2007) and Choy (2007) were used to establish the following roles that libraries play in the face to –face world:

A library is the base and collection of all information resources and materials. It will also have the knowledge base which would include all the institutional and contextual elements to help users to gain information for individuals.

The following roles are played by libraries in face-to-face instruction:

Libraries carry out selection of information which is a continuous duty to search for updated information to meet the needs of the users. This is done by adding value to the collection by classifying, cataloguing, maintaining access to information materials and also helps users to exploit and utilise information to resolve problems of the reader and also create a new insight and acquire new knowledge and skills. Therefore the library tries to develop reference services to help its users to utilise and exploit the library collection hence changing the environment of the users and increasing their knowledge base (Choy, 2007).

The libraries in face-to-face environment have a role of rising and sustaining high literacy standards in the institution to promote the reading culture. Reading is very fundamental, so the library has a significant role to collect and promote the reading of print materials for its users.

Librarians have the opportunity get actively involved in outreach and promotion. This is so as to convince their users of the benefits of the services and information materials. In order to make them effectively utilised, the library resources.

In face-to-face instruction libraries spend large budgets to buy materials so as to facilitate the services such as reference materials, circulation services, library registration etc.

Librarians develop useful skills and knowledge to get experience in applying good information technology skills. They guide end users on conducting searches using different databases, understanding the information industry that is; publishers, book vendors and printing houses. They are also familiar with copyright laws as well as intellectual property rights so as to deliver the right information to their users.

Libraries help to transmit and preserve human knowledge. Hence, offering feasible solutions to researchers and academic scholars. (This is a 'must have' in the face to face instruction environment.)

Libraries extend their duties and services to host the useful institutions of knowledge so as to increase the use of their collections.

Users in traditional libraries can have full access to thousands of print materials, such as books, which individuals can hardly afford to buy on their own.

In the traditional library there is good collection which is not haphazard, but systematically built-up and well sorted out, resource.

Librarians apply a criteria of social, culture and collective values to promote the utilisation of the collection and help users to reduce their efforts to identify and find appropriate resources to utilise.

Preservation of information materials is ideal, every information material such as print periodicals, text books are kept safely in the library for access all the time and this knowledge base is kept collectively to memorise the past and current information

Libraries in traditional setting are expected to consider attention to find and retrieve information for the users.

Libraries provide content to the students and teachers in abundance with equal access to the all content.

Libraries are navigators on behalf of their users to build up skills and experience. As navigators of information around the globe they create new services to their total existing package.

Reference librarians collaborate with faculty and deliver face-to-face instruction in the utilisation and evaluation of information sources within the context of different disciplines and/ or subjects.

Reference librarians could teach students/ candidates on how to cite information sources. They could also assist them to acquire skills to allocate and evaluate the necessary information resources depending on the user's needs.

Reference librarians will also train and teach users on how expand on their knowledge base in face to face instruction.

2.3.2   e-Learning
Three authors consulted state the following regarding e-Learning:

"E-learning is the learning and teaching facilitated online through network technologies" (Garrison and Anderson, 2003).

"*E-learning can be defined as the use of computer network technology, primarily over an intranet or through the Internet, to deliver information and instruction to individuals*" (Rosenberg, M. J. (2001).

"*E-Learning is the use of telecommunication technology to deliver information for education and training*" (Katz, 2000; Katz, 2002)

The researcher agrees with these definitions as they all indicate that e-Learning requires network connections so that students/ learners could access the learning content and services required for their studies via the Internet without moving from their work stations at remote locations.

2.3.2.1   Implementation of e-Learning

Before e-Learning could be implemented in an institution the following aspects need to be considered:

2.3.2.1.1   Technology

e-Learning can progress well and simultaneously when the rate of technology matches with the current advancement in technology or else it slows down the development and reduces on the level of sophistication of the materials to be used and create stress and frustration in users.

2.3.2.1.2   Pedagogical Issues

In order to develop the learning programmes at the level of interaction and collaboration which can provide the students with stimulating experience and encourage learning in the organisation, this can also emphasis on the learning outcome which can be expressed in behavioural change, develop performance through knowledge and skills, this would be the outcome pedagogical paradigms such as dissemination of information and story-telling.

2.3.2.1.3   Institutional Culture

there is need to prepare the institution to be ready for e-Learning, when learners are oriented on how to apply and access e-Learning it motivates those who don't want to learn in any other form, therefore individual learning is motivated and a sense of learning culture in the institution is developed and facilitated to support e-Learning (Macpherson, Homan and Chen, 2005).

2.3.2.2   Benefits of e-Learning

There are several advantages to e-Learning. A consolidated list of advantages was created from the work of Eke (2010), Oye, Salleh and Iahad (2012). These advantages are listed below:

- It improves on the quality of education while providing potential means to address the quality and accessibility in the education service delivery hence making it cost effective to everyone.

- Distance education programmes can be delivered by universities around the world hence creating self-motivated students around the globe.

- Education can efficiently and effectively reach the students who would be denied access due to geographical constraints.

- Education can now be delivered with limited cost of resources and this would allow students with fewer funds to attend classes and acquire their desired qualifications.

- It enhances the ability to adopt programmes which can benefit the nature of students hence meeting their requirements.

- It is flexible in the design and the curriculum content can easily be updated and shared among all students and lecturers.

- e-Learning gives an opportunity to both small and big institutions to provide learning workplace to develop the e-literacy skills among staff and other stakeholders.

- It delivers improved lifelong learning and at consistent rates, competitive environment and improved innovation of learning in the institution with increased equity.

- e-Learning encourages collaborations, information sharing where technology is applied to utilise services such as wikis, discussion platforms, blogs whereby group members can share and exchange ideas without dependency of others being involved at the same time. For example employees can e-mail to each other about the online programmes they can attend to add on their knowledge base.

- e-Learning improves both managers and employees' retention knowledge which can lead to better performance in their station duties, hence also helping them to be motivated by investing time and energy to learning towards improving their skills at the workplace.

- It is cost effective to apply e-learning in an institution that is already using information and communications and technologies, hence adding value to the utilisation of ICTs both in learning and working

- Time saving is another benefit of e-Learning. It reduces travel from work stations to academic institutions, hence allowing them to settle and get focused on the knowledge which is relevant to their job description, thus reducing boredom and increasing productivity.

e-Learning can cause employees to participate in other activities such as;

- Downloading course materials to read or to attend their assignments.

- Research information from different websites.

- Posting their comments on online platforms.

- Having interaction sessions on computers with other participants and e-Learning instructors.

- Discussing content from their fellow colleagues in relation to course materials.

e-Learning allows easy supervision of the learner's progress - especially when it is combined with other learning management systems.

Community development within e-Learning communities can integrate vast bodies of new information and knowledge, with experience within the existing company or institution, hence helping to reinforce the culture and values of lifelong learning in the institution.

e-Learning will accommodate individual styles of working and learning. The learning environment allows them to access and review content when they need it - at a convenient and right time.

It allows motivation because learners get interaction with each other at the same time getting feedback and response by use of media elements such as animation and video hence making it easy for users to learn while participating.

Online learning, being the electronic information system for both didactic and administrative support for learning in universities and vocational colleges, has provided students with sufficient resources to complete their tasks systematically. The application of online learning development has been an obvious advantage for the greater communication and collaboration, convenience hence reducing on the learning and teaching costs, creating the ability of users to control online learning, task orientation, opportunities to promote it, personalization of learning modes hence giving guidance in the teaching-learning system (Sumak, Hericko and Pusnik 2011; Bhuasiri, Xaymoungkhoun, Zo, Rho, and Ciganek, Bhuasiri et *al.,* 2012).

Online learning creates an environment for both students and teachers to communicate. Their communication will be asynchronous where communication can take place in different space and time for example via wikis, emails, blogs, and also synchronous where communication occurs at the same time via video conferencing, webcam and live chat-rooms. Universities around the world have constructed computer laboratories with installations of networked computers that have made it simple to consult relevant publications, attend tests online, receive course work assessment marks, course materials, updates of different modules and enabling students and teachers to communicate. Hence, widening the range of tools necessary to improve learning and increase communication on the internet (Sanchez, Hueros and Ordaz, 2013).

Online learning has enabled the creation of flexibility in the learning environment on the web with easy to learn, versatile and connected solutions. It has extended knowledge to enable students to participate in online forums. They learn how to communicate globally which has resulted in a safe communication climate used for learning. It has motivated students to continue participating directly in the learning mode (Zhang, Fang, Wei and Wang, Zhang *et al.*, 2012). This flexibility is regarded as the greatest strength of online learning. It provides both teachers and learners quick access to the learning materials. Both time and location enables staff to work either at home or at work. Even traveling overseas is no longer a constraint. The flexibility and convenience of online classes under blended learning will facilitate overseas relationship with staff and students, staff who are separated with the geographical work place can collaborate across the institution (Michael, 2012).

Because there are several advantages to supporting e-Learning libraries should be making an investment in terms of embedding in and supporting these online learning environments.

There are however, also challenges to consider. In the next stage the researcher will explain some of these challenges.

2.3.2.3   Challenges of e-Learning

e-Learning is resource intensive – funding as well as skills for producing learning material are essential (Uhomoibhi, 2006).

e-Learning depends highly on factors related to the overall work and learning culture of an institution; organisational structure can, for example, provide both opportunities and barriers to learning (Tynjala and Hakkinen, 2005).

Technology tends to determine how e-Learning takes place - from the beginning when creating the e-Learning project technology is used to create computer-assisted instruction material (Tynjala and Hakkinen, 2005). The instructor needs to be in command of the available technology and the quality e-Content needs to be such that the learner is attracted to the content.

Bandwidth could be a constraint – especially when the learning components are large and complicated.

Where the population is not computer literate enough, especially in remote rural areas, the eLearning components will be underutilised. Where there is also a lack of awareness of the advantages of eLearning, the opportunities offered are often missed (Alkharang and Ghinea, 2013).

In the next stage the researcher will explain the roles libraries play in e-Learning.

2.3.2.4 Library tasks to support and enable e-Learning

Eke (2010) identified the following assumptions regarding library support for e-Learners:

- The library is seen as a centre for e-Learning. It is expected to provide sufficient bandwidth, space and high speed functioning computers.

- The library will provide well trained staff who can be embarked on several sessions of training to enable students to master the tools and the content associated with this virtual world

- Libraries have to be open 24 hours a day so that students would be able to access the services at odd hours - especially part-time students who would sometimes need to participate in classes after hours require that the library remains open to accommodate them.

- The library is expected to have sufficient funds to purchase and make available expensive equipment to deliver complete services.

With the assumptions as backdrop Eke (2010) advises that the library has the following tasks to complete when supporting e-Learning:

- Draft and design information literacy modules for online and face-to-face course and programmes

- Create websites with multimedia resources that could integrate into e-Learning modules. The library website will have to offer video tutorials and identify the search techniques users can find to conduct their studies via video streaming on the web.

- Collaborative team work where the library will facilitate interaction between technology experts and lecturers in order to build a system which is of reasonable standard - to fulfil Ranganathan's fifth law of library science, "*the library is a growing organism*"

- Providing online and personal instruction modules, subjects and class lists, reference materials. Librarian will be expected to teach students on how to surf the internet and also allocate relevant information materials for the students. The library will have to train users, provide access to online resources, have at hand content providers where digitised open information can also be accessed easily by students.

- Librarians provide access to e-resources. They carry out cataloguing of electronic materials on CDs and flash discs so that they can easily be accessed by the users. The audio-visual unit of the library can do a great task to ensure that all resources are catalogued and served to the patrons when the need for access arises and also to support research.

- Providing historical information of online literature searches, inter-library loans and deploying multi-institutional, allowing users to access digital information such as articles, and other electronic resources such as e-books which can facilitate students research and course assignments. However while conducting these services the library will be playing

a guiding role in consolidating shareable resources of different libraries through facilitation of interconnection of different libraries.

Now that there is a better understanding of eLearning it is time to also investigate blended learning.

2.3.3 Blended Learning

Referring back to section 1.7.4 it is possible to say that blended learning is regarded as a combination of training with different media (which includes technologies, types of events, creation of optimum training programme for the specific audience) with face-to-face class activities in a pedagogically valuable manner. It can be regarded as traditional learning supplemented with electronic formats, products and services (Arenas-Marquez, 2012; Onguko, 2013). This is confirmed by Picciano (2009) who states that; "*Blended learning is some nebulous combination of online and face-to-face instruction ...",* as well as Davies (2003) who remarks that "*Blended learning combines training, coaching, and self-help. It involves more management, accepting that people development is a continual process, through which experience doing the work is gained*".

2.3.3.1 Implementation of Blended Learning

Many academic institutions today are considering blended learning approach as an effective uptake of a current learning system. It offers a responsive and flexible way to work and learn. When the institution is developing a blended learning initiative, it will need a strategic, best practice and an integrated approach to deliver proper learning which requires clients and staff to be supported effectively irrespective of the geographical location. Blended learning will describe activities of systematic combination of interactions and technology mediated interaction with students, teachers and both print and e-learning resources (Harris, Connelly and Feeney, 2009). The next section looks in more detail at the various components to consider when working towards an effective blended event. Harris, Connelly and Feeney (2009) extensively created the list provided below:

- **Analysis:** Analysis is the first instructional stage. It is the stage where critical identification of the problem and the context of the problem are identified. This analysis has to be both contextual and participatory to clarify goals and objectives of the programme.
- **Design:** The purpose is to develop a well-designed experience for the learners. This is a very important stage where the library also has to ensure that all the details to be worked on can be developed in order to provide an efficient and cost effective system. This stage entails the identification of appropriate technology service which can deliver considerable contextual realities.
- **Development:** This is the stage where a number of projects have to be organised and constructed according to how the system was designed. Various projects have to be brought together to complete the programme before blended learning could be implemented. This stage entails the creation of learning objects using different formats. During this stage the required multimedia equipment have to identified so that the material could be developed with such constraints in mind..
- **Evaluation:** Evaluation is the stage where central feedback is captured. It is essential to assess the users' acceptance and to receive feedback and evaluation from learners and teachers. Evaluation remains as a component to facilitate areas such as exam performance, student satisfaction, cost effectiveness, community sense with student interaction and full engagement. It is meant to identify needs and also to observe how the users can utilise the products to evaluate and report their current needs. There is need for resource assessment at financial, technical and human levels. Appropriate measures, evaluation of participants, analysing the production team and teaching while evaluating the motivation, interaction, evidence of meta cognition, access to resources, effectiveness, participants' learning styles, clarity of content, perceived satisfaction, appropriate assessment, usability and design all contribute towards an effective blended learning environment. The feedback received at this stage is very important to make required adaptations to both material and infrastructure (Onguko, Jepchumba and Gaceri, 2013).
- **Implementation:** It is initially extremely demanding for the teaching staff to implement blended learning and to support learning effectiveness. Time has to be set aside to communicate, engage and actively involve teachers so to ensure that they are fully aware of how blended learning operates and how it can be initiated. The most important approach with implementation needs to be to focus on the learning outcome rather than the technology equipment put in place.
- **Skills training:** Advanced skills are a requirement to assist staff and students when implementing blended learning. An important skill for trainers have is to be IT oriented with high levels of information literacy skills as well as having a keen understanding of e-Learning for development.

- **Support:** With any new approach in higher learning comprehensive support for all the stakeholders is required. This will involve an appropriate skilled team with clear communication regarding the facilitation of bringing in new ideas, skills and equipment to support blended learning.
- **Technology:** Technology is an essential component for any blended learning programme. Access to the technology is important to both for students and trainers as it is a requirement for the successful delivery of blended learning component. Technology should be constantly monitored for improvements.
- **Pedagogy:** The learning has to be adult-centred it should be designed not to assume pedagogy original course, but for blended learning. The elements and style of blended learning has to be reviewed clearly to see how it can be optimised for the different ways, and methods to deliver complete modules or courses to the learners.
- **Human Factors:** The users' needs, expectations, motivation and learning style all have to be considered when implementing blended learning. Considering the learner's individual needs and understanding their expectations is the first step towards successful learning outcomes.

2.3.3.2   Benefits of Blended Learning

Further to the benefits mention in section 1.7.4.1 Pereira *et al. (*2007) identified the potential benefits of blended learning to be the following:

- It modernises the teaching and learning methods from the traditional to a combination of both e-Learning and face-to-face lessons.

- It helps to facilitate the maintenance of suitable levels of knowledge for different professions.

- It increases and creates an environment of sufficient communication between the student and the teacher.

- It makes subjects or courses to be rendered more attractive

- It provides students with reliable, solid content, continuous accessibility and updated materials.

From Poon (2012) the following benefits could be added:

- Blended learning has given institutions an opportunity to embrace technology by encouraging the community to have meaningful learning, active support and carrying out inquiries.

- It has increased the flexibility of access to learning modules which has lead to a combination of both online and face-to-face components. This has allowed learners, who live a distance away from the institutions, to enrol in their respective programmes.

- It has reduced costs and encouraged resource effectiveness. Where institutions have reduced costs they could afford to develop materials that can be placed online and they can be re-used several time in an extended manner.

- It has reduced the staff and student classroom contact time.

- It has saved the costs of staffing.

- The standards of service delivery could be maintained with complete online resources.

The disadvantages of blended learning were mentioned in section 1.7.4.2. The next section mentions two of the challenges associated with blended learning.

2.3.3.3 Challenges of Blended Learning

Two challenges that need to be considered are the following"

- Resistance to online learning. Some learners will show interest while others would prefer the traditional face-to-face in instruction method – especially during the initial stages of the blended learning programme.
- Academic staff often prefer the traditional teaching methods and some are sceptical about the potentiality of students learning via online environments (Michael, 2012).

2.3.3.4 Roles Libraries Play in Blended Learning

The following are the possible roles that libraries play in blended learning:

- Libraries make use of social media tools in order to increase the collaboration base and knowledge sharing of student to student, staff to staff, faculty with students and staff hence strengthening their relationship to promote blended learning environment.

- Libraries are able to educate their students and staff on the new information discovery, creation and sharing of tools.

- Libraries view the library 2.0 as the natural extension of efforts to promote blending into learning and teaching environment to students and staff to increase on their knowledge, hence fulfilling the educational mission of a library.

- To clearly promote pedagogical knowledge librarians have become are instrumental participants in facilitating the conversations with the students, administrators, information technology staff in being knowledge-able with digital information (Shank and Bell, 2011).

- Libraries have tried to conduct services through paradigm providing students and staff with access to online information materials through systems which can allow them retrieve information from the databases, library catalogue and special collections which suit both learning and research needs of the users.

- Libraries have set up computer classes to train users and orient them on information literacy skills which have allowed them to utilise computer services in the library.

- Libraries have educated users in the ways of gaining access to the holdings of libraries and automated catalogues, locating both physical and digitised versions of books and scholarly materials, optimisation of searches, access to commercial databases, library collections, searching the internet at any convenient time, and provide assistance in the processing of search results. (Eke, 2010).

- Libraries play a para-academic role as initial facilitators of resource-based open learning, with online instructions and supervision of students.

- Libraries collaborate with technology staff to develop and promote technology skills and competencies (Corrall, 2010).

2.4   Historical Development of Online Learning at African Universities

Online learning was started in 1997 as a long distance education network between universities in Africa and counterpart institutions in the United States of America, France, and Canada (Nafukho and Muyia, 2013). This project was initiated to expand the access and improve the quality of university education in the field of business, science and engineering programmes. Online learning was made possible through the application of relevant information and communication technologies (ICTs). These technologies enabled universities to make seminars and courses, being conducted by renowned professors and lecturers, accessible to students across Africa. During the initial stages lecturers delivered lectures in front of television cameras during class sessions and later these video clips where routed to the students via fiber optics and satellite. The fiber optics and satellite enabled the lecturers to communicate with their students. Interaction was ensured using standard telephone lines. For example at Kenyatta University a student was able to ask questions to a lecturer based in the United States of America. Currently this project of online learning is much more technologically advanced with other modes of instruction having been added (Nafukho and Muyia, 2013). A case study was carried out how online has been achieved in African universities for this case Kenyatta University was selected as discussed below.

2.4.1   A case of Online Learning at Kenyatta University

The African Virtual University (AVU) project was initiated at Kenyatta University in 1998. This involved distance education with a component of network connectivity through the Internet facilities. Lecturers used a blended approach in learning and teaching. The lectures were supplemented with guidelines posted online, presentation hand-outs, and textbooks. Communication was, and still is, continuous between students and lecturers (via e-mail). The

remote universities involved were Colorado State University, the University of Massachusetts, New Jersey University Institute of technology and others (Nafukho and Muyia, 2013).

The AVU project in Kenya aimed at utilizing new information technologies as a strategy for higher education to make learning more cost effective and accessible. The disciplines which were targeted were especially business and science. Specific objectives for the project were to:

- Increase access to university education in Africa,

- Educate a large number of students and professional workers at multiple sites simultaneously,

- Prepare teaching materials for easy delivery through the AVU network,

- Improve the education quality by creating access to all academic resources in African universities,

- Contribute to 'bridging the digital divide' to improve the connectivity in the learning centres,

- Reduce the brain drain by offering attractive alternatives for students instead of studying abroad,

- Improve the quality of international standards in education,

- Build capacity at African universities and manage the faculties better,

- Ensure financial sustainability to reach delivery of distance education, and to

- Serve as a catalyst for the new investment and economic development in universities (Nafukho and Muyia, 2013).

From the study findings it was established that UCU administrators are also aiming at building a capacity to improve learning by constructing more computer laboratories, increase the bandwidth and power stability.

2.4.2 Performance of AVU in Kenya

This project held many benefits for students and scholars in Kenya. Students and professors freely participated in the project and were able to access the digital materials form the library (including electronic journals and subscription services), attended online classes and allowed

students free access to online group discussions. The AVU project was expected to be launched in Ghana in 2013 by the African University College of Communications which would support virtual Learning in Africa by getting engaged in content development, consulting services, e-Learning centers, e-conferences, webinars and workshops (Nafukho and Muyia, 2013).

By the fact that Kenyatta University students initially were involved with distance learning it would not be appropriate to ignore the project for future development. One of the added advantages are that the project endeavoured to capture and preserve some of Africa's rare collections through the digitisation of Kenyan material. The works written by African, specifically Kenyan scholars were promoted and hence contributed to African scholarship.

The introduction of distance learning lead to the development of degree programmes which were based on the requirements of African universities but which also met the requirements of the foreign universities in the AVU-partnership. Due to the recent self-paced learning in Africa and the arrival of fibre optic connectivity the services are continuously improving (Nafukho and Muyia, 2013). However there are more instances where software applications were applied in other universities to support online learning as discussed below.

2.4.3   LMS Services at University of Cape Town and Makerere University

A Learning Management System (LMS) is a web-based application which uses web technologies and the support of the internet to perform online course creation, maintenance and delivery. LMSs also allow learners to use interactive features for chatrooms, discussion platform and other methods of communication. In the case of University of Cape Town (UCT) Sakai was used (branded as "Vula" locally) and Makerere University (MU) used Moodle (branded as "Muele" locally) (Ssekakubo, Suleman and Marsden, 2013).

At UCT students reported better experience than their counterparts at Makerere University. Students were able to utilise services depending the devices which they used to access these services. Issues such as power-saving, wireless connectivity to the internet, processing power, screen size all influenced the experience reported. Laptops where more convenient because of their portability and they are faster to operate than desk top computers which are also limited to the availability of power ports. Mobile phones were also used but less successfully.

Services that students required to access most of the time were; e-cards for exams, video conferencing, video lectures or tutorials, automatic markers and notification of receipt after submitting assignments, uploading the semester or year mark results and signing up for tutorial notes.

In the next stage the researcher explains the role academic libraries and librarians can play in embedding its services online.

2.5   The Role of Libraries and Librarians in Embedding Services Online

Many libraries are integrated in the course production process, while others are involved in multi-institutional efforts to develop best practices for supporting content access and research skills via online learning (OCLC Research, 2013c). Librarians are advisers and consultants who help to address legal aspects concerning course production and use of published material. This role relates to the copyright law and the intellectual property law. Currently libraries are participating in eLearning by, for example, requesting copyright clearance for prescribed texts/ articles.

Librarians also trace alternatives for prescribed material such as 'creative commons' or 'free' material that do not need copyright clearance, on behalf of lecturers. They discover course development policies, best practices and course production material.

Therefore libraries are at the forefront when it comes to enhancing online learning. Information has to be delivered to the users in an appropriate format therefore the library has a significant role to play in delivering the correct information when it is needed.   "*Libraries in this twenty-first century have reached a level of participating directly in the educational technologies which facilitate online learning, research and access to e-resources*" (Eke, 2010). They also are able to gather appropriate material such as images, video clips and, articles. This ensures that appropriate information resources are accessible to the online audience. (Tuchler, 2013).

While preparing online content academic librarians have the potential to illustrate the significance of open access. They are able to promote the use of open access extensively. For

many years traditional publishing standards have been promoted which has made it difficult for the academic faculties and departments to stay in touch with the latest knowledge. However, open access combined with online learning facilities, provides the opportunity for equal standards in access to education.

Academic librarians should contribute and participate in the decision making when implementing online learning - to facilitate blended learning classroom model. Librarians can actively promote online learning when assisting students involved in undergraduate and postgraduate programmes. When also assisting faculty staff services to both students and researchers are streamlined (Wu, 2013).

2.5.1 Benefits of Embedding Library Supporting Services Online

In embedded online services, where the librarian answers users' queries and participates in the online discussions, an opportunity is created for all the students and staff to benefit from gaining access to information at the time of need. For example where there are weekly discussions it clearly gives a forum for monitoring the activities which librarians can keep on tailoring synchronously by participating in class. This requires less time from the librarian than providing face-to-face learning to individual students. The development of online free screen-casting and video conferencing tools have created many more learning objects to which librarians have access. Reference questions can be answered step by step on desktop computers, tablets, smart phones hence helping librarians to create an environment of sharing instructional podcasts and videos within the embedded online services.

Embedded online services improve the students' awareness of the services delivered by the library and the available resources, hence marketing the library's value in the institution and also beyond its physical location.

Embedded online services also increase the shared responsibility and collaboration between librarian, lecturer and students - to advance information literacy, impact positively on research, improve course assignments, advance students skills and facilitate success in course works.

The introduction of social media (Web 2.0 platform) and other internet sources of information have introduced a learning environment which cannot be ignored. Students internationally, are able to share ideas to make progress in their studies. Web 2.0 technologies include blogs, wikis, and social network tools such as Facebook, Skype, LinkedIn, and Twitter. These tools have boosted and supported collaborative learning, the construction and management of knowledge and social networks, social interaction where users have participated freely and teachers becoming actively motivated while participating (Ajjan and Hartshorne, 2008; Ullrich *et al.,* 2008; Greenhow *et al.,* 2009; Hain and Back, 2008).

Due to the availability of computers a user can now download and upload a file or folder of documents, images, software and application programmes so as to share them with others or to re-use this information at any convenient period of time. Online learning has provided individuals with the opportunity to utilise basic information and skills that they possess to put into practice, hence leading to predisposition to receive education via online platforms where teacher's guidance is also necessary.

In higher education institutions the Internet technology has become the vehicle for disseminating information such as course work, tests and course materials - leading to improvement in education because it has supported collaboration learning around the globe (Augustsson, 2010).

2.5.2 Disadvantages of Embedding Supporting Services Online

The stakeholders sometimes have differing ideas about the problems and solutions associated with embedded online services. This hinders the service flows.

Sometimes the library staff might be unfamiliar with the work required to provide online embedded services.

The focus could be too much on the system (technical solution) rather than the content that needs to be prepared for the learners. Library staff confuse, due to terminologies such as repository, digital content and others, the requirements to properly support online learning initiatives. In the end there is failure to manage the different entities which leads to poor service delivery in embedded online support services (McLean and Lynch, 2004).

2.6   In Summary

Advances in technology have led academic institutions to switch to blended learning. Libraries have the opportunity to be key stakeholders as the providers of information to support these initiatives. Libraries are also able to utilise the same technology to enhance traditional services.

Evidence from literature indicates that African universities have also adopted blended learning although many still practice traditional methods. Libraries and librarians have implemented strategies to deliver useful information and enriched content to both staff and students (Nafukho and Muyia, 2013). The next chapter will report on the procedure followed to establish how the library could support blended learning initiatives and strategies at UCU and its Affiliated Campuses.

CHAPTER THREE: METHODOLOGY

3.1   Introduction

This chapter provides and discusses the methodology that was used to carry out the study. It focuses on explaining the systematic way used to solve the research problem of the study. The discussion in this chapter covers the research design, research approach and the research strategies which were used to guide the study in exploring issues of developing the library services and products to support blended learning at Uganda Christian University (UCU) Main Campus and Affiliated Campuses. The chapter also discusses case study design, population of study, sampling method, data collection methods, data collection instruments, data quality control, data analysis; and ethical issues. This chapter ends with a conclusion and gives an introduction to chapter four: presentation and discussion of findings.

3.2   Research Design

Research design addresses the issues involved in planning and executing a research project by identifying the problem through to reporting and submission of results.

According to Kothari (2004:31), "research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure".

Punch (2005:63) is of the opinion that research design establishes a connection between the research questions and the data collected. It is very important to keep this advice in mind when specifying the research design for the study because as is reported by Wangusa (2007:73) and Leedy and Ormrod, (2001: 91 as cited in Kumar, 2005: 83-84) the purpose of the research design is to reliably find an answer to each of the research questions.

One of the many research designs could have been utilised for example: explanatory research design where the researcher's purpose is to gain familiarity in the unknown areas. This design is used to formulate a problem for a precise investigation.

Another type is descriptive research design where the researcher is studying a community which he/she is familiar with and the purpose of the study is to depict accurately the detailed characteristics of that particular group, event or institution.

Experimental research design is used to test relationships under controlled conditions.

Cross sectional research design is used by a researcher for different respondents at different times on the same topic and for this matter the researcher is interested in getting information from different respondents with the view of identifying any pattern in answers from respondents at different times.

Longitudinal research design examines whether or not there is change in the subject of the study with an intension of providing the cause and effect of the phenomena over an extended period of time (Nsubuga and Katamba, 2013: 73-77).

Lastly the researcher could also use a case study design. Singh (2006:148) describes a case study as, *"A method of exploring and analysing the life of a social unit- be that of a family, a person, institution, entire community or culture group"*. The case study design was adopted for the empirical component of the study, due to the fact that the study represents a complete descriptive phenomenon within the context (Yin, 2009:23).

The researcher designed the research so that it was used within one institution (UCU) and its Affiliated Campuses. Relevant primary research data was collected from faculty staff, librarians and administrators at UCU Main Campus and Affiliated Campuses. Secondary data (collected from literature) informed the design of the data collection tools. Primary data was collected, analysed and compared to the secondary data and the results were documented.

This design was selected to reveal new knowledge about the phenomenon under study. This comprised getting people involved, interacting with them - especially those who are involved in and responsible for blended learning (faculty staff as well as librarians and administrators) in order to seek their opinions and views on the different aspects of research objectives.

This approach enabled the researcher to study the selected issues in depth and openly in detail as he identified and attempted to understand the categories of information that emerged from the data which was collected (as is recommended by Blanche, Durrheim and Painter (2006: 37)).

3.3 Research Approach

Methodological approaches to conduct research could be categorised into two basic approaches. The third approach is where the basic approaches are both used. The basic approaches are either qualitative or quantitative research (Kothari, 2004:4). From that then a mixed methods approach could also be utilised (Trochim and Donnelly, 2008:182). Furthermore it was noted that quantitative research involves the generation of quantitative data which can be subjected to rigorous quantitative analysis in a rigid and formal fashion. Quantitative research is also concerned with measuring different variables in terms of statistical analysis. Qualitative research is more concerned with defining and explaining concepts which arrive at meaningful and subjective conclusions (Stangor, 2011:15; Kothari, 2004:5 and Berg, 2001:54).

Data collected by means of a quantitative approach is usually presented in the form of percentages, tables and numbers while qualitative research data is normally presented in form of descriptive and narrative statements (Babbie, 2010:35; Stangor, 2011:15; Guthrie, 2012:158). Qualitative research approach focuses on words more than numbers. This does not mean that qualitative data could not also be presented in table format – the data is usually just expressed in words rather than numbers.

Qualitative research is described as the process of inquiry with the goal of understanding a social or human problem from multiple perspectives; conducted for a natural setting with the focus goal to build a complex and holistic picture of the phenomenon of interest. (Guthrie, 2012:159).

Qualitative research shares the theoretical assumptions of the interpretative paradigm, which is in most cases based on the notion that social reality is created and sustained through the subjective experience of people involved in this communication (Nsubuga and Katamba, 2013:48).

According to Nsubuga and Katamba (2013: 48-49), the qualitative research approach has the following key features:

- It involves the study of symbolic discourse that consists of the study of text and conversations.

- It is the study of interpretive principles that people use to make sense of their symbolic activities

- Qualitative research is the study of contextual principles, such as the roles of participants, the physical setting and the set of situational events, which guide the interpretation of discourse.

For the purpose of this study qualitative research approach was adopted because:

- This study aimed at gaining an in-depth understanding of the opinions of library services and products of blended learning from Librarians, faculty staff and administrators with regard to the development of blended learning at UCU Main Campus and Affiliated Campuses.

- The researcher carried out interviews with the administrators in the library, faculty and Affiliated Campuses in order to understand their experiences with and opinions about the application of blended learning concepts.

- An acknowledgement of contextual principles was demonstrated by the fact that the researcher conducted interviews and asked open ended questions to collect data.

3.4   Population of the Study

Most authors defined population in a similar way: Population is the total number of subjects or the total environment where the researcher's interest lies (Oso and Onen, 2008:73-74; David and Sutton, 2004:149; Stangor, 2011:110; Blanche, Durrheim and Painter, 2006: 35).

The total population for this study was approximately 500 individuals - from the librarian, lecturers, ICT and administrative staff - all involved in blended learning at UCU. Section 3.5.2.2 describes how a representative sample was selected from this rather large target population. The librarians were selected because they are the service providers of e-Learning resources to the students. Faculty staff members are lecturers who provide both face-to-face and online learning, and finally the administrators because these are the final decision makers who approve such

services in terms of funding. They have the authority to allow the implementation of blended learning services at UCU Main Campus and its Affiliated Campuses.

3.5   Sampling

It appears to not always be feasible to involve the entire population when conducting research. Researchers often need to extract a sample population to try and understand the qualities and behaviour displayed by the entire population. Sampling refers to the number of people selected from the universe/ the population in order to constitute a reliable representation of the population (Oso and Onen, 2008:75). According to Kothari (2004:55), sampling refers to the procedures the researcher undertakes and adopts in the selection of people for the sample. Sample design may as well lay down the number of people that are to be included in the study that is the size of the sample. Sample design is determined usually before data is collected.

3.5.1   Size of Sample

Sample size varies depending on what the researcher would like to achieve. For this research the sample size was 50 units because the researcher wanted to ensure that the sample fulfilled the requirements of efficiency, representativeness, reliability and flexibility of the study (as recommended by Kothari (2004:57).

3.5.2   Sampling Methods

According to Kothari (2004:55), sampling refers to the procedures the researcher undertakes and adopts in the selection of items for the sample. Sample design may as well lay down the number of items which are to be included in the study that is the size of the sample. Sample design is determined usually before data is collected.

Several ways could be used to determine who would form part of the research sample, but with different types of sampling such as: convenience sampling, quota sampling, accidental sampling, cluster sampling, stratified sampling, systematic sampling, purposive sampling and snowball

sampling (Nsubuga and Katamba, 2013: 78-90), the researcher utilised purposive sampling and snowball specifically for this study as discussed below.

3.5.2.1 Purposive Sampling

This is the technique where the researcher consciously decides who to include in the sample. The researcher usually selects a sample population purposively when the individuals have special qualifications or experience that is of value for the research. Personal judgement is used to decide which individuals in the population are to be included in the study (Nsubuga and Katamba, 2013:88). The purposive sampling method was used to identify specific individuals from whom the researcher could collect focused information. The purposive sampling technique was augmented by snowball sampling which is described in more detail below.

3.5.2.2 Snowball Sampling

Snowball sampling method is where the researcher uses a social network and the fact that friends and colleagues tend to have similar characteristics to trace difficult subjects. It is used to collect focused information from the population which is difficult to trace so as to ensure equitable representation of the population in the sample (Oso and Onen, 2008:80; Nsubuga and Katamba, 2013:89).

This study employed purposive and snowball sampling to select a sample size of 50 respondents approximately one tenth of the actual population. Decision makers and practitioners of UCU's blended learning programme were selected. Respondents were selected as follows:

Ten Librarians (one with a Masters degree with at least eight years' experience and who leads the systems and technical services section in the library while two were identified as senior assistant librarians who hold a Bachelor's degrees with work experience of ten years and above, five were identified as assistant librarians who hold a Bachelor's degrees with less than ten years' working experience and two serve as library assistants who hold diploma in Library and Information science).

Twenty Academic Staff (representing the eight faculties at UCU Main Campus - Faculty of Education and Arts, Social Sciences, Business Administration, Health Science, Science and Technology, Law, Bishop Tucker school of Theology and Divinity, School of research and Post graduate studies, aacademic staff who took part of this study were found to be occupying

different positions at Uganda Christian University. Of the twenty academic staff who responded positively to the questionnaire nine were Tutorial assistants who hold degrees in their fields with less than five years teaching experience and eleven were lecturers who hold masters degrees with five years' experience of teaching a higher institution of learning); and

Twenty Heads of Departments (who included ten Deans of Faculties, four Principles of the Affiliated College Campuses, Director Finance, Director Planning, Director Teaching and Learning, Deputy Vice Chancellor Academic Affairs, Deputy Vice Chancellor Development and External Relations, and University Librarian).

The first two groups received questionnaires while the Heads of Departments were interviewed. Individuals in the purposively selected 'lecturer' sample were asked to identify whether they are part time or full time lecturers who were known supporters of blended learning. Both categories of lecturers were included in the research and provided with questionnaires.

The Heads of Departments group was selected for interviews because they are the decision makers and spearhead the implementation of all programmes and projects initiated in the institution.

3.6   Data Collection Instruments

Several data collection tools could be utilised when conducting qualitative research. Some examples are: focus group discussion tool which conducted by a trained moderator in natural manner or non-structured with focus on small groups of respondents, another tool is observation where the researcher becomes party to set a social action sufficiently to be able assess directly the social relationship involved, which involves the recording of behavioural patterns of people, objects and events in a systematic manner, documentary analysis which is the collection of information basically from the secondary sources and this involves reading of information materials which was written by other authors (Nsubuga and Katamba, 2013: 94-114).

The researcher adopted a combination of two data collection tools. Both a questionnaire and an interview were used. These data collection tools are explained in more detail below:

3.6.1   Questionnaire

Established practice is that a questionnaire is a document containing a series of written questions a researcher supplies to his or her respondents, requesting for their response. They are usually self-administered by posting them to the research subjects requesting them to complete and return the completed response to the researcher (Guthrie, 2010:135).   To collect data in this manner is relatively cheap since the expenditure is only the mailing costs to get the document to the respondents. There is no need to involve field staff. The success of questionnaire lies more in the quality of the questionnaire itself and this gives the basis of success for the researcher.

Basavantappa (2007:333) believes that a questionnaire is a document/ schedule sent via mail to research informants - to be answered as specified in a covering letter. The schedule is then completed by the informant who interprets questions when necessary.

Today it is also quite common for researchers to develop online questionnaires using online tools such as Monkey Survey or Lime Survey (Survey Monkey Inc, 2014).

The questionnaire was seen to be the most appropriate way of collecting data for this particular research (see Attachments 1 and 2). Open-response (open ended) questions (Guthrie, 2010:137) were seen as the most appropriate way to extract the required information. Questionnaires were also used because the study is more concerned with the variables that cannot directly be observed such as opinions, attitudes, perceptions, feelings and others, and such information can easily be collected by use of questionnaire.

Thirty respondents were targeted using questionnaires. The respondents were sub-divided as follows: ten Librarians and 20 Lecturers. It was anticipated that, when given enough time, questionnaires would be the ideal tool to collect data. The target population is literate and it was unlikely to have difficulties to respond to questions.

Open-response questions were used because they did not limit answers. Open questions can act as safety valves and offer additional information which the researcher might have not thought of (Guthrie, 2010:138). It was anticipated that these open ended questions would be high on validity because they would elicit comprehensive answers in respondents' own words (as was suggested by Guthrie (2012:131)).

3.6.2   Interviews

This is a method of collection of data in which an interviewer asks question from another person (Interviewee) conducted by face-to-face interaction or by telephone contact (Polit and Beck, 2006). An interview is a personal interaction where cooperation between interviewer and interviewee is essential. The interviewer is usually armed with an interview schedule which provides a series of questions that the researcher then addresses in person to the respondent (Polit and Beck, 2006).

Advantages of the Interview for Data Collection

Interviewing different respondents is advantageous for a variety of reasons - as explained below:

- This can be used by the researcher to get information which might not have been obtained by using other methods such as observation and completing questionnaires (Creswell, 2009:179).

- Face-to-face interaction between the interviewer and interviewee allows for probing questions which may lead to the whole new area of information (Creswell, 2009:179).
- It allows for the comparison of opinions and permits flexibility to include important information which may arise from the interviews (Dawson, 2002:17).
- This method helps the researcher to understand if he/ she is interested in understanding the perceptions of the participant and learning how the participant had come to attach a certain understanding to concepts, phenomena and events (Taylor and Bogdan, 1998:98).

Disadvantages of the Interview

It is very important to note that the interview method has some disadvantages - such as the following identified by Creswell (2009:179):

- It is time consuming and often involves issues of confidentiality.
- It is difficult to code the responses when indirect information is given by interviewee.
- When the respondents are not articulate it may lead to misunderstanding of the information given out.

Not all interviews are the same. There are at least three patterns or approaches that could be followed. These interview patterns are described in more detail below:

3.6.2.1   Structured Interviews

Structured interviews are the formal standardised questionnaires, where all interviews are conducted in exactly the same way and exactly the same questions are asked to generate reliability using set questions and set respondent code. This does allow the researcher to seek opinions and perceptions from various and different respondents. Structured interviews will have a greater coverage and will provide mixture of both qualitative and quantitative data; some statistical test will often be used. The basic way of presenting this data will be by number coding and to provide direct quotes and comments to illustrate them (Guthrie, 2012). It provides for coded closed-response questions such as "Do you find the library services useful to support your learning? (YES/NO)" and it also allows for the open ended questions such as "why/ please motivate your answer") but all questions have to be asked and in exactly the same order.

3.6.2.2 Semi-structured Interviews

Semi-structured interviews contain standardised questions, but retain flexibility so that the researcher could add additional questions on the fly. If required concepts and perceptions could be clarified (Guthrie, 2010:127). This method allows flexibility to vary the order of intervening questions to provide natural conversation flow (Guthrie, 2012). "Here the interviewer would also ask if the library's services are useful but the question may be phrased differently: "Please explain how useful the library's services are". If it becomes clear that the respondent is not aware of a particular service the researcher could then insert an additional question: "Do you not make use of the library's training facility?" This makes the interviewer's duty flexible to get a better understanding of the respondents' views and ideas. Open-response/ open ended questions enable the researcher to have flexibility in data collection where one question may lead to the formulation of the next question. The researcher can also learn from one respondent before interviewing the next respondent. These open-response questions allow solicitation of both opinions and facts from respondents and the questions could be adapted to allow for the collection of the required data (Guthrie, 2010).

3.6.2.3 Unstructured Interviews

Unstructured interviews are informal and conversational questions aimed at getting the informants to open up. The researcher stimulates an informant to produce more information. This type of interview gives the researcher an approach to be responsive to individual differences and situational characteristics. Unstructured interview was flexible because it pre-defined questions and allowed respondents to freely respond to the study. It also made respondents feel to be part of the study since the rigidity was displayed and it was a free response relaxed atmosphere situation. However it was time consuming since respondents dwelled so much on already discussed issues (Guthrie, 2010; Nsubuga and Katamba, 2013:105).

Semi-structured interviews were used for this study (see Attachment 3). Interviews were conducted with Heads of Departments.

3.7   Data Analysis

Analysing data is the most challenging stage in qualitative research process (Yin, 2009:32). According to Nsubuga and Katamba (2013:123) *"data analysis is the process of bringing order, structure and meaning to the mass of collected data. It is a messy, ambiguous, time-consuming, creative and fascinating process. It does not proceed in a linear fashion; it is not neat".* This study was qualitative in nature it is therefore subjective, in-depth and rich in information. The information, which was presented in the form of words, were derived from open-response questions. Open ended responses were transcribed. During the process, data was 'cleaned' to ensure that an 'apples with apples' comparison was possible. It was also during this process that further clarification was asked from respondents to make sure that outliers and exceptions are correctly understood. All such changes and expansions to data collected was recorded and reported.

The researcher also used qualitative content analysis which consists of reading and re-reading the transcripts looking for similarities and differences in order to find themes and develop categories. (Nsubuga and Katamba, 2013:123) this also described and interpreted data based on the research main problems and sub research problems. This means that the responses were analysed for content and the language used.

3.8   Data Quality Control

It is very important to ensure quality and validity of data so that the results can be trusted. According to Oso and Onen (2008:87-88), controlling data entails ensuring that acceptable levels of validity and reliability are ensured also of the instruments used. The researcher described precisely all the techniques that were employed to control and reduce the effects of extraneous variables. The researcher described and justified the procedures used to control variance by giving an estimate of the values of validity. The technique used was to match participants on extraneous (or peripheral) variables because the researcher's sample was small enough so that all

the conditions could be investigated. This ensured that the subjects were comparable even on the identified extraneous variables.

Pickard (2007:139) indicated that validity and trustworthiness of data can be classified in three categories as follows:

Democratic validity; this is the degree to which the researcher and the respondents of collaborate during data collection process and thereafter.

Process validity; this is normally the degree to which the process relates to the outcome of the study. This will reflect on the data collected and to ensure that there is no bias upon which recommendations would be raised for the application of library services and products to support blended learning as well as solving the challenges of both face-to-face and online learning.

Catalytic validity; it is the extent to which the study impacts on the researcher and the respondents in terms of understanding the situation and making changes where necessary.

All three of these validation classes were taken into consideration during the data analysis phase of this research but it is especially process validity which was relevant during this study.

3.9 Ethical Considerations

The issue of ethical behaviour is very important to consider when conducting research. The value of the knowledge gained through conducting research should never be used as justification for unethical research.

A general code of ethics guides the following major issues to consider in ethical research: informed consent, anonymity, researcher's responsibility, privacy, confidentiality, permission to carry out research, responsibilities and feedback (Oso and Onen, 2008:101-103; Guthrie, 2010:14-23). Each of these aspects is described in more detail below:

Informed consent is an agreement in which respondents state their willingness to participate in the study. They need to declare that they are aware of the research procedures they will be involved in. For this research the respondents took their decision to participate in the study based

on adequate knowledge about the study. The respondents were given information about the purpose of and the procedures used for collecting data for the study. The researcher provided respondents with information regarding the purpose of the study, the expected duration of their participation, any unforeseen risks, benefits of participation, the extent of privacy and confidentiality (please refer to the cover letter for each of the instruments in Attachments 1 - 3).

Anonymity is where the participants remain nameless in the presentation and discussion of the findings. Respondents should have the right to remain anonymous and therefore individual identities were not a salient feature of this study. With the matter of data collected there has to be an agreement between the researcher and respondents that information given will be limited to others to access so that private information is not accessed by everyone to cause insecurity to both individuals and the institution. The researcher did not reveal information in any way that could identify the respondents

It is the researcher's responsibility to show sensitivity to human dignity and to be 'well meaning' in his intentions. For this research the researcher paid special attention to ensure that these aspects were kept in mind.

Privacy is the protection of information, on the participant's side, from public disclosure of sensitive information. Respondents bear the right to keep from the general public certain information about themselves. Therefore the researcher maintained privacy to ensure that people were warned about the information they gave so that responses did not intrude into their personal lives.

Codes of ethics are standards for professional behaviour and guide acts of integrity towards the respondents in the research. The codes of ethics could therefore be seen as a set of principles of behaviours that any professionals should apply to their work. It is very important for researchers to note the following issues;

- Ensure that they, themselves, are competent in research,
- Correct the representation of their expertise where necessary,
- Avoid a conflict of interest,
- Protect confidentiality,
- Seek informed consent,

- Avoid the practice of plagiarism,
- Adhere to the highest technical standards.

Permission to carry out research is where the researcher seeks approval from higher authorities to carry out research for a certain case study or project. This researcher received approval from the Graduate Research Committee of the University of Pretoria-South Africa to conduct research at UCU Main Campus and the Affiliated Campuses. When the research was approved the researcher needed subsequently needed to gain approval from the UCU authorities to carryout work at UCU Main Campus and Affiliated Campuses.

The researcher made extra effort to understand the culture and to be aware of cultural biases, hence trying to see things from the point of the respondent so that he could gain the necessary information from the correct context.

Respondents are naturally curios to establish if the right findings were recorded for the study (Oso and Onen, 2008:101-103; Guthrie, 2010:14-23; Denscombe, 2012:124-136; Kumar, 2005:210-216). Community feedback was acknowledged to be very important ethically and also to ensure ongoing cooperation to allow future studies at UCU Main Campus and the Affiliated Campuses and respondents were therefore given the opportunity to gain access to the research results.

3.10   Conclusion

This chapter was utilised to discuss the methodology which was adopted for the study. Detailed evidence was provided from the literature to justify the approaches which were adopted by the researcher. Chapter three discussed the research design, research approach, research strategy, population of the study, sampling, data collection methods, data collection instruments, data analysis, data quality control and ethical considerations.

Chapter four will present the research data and discuss the empirical findings due to the research conducted.

CHAPTER FOUR: RESULTS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents and discusses the key findings resulting from the empirical study described in the methodology section. The chapter is divided into two parts. The first part presents the findings captured, and the second discusses the findings against the backdrop of the literature reviewed.

The researcher used both questionnaires and interviews to collect data. The questionnaires resulted in feedback from 30 respondents. Twenty of which were academic staff, and 10 librarians based at the UCU Hamu Mukasa Library. The idea was to compare their ideas about developing library products and services to support blended learning at UCU with those of the academics.

The interviews were scheduled and administered to 20 heads of departments. They were selected because of their roles in making decisions and planning for the University.

The findings are presented and discussed according to specific themes. The themes presented and discussed include: description of respondents of the study, technologies associated with online instructions, familiarity and access to technology to operate blended learning, and the proposed solutions to address the challenges faced. It is important to note that each of the mentioned themes also contain sub-themes. They present the findings from different questions asked in questionnaires and at interviews. Findings are presented and discussed separately using the respondent grouping for categorisation. The key findings of the study are presented and discussed below.

4.2 Description of the Respondents

This section provides an overview of the respondents who took part in the study, and the different roles they play at the University. The description of the respondents and their response rates are divided into sub-sections. The characteristics of the respondents are discussed below.

4.2.1   Response Rate of Respondents

Response rate is the percentage of all respondents who successfully participated in the study as explained by Stangor (2011:109). The expected number of respondents for both questionnaires and interviews was 50. Thirty of which were questionnaires completed by library and academic staff whereas 20 were interviews administered to the heads of departments. As such, the target was met.

The researcher ensured that both questionnaires and interview schedules were sent early enough for the respondents to have sufficient time to prepare. The response rate was however, influenced by the working hours kept by the respondents. Respondents, who took part in the study, indicated that their working hours vary. Collecting the responses took much longer than anticipated and the researcher had to remind the respondents several times to respond to questionnaires. In the end the researcher was able to get the required number of responses.

4.2.2   Characteristics of the Respondents

The questionnaires first collected demographic information - in order to get clarification regarding the respondents involved in the study. The purpose of including this was mainly to establish if a respondent is able to provide valid data for the study.

Table 1: Responses Received per Staff Category

Position	Number of respondents
Academic staff	20
Heads of Department	20
Librarians	10
Total	**50**

Positions in the Library Staff and Academic Staff

This aimed at establishing whether there is a correlation between their positions and the perceptions associated with blended learning. The research established that the academic staff always sought support from the library to get the right information which suits their programmes.

Library Staff

Library staff members are all qualified and together hold many years of experience. The positions they hold vary from department head to library assistants. All of these respondents recognised themselves as full time staff working from 8:00 am to 5:00 pm from Monday to Friday.

Table 2: Breakdown of Responses Received per Librarian Position

Position	Number of respondents
Assistant Librarian	5
Librarian	1
Library Assistant	2
Senior Assistant Librarian	2
Total	**10**

Academic Staff

Academic staff members who took part of this study were found to be occupying different positions at UCU. 40 Questionnaires were distributed amongst academic staff. From the outset it was decided that when at least 20 of these were returned the researcher would stop collecting responses. Of the 20 academic staff who responded positively to the questionnaire nine were Tutorial Assistants who hold degrees in their fields with less than five years' teaching experience and 11 were lecturers who hold masters degrees with more than five years' experience of teaching at Institutions of higher learning. Therefore all staff who completed the questionnaire qualified to respond. The questionnaires were distributed to all categories of academic staff, but unfortunately Professors, Associate Professors and Senior Lecturers, did not respond. It was not possible to establish the reasons why they did not participate in the study.

Table 3: Breakdown of Responses Received Per Academic Position

Position	Number of respondents
Professor	0
Associate Professor	0
Senior Lecturer	0
Lecturer	11
Tutorial Assistant	9
Total	**20**

Heads of Departments

The Heads of Departments (HODs), the University Librarian, Deputy Vice Chancellor Academic Affairs (DVC A/A), Deputy Vice Chancellor Development and External Relations (DVC D&ER), ten Deans of faculties, four campus principles from the Affiliated Campuses Arua, Mbale, Kampala and Bishop Barham in Kabale, Director Teaching and Learning, Director Planning and Director Finance. The respondents who were interviewed had the necessary

qualifications and enough experience to give insight into the complexities of supporting a blended learning initiative at Uganda Christian University and its affiliated college campus.

Table 4: Breakdown of Head of Departments Interviewed

Position	Number of respondents
Campus Principles	4
Deans of Faculties	10
Director Finance	1
Director Planning	1
Director Teaching & Learning	1
DVC A/A	1
DVC D&ER	1
University Librarian	1
Total	**20**

The feedback received from the respondents is discussed in the sections below. The results of the study are reported in the sub-themes below. The research focused on the technologies associated with online instruction (see section 4.3), the familiarity with the teaching format (see section 4.4), feedback from heads of departments (see section 4.5) and the proposed solutions to challenges being experienced (see section 4.6).

4.3   Technologies Associated With Online Instructions

Various questions addressed the technologies used. From the responses received it was possible to present and discuss the results in the sub-themes below.

4.3.1   e-Learning Platform Used at UCU

From the questionnaires distributed to the academic staff, respondents indicated that most of them are already using a learning management system – specifically Moodle. Therefore, when the library plans its interventions it needs to make sure that library staff dedicated to the initiative are trained and able to use Moodle as well. Only one individual is making use of wiki-spaces, no

one is using the blackboard platform. Although face-to-face instruction was not an option to select, the results indicated that five respondents are still using only face-to-face instruction.

Table 5: Blended Learning/ e-Learning Platform or Application used

Platform	Response rate
Moodle	6
Blackboard	0
Wiki spaces	1
Face-to-face only	5
No response	8
Total	**20**

4.3.2   Effective Teaching quotas per Course Using the Blended Format

According to the academic staff responses, the majority who are using the online learning management system, attend to students in the range of 20-50 per class. Only one staff member has managed classes with 81-100 students. This indicates that the full potential of the systems has not yet been exploited. In addition the library services could potentially influence the usefulness of the system. Seven lecturers indicated that they use blended learning. The data table below indicates the number of students' academic staff can effectively teach per course when using blended learning:

Table 6: Class Size when Using Blended Learning

Class size	Number of respondents
Less than 20	0
20-30	2
31-50	4
51-80	0
81 - 100	1
Total number of respondents	7

From the table above 2 academic staff indicated that they can teach numbers between 20-30, 4 can teach 31-50 students and only 1 can teach the range of 81-100 students while making use of blended learning. This brings a total of only 7 academic staff who indicated that they make use of blended learning, confirming the data reflected in Table 5. This result was unexpected as it may mean that a very small number of staff members actually make use of the blended format at UCU. This implies that the library has to assist in the drive to advocate and market the online services which supports blended learning in order to convince the academic staff to experiment with the online component of learning. It also indicates that further research may be necessary to establish why academics have not yet adopted the blended format of teaching.

4.3.3   Lecturers' Satisfaction with the Use of Blended Courses

When the lecturers were asked to indicate the level of satisfaction with blended learning only one respondent indicated that he was very satisfied. A total of six respondents were positive but 13 respondents indicated that they were very dissatisfied.

Some of the Reasons Provided for the Satisfaction Level

The respondents made it clear that access to the Internet may be the problem. The bandwidth is very slow and the system is poorly backed up. One respondent cited that when the Moodle system was first implemented the system went offline. Many had already uploaded academic material and these materials were lost and it had to be re-written. Others have not had a chance to use the system and hence they are concentrating on face-to-face learning. Library staff will be required to also train users on how to utilise the services available when it has embedded its products into the online teaching system. Therefore the library has to set up training to utilise the online resources to support blended learning especially then for lecturers who have not yet started using blended learning.

The data provided in the next section indicates the levels of satisfaction by lecturers on the use of blended courses.

4.3.4 Dissatisfactions of Academic Staff with Blended Courses

The blended format of teaching is not a priority at the moment and therefore those who have used it have faced challenges with poor equipment. Both soft- and hardware do not match the current technology advancements at the UCU. It is therefore not surprising to have found that only 7 of the respondents have tried to use blended learning. Thirteen respondents indicated that they have not yet attempted to use blended learning. This should be a matter of concern for the University. The library may need to assist those who are trying to implement the technology by providing support for their classes.

4.3.5 Technologies that Academic and Library Staff have Utilised

The technologies that were examined for use by both academic and library staff were; social networking, content management, online communication, plagiarism detection software, online open content services and e-Resource products. The table presents the results captured.

Table 7: Utilisation of Instructional Technologies in Blended Classes by Academic Staff

Categories of Instructional Technologies	Currently Use	Planning to use	Interested in Using	Not planning to use
Social networking (Twitter, Facebook, MySpace)	12	5	1	2
Content Management (Lecture Capture, course wiki, course blogs, RSS feeds, Podcasts)	3	14	2	1
Online communication (chat, web/video conferencing, Skype)	6	7	7	
Plagiarism Detection Software (e.g. Turnitin.com, Web Assign)		20		
Online open content services (e.g. OpenDOAR)	4	15		1
e-Resource products (e.g. e-Journals and e-Books)	16		4	

The majority have utilised social media, however some neither use social media nor plan to use the tools in the near future.

A few indicated that they have or are currently utilising content management service. This is quite a promising majority planning to use pod casts, wikis, document management with a few who have the interest of utilising the service. However a content management system does not formally exist at UCU at the moment.

The majority are planning to use the online open content service, while only a few have actually been utilising such services.

e-Resources have been utilised well. This is a basic indicator that lecturers are on track to integrate that aspect into an online component of learning and in doing so will be boosting the use of good quality literature through blended learning.

Table 8: Utilisation of Instructional Technologies by the Library Staff

Categories of Instructional Technologies	Currently Use	Planning to use	Interested in Using	Not planning to use
Social networking (Twitter, Facebook, MySpace)	9		1	
Content Management (Lecture Capture, course wiki, blogs, RSS feeds, Podcasts)	1	3	6	
Communication (chat, web/video conferencing, Skype)	9		1	
Plagiarism Detection Software (e.g. Turnitin.com, Web Assign)		10		
Online circulation services, Online Patron update registration	9			1
e-Resources services; e-Journals, e-Books	10			
Others	1			

A total of 9 of the 10 librarians polled use social media and the others are interested in learning how to use social media. The majority is interested in using content management, a few are planning to use the tool and only one is currently using this type of technology.

The researcher found out that 9 are already using communication tools and the other librarian is interested in learning how to use these tools. Most of the library staff have indicated that they are planning to use plagiarism detection software. The majority already use online open content service.

All Library staff use e-resources.

Only one participant indicated that another system: TEAL DIGITAL LIBRARY hosted from a local server was accessed via the LAN and is being used.

With reference to the results presented above it is possible to say, in summary, that although both groups (academic and library staff) are familiar with the technologies it appears that library staff may already be using the technologies more extensively. The library is using social media for some of its library orientation instruction. It would therefore be relatively easy to transfer some of this material to an e-Learning platform so that instruction could become blended.

4.3.5.1   Social Networking (Twitter, Facebook, Blogs, RSS feeds)

The majority of the academic staff have utilised social media, however a few neither use social media nor plan to use them in the near future. This is an indication of an opportunity which the library has to utilise. Library staff could develop seminars to support lecturers as well as train them in the use of social media as a means of communication with their students and also to support the online component of learning. The majority of library staff members already use social networking tools. This is an indication that library staff are familiar with the concepts and could be easily equipped to train others in the use of social media.

4.3.5.2   Content Management Tools

This section relates to technologies such as Lecture Capture, document management, course wikis, and podcasts. A few of the academic staff indicated that they are currently utilising such

services and it quite is promising that a majority is planning to use podcasts, wikis and document management. A few have shown interest in utilising the services. A majority of library staff are interested in using content management, a few are planning to use and one is already using this type of technology. Therefore the library management could make use of the opportunity to train all library staff so that they could collaborate with academic staff in support of the blended learning drive at the University.

4.3.5.3 Online Communication

Majority of the academic staff are interested in using online communication. A few are interested currently using the services. Therefore the library has to take it into considerations that many lecturers need support on how to conduct video and Skype conferences. When they visit the library staff should be able to join colleagues and participate at international level to share ideas rather than travelling long distances in search of new knowledge. On the side of the library staff the findings indicated that the majority are already using communication tools. Only a few are not using them. Therefore this means that library staff would be able to assist in training academic staff in the use of video conferencing, Skype calls, chats online and so on. This is a good indicator that a few, who are not equipped, need to be trained and those who are already using the service may be able to hold seminars and workshops so that skills could be upgraded and the advance in technology could be exploited.

4.3.5.4 Plagiarism Detection Software

An analysis has been made from the findings that the majority of the academic staff are planning to apply plagiarism detection software (e.g. Turnitin). This service does not yet exist at UCU. The library has a duty to convince the University ICT Service department and the top management administrators to introduce anti-plagiarism software so that students and researchers can promote good quality research products. Library staff also indicated that they were planning to use plagiarism detection software. This implies that none of them have ever used the software.

It is therefore suggested that they should be trained so that they would be able to assist students when there is a need for them to do so.

4.3.5.5   Online Open Content Services

Most of the academic staff are planning to use the online open content service. A few have been utilising such services although at a low rate. The library must set up training. If lecturers are not utilising this component then the library has an opportunity to provide guidance and assistance. Library staff reported that they use online open content services which indicate that their knowledge could be of use to the academics.

4.3.5.6   e-Resource Products

Some academic staff have utilised e-Resources well. This is a basic indicator that lecturers are on track to advocate the use of the products. The e-resource products available at UCU include e-journals and e-books. What the library could do is to subscribe to more databases which are suitable to all support programmes and courses taken at UCU. The library should arrange orientation programmes for all new students and staff so that the products are utilised to the full. Library staff indicated that e-Resources have been used well by users and that they offer training to users. They should be encouraged to train more lecturers and all students to basically utilise the products UCU has subscribed to more effectively.

The similarity between academic and library staff, for the different technologies discussed above, is that both groups have utilised social media, e-resources and online communication tools , however it quite a challenge to both groups that they have not utilised plagiarism software. The library should establish a policy so that Library staff could introduce technologies and services that could be of use to all. Training will continue to be an important service to continue to deliver.

4.3.6 Future Choice of Teaching Courses in Blended Format

The results reported were collected from academic staff. A few were not satisfied with blended learning. However the majority noted that there is a need for quality equipment to make blended learning feasible. It therefore appears that would need to face several challenges if it decides to support blended learning. It would need to develop several tutorials to train lecturers and to promote the benefits of blended learning. Once fully implemented the Library could also orient students about the services they can utilise when they attend their classes online – especially those students coming from distant places.

4.4 Familiarity and Access to Technology to Operate Blended Learning

This section reports on the research questions which relate to the actual use of blended learning content. The responses are presented and discussed in the sub-themes below.

4.4.1 Levels of Interaction

Responses to a question as to whether there was a marked increase in the interaction between lecturers and students in a blended class are provided in Table 9 below.

Table 9: Levels of Interaction between Academic Staff and Students in Blended Class

Increased 5	Somewhat increased 4	About the same 3	Somewhat decreased 2	Decreased 1	No response
4	2	1			13

The low rate of return jeopardises the result but the majority of those who have used blended learning indicated that the online components increase the frequency of interaction with students.

Table 10: The Quality of Interaction between Academic Staff and the Students

Much Better 5	Better 4	About the same 3	Worse 2	Much worse 1	No response
	4	2	1		13

The majority noted that the quality of the interaction in a blended class is better than in face-to-face only.

4.4.2 Perceptions Regarding the Value of Teaching a Course in Blended Format

Academic staff majority appreciated blended format because it enhances participation of students and draws them nearer to the instructor. Students who are categorised as above or below average could be assisted so that they could improve their academic results. The flexibility allows for a situation where students and the instructor can both achieve their goals even if there is a geographical distance between them. However the results also indicated that the least positive aspect, reported by the majority, is low bandwidth to support the services. Therefore the library has to influence and lobby to ensure that strong Internet connectivity is introduced at UCU.

The Library staff described e-Resources and social media as the most positive aspects the library could contribute to blended learning. What this indicates is that there is a need to constantly improve the library's e-Resource web presence. When bandwidth is improved all students should be able to access all materials online. The lack of an institutional repository, to facilitate access to research materials such as dissertations and theses as well as past examination papers, was also identified as a need.

The library has already investigated the possibility to implement an institutional repository.
The majority of the Library staff identified that training is very important - especially when new services have been introduced or existing services are upgraded and advanced.

Table 11: Training Required

Training required	Training not required	No response
7	2	1

The library has to set up specific sessions to support staff so that they are ready when users require their support

Having evaluated the information gathered from academics and librarians it was then necessary to see if there is alignment with the experience and expectations of the various heads of departments (HoDs). Very interesting information was gathered from the HoDs. The interviews were transcribed and analysed. The results are reported in the next section.

4.5   Gaining Feedback from the Heads of Department (HoDs)

Once again results are reported making use of sub-themes.

4.5.1   Familiarity with and Access to Blended Learning Technology at UCU

The HoDs were asked the extent they practice blended learning themselves. From the responses it is clear that the HoDs are not fully aware of the advantages of blended learning. They appeared not to know what the requirements for successful implementation are. Only two respondents were able to identify an e-Learning application (Moodle).

However, the majority of the respondents are using emails with a few using blogs, wikis and Facebook. It is however not strange that so few academics have attempted to use blended

learning. The university would need to do much more to get all staff acquainted with e-Learning technology and its use in a blended format of instruction.

4.5.2 The Extent to which Blended Learning Initiatives at UCU are Supported

The majority of the HoDs tried to encourage staff to implement blended learning at UCU. A few commented that the ICT staff complement needs to be expanded to support the initiative.

4.5.3 Defending Blended Learning in the UCU Finance Committee

All respondents indicated that they had already supported the implementation of blended learning not only in the Finance Committee but also in Senate. They expressed strong support in an effort to convince the Finance Committee to make provision for enough funds for rolling out blended learning. Therefore the library has also to ensure that it convinces the finance department if it is to support blended learning.

4.5.4 Support for Lecturers Wanting to Introduce Blended Learning

There was unanimous support for lecturers who wanted to use blended learning. The library staff would therefore need to start developing the necessary skills to support blended learning because with this much support for the initiative it is inevitable that blended learning would be rolled out at UCU.

4.5.5 Advice to Lecturers Wanting to Start Implementing Blended Learning at UCU

The majority indicated that there is need to have workshops and to encourage those who are not aware of the initiative to attend online conferences. The administrators felt that they were responsible for establishing the infrastructures and improve the Internet access and ICT services.

However staff members and students have the responsibility to buy laptops and computing equipment.

4.5.6   Perceptions Regarding the Students' Familiarity with Technology

The majority gave credit to the University for encouraging students to take computer skills training. These training sessions equipped students with word processing skills and show them how to manage emails. The library has three specialised computer laboratories which are; an e-Resource training lab, a business computing lab, and a media centre lab. Then there is also the ICT Resource centre and the Faculty of Science and Technology computer laboratories. Therefore access to ICTs at the university is no longer a huge problem. The library should however, visit lecture rooms to emphasise the need to utilise online resources. Both students and some lecturers are not yet aware of available technologies that deliver electronic content.

4.5.7   Ability to Take Advantage of the Online Components in Blended Learning

The majority noted that it is their perception that 65-85% of the students are familiar with the online environment. The reasons for this could be that most of them are equipped with a basic computing course and some leave high schools with basic knowledge of the use of ICT. This implies that when the university begins to actively support blended learning a good percentage of the end users would already have the computer skills required - which is an added advantage to the blended initiative.

4.5.8   Frequency and Quality of Interactions in a Blended Class

The majority of the HODs supported the idea that online components increase the frequency of interaction with students to that when there is only face-to-face interaction. However a few had no comment, while others noted there is a need for Lecturer's support to help students understand the utilisation of online components.

4.5.9   Assessment of Students' Achievement

Some   respondents indicated that in blended learning classes there is an opportunity of the instructor to force all students to participate in the learning experience. In a face-to-face class the instructors knowledge is the key component whereas blended learning will allow students to also share their ideas with fellow colleagues and the instructor. The library can improve its services over this matter when it creates a platform for discussion between users and library staff such as online discussion topics, webinars with free access.

4.6   Proposed Solutions to Address the Challenges Faced

Various questions were asked under this section which were answered as presented and discussed in the question format sub-themes below.

4.6.1   Library Staff Suggested Solutions to Novices

There is a need to improve the technology services and the all structuring of the service delivery of the library services, knowing the user's needs, and planning well with budgets which can support the online component of blended learning format. Therefore this is an indication that the library has a duty to bring on board the ICT service department to support the services by upgrading and equipping the library with the necessary services to support blended learning.

4.6.2   Academic Staff Suggested Solutions

When asked what additional support, technology, or training that could be provided to help the novice lecturer in blended courses the majority responded advising whoever is responsible to set up training for lectures to get well equipped with the different ways to deliver information in a blended format most of the categorised technologies under question eight of this question need massive training but most especially on content management, online communication, plagiarism detection software, and online open content service.

There is a need for enough trainings and gain enough knowledge on how to apply blended courses for the first time, and consult the concerned departments such as the library and the ICT

service department which have to play an important role of supporting online services to operate and deliver good quality complete information materials to the new programmes.

There is a need for training and guidance how to deliver, retrieve, upload, download, select, manage and store information under blended format so that users do not get biased with this new advanced technology service.

4.6.3   HoDs Suggested Solutions

HoDs indicated that UCU has already supported students by putting the infrastructures such as computer labs, bandwidth has been put in all corners of campus, purchased many computers and set up their laboratories for students' access we do not need to go 100%. As such, therefore the library has enough computer labs set up for the users to access online materials which is an indicator that it has to ensure quality information is uploaded on their website page with active links so that users can easily access the online materials.

4.7   The Services the Library Should Introduce to Support Blended Learning at UCU

HoDs suggested that the library should introduce electronic security gadgets so that all the library materials are fully guarded. Increase on wireless network to users and also organise seminars on how to utilise e-resources, create more seminars to teach users how to utilise e-resources because they have many which have not been fully utilised. Therefore I agree with these brilliant ideas because the library has loopholes and weaknesses in such areas noted by heads of department. If the library collaborates with the ICT service department I believe the support of blended learning will be a simplified and easy service to operate.

4.7.1   Advice to the Library Staff Members

HoDs have described library staff interest in developing products and services in blended learning as a personal interest. Library staff has to pick on the interest and search for seminars and workshops with small courses which can help them improve their knowledgeable to serve under the online component. Therefore the library administration has to set up both internal and external seminars for staff so that they get equipped with the service and also allow staffs who have secured scholarships to go abroad for further studies so that they gain knowledge which can be more useful when they are back to their work stations.

4.7.2   Training

The majority of the library staff members have indicated that training is very important. When new services are introduced or current services are upgraded and advanced training is needed. There is a need for the library to set up sessions to support staff so that they are not embarrassed when users demand their support for online components. However the academic staff majority responded by advising whoever is responsible to set up training for lecturers to get well equipped of the different ways to deliver information in a blended format most of the categorised technologies need massive training, but most especially on content management, online communication, plagiarism detection software, and online open content service. This implies that the library should support blended format putting into considerations to train both academic staff and students the above noted technologies so as to boost blended learning at Uganda Christian University. This can be done while setting up tutorials for students and seminars/workshops for academic staff.

4.7.3   Suggestions and Advice to New Library Staff

Academic staff have suggested enough trainings to the librarians in order to equip them with knowledge on how to apply blended courses. Consult the concerned departments such as the

library and the ICT service department which have to play an important role of supporting online services to operate and deliver good quality complete information materials to the new programmes. Gain the knowledge of how to deliver, retrieve, upload, download, select, manage and store information under blended format so that users do not get biased with this new advanced technology service. In other wards the library is a key player under such a situation to help lecturers with the necessary information needed to backup the course which would be delivered under blended format. Therefore a lot of research has to be carried out by the librarians so that both students and lecturers can get the required information to boost the service.

However the library staff has noted that there should be improvement of the technology services. The all structuring of the service delivery of the library services, knowing the user's needs and planning well with budgets which can support the online component of blended learning format. There is a need for the library to bring on board the ICT service department to support the services by upgrading and equipping the library with the necessary services to support blended learning

HoDs suggested that the library should introduce electronic security gadgets so that all the library materials are fully protected. Increase on wireless network it avails to uses and also prepare seminars on how to utilise e-resources, create more seminars to teach users how to utilise e-resources because they have many which have not been fully utilised. Therefore I agree with these brilliant Ideas because the library has loopholes and weaknesses in such areas noted by heads of department. If the library collaborates with the ICT service department, I believe the support of blended learning will be a simplified and easy service to operate.

Many have not given suggestions but a few have indicated that this is a personal interest where library staff have to pick it up on the interest and search for seminars and workshops with small courses which can help them improve their knowledge ability to serve under the online component. There is a need for the library administration to set up both Internal and external seminars for staff so that they get equipped with the service and also allow staffs who have secured scholarships to go abroad for further studies so that they gain knowledge which can be more useful when they back to their work stations.

4.8.   Suggestions and Advice to Academic Staff and Line Departments

The HoDs have encouraged academic staff to support blended learning at UCU. A few have commented on the staffing of ICT service department, saying there is need to be added on to support the initiative. This implies to the library to support blended learning is also for them to visit heads of departments set up meetings with them and recommend on the technologies to use such as necessary software, hardware needed and also set up training to train both academic staff as well as library staff to get equipped with the concepts so as to help students as well as boost the initiative of blended learning.

HoDs have convinced the finance committee to make provision of funds to support the staff to acquire current resources through online resources. The students should advance their knowledge of ICT to support the initiative of blended learning. There is a need for the library to ensure that it convinces the finance department if it is to support blended learning because this it involves subscriptions of online databases with e-journals and e-books content which are more suitable for blended learning.

Many of the HoDs have also seen it as a wonderful idea to support lecturers. This is infrastructure have been put in place, such as Internet connectivity is available, the library has subscribed to e-resources. There is a need for the lecturers to be fully involved as well as involve students to visit these services as well as utilise them because even the ICT service department is trying to improve the internet connections.

HoDs have also advised that there is need to have workshops and also encourage lecturers who are not aware of the initiative to attend online conferences. Since we are putting up infrastructures, they should also buy laptops because they cannot do everything for them but are trying, Internet services we have set them up and improving our ICT services.

HoDs have indicated that UCU has already supported students by putting the infrastructures such as computer labs, bandwidth has been put in all corners of campus, purchased many

computers and set up their laboratories for students access we do not need to go 100% but we going in for blended learning has you have called it. Therefore the library has enough computer labs set up for the users to access online materials which is an indicator that it has to ensure quality information is upload on their website page with active links so that users can easily access the online materials.

A few have indicated that UCU is planning to improve and upgrade online component, in its strategic plan for all staff and with high interests to initiate blended learning and also staff to get more engaged and get acquainted with what has been put in place and also staff to teach fellow new staff and students because these are the biggest percentage of users in the university. This is an indicator for the library to be fully supported since the top university management is planning to run and operate online component as a study development initiative.

4.9   In Summary

Chapter four provided the results of the empirical study. This study established that it appears that blended learning has not yet been introduced widely across UCU.

There could be several reasons why blended learning is still in the conception stage. Access to the Internet and the very slow bandwidth are serious technical concerns. The fact that the Moodle system is poorly managed and that both soft- and hardware do not match the current technology advancements at UCU are important concerns to take note of.

The study also investigated the use of technologies such as social networking, content management, online communication, plagiarism detection software, online open content services and e-Resource products. Results indicated that library staffs   are familiar with most of these. Plagiarism detection software appears to be the only exception. On the other hand academic staff have less experience in using these services/ technologies but the majority are interested and planning to utilise them fully.

The study established that majority of the HODs supported the online components increasing the frequency of interaction with students than the face-to-face interaction.

It appears that academic staff do not appreciate the blended learning format. It is not yet acknowledged that the blended format of learning enhances participation of students and also draws them nearer to the instructor. Students who are weak and slow as well as fast learners could easily be accommodated in the same class. It is not yet accepted that this is how they could improve their academic results. Similarly the flexibility, were students and the instructor can both achieve their goals even if there is a geographical barrier, is not being acknowledged.

Chapter four concludes with suggested solutions to overcome the challenges of blended learning such as providing training to academic staff as well as library staff and improvement of the technology services. These suggestions and recommendations will be expanded further in Chapter five.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1   Introduction

The overall aim of this research was to identify the services that the UCU library can develop to support the online component of the blended learning initiative at the Main Campus (at Mukono) and the affiliated college campuses at Arua, Mbale, Bishop Barham Kabale and Kampala campuses. This study was initiated to determine the progress with regard to the implementation of e-Learning/ blended learning for the University and to establish how blended learning services can be supported by the library services at all UCU campuses.

The specific research objectives were, within the context of blended learning, to:

- Identify UCU's strategy regarding the implementation of blended learning (refer to Chapter two section 2.3.1 and chapter four sections 4.5.2, 4.5.3 and 4.5.5).
- Explore the current state of online learning support services provided by UCU library and its Affiliated Campuses (refer to Chapter four section 4.3)
- Identify the benefits and the challenges of online learning support services to the library patrons at UCU and its Affiliated Campuses (refer to Chapter four sections 4.4 and 4.5)
- Formulate strategies to overcome challenges and sustain online learning support services (refer to Chapter four sections 4.6 and 4.7)

These objectives were all met and therefore the next section will be utilised to provide a brief overview of the findings and conclusions reached.

5.2   Summary of Findings and Conclusions

Research Objective 1: UCU's Strategy Regarding the Implementation of Blended Learning

In chapter four section 4.3.4 of this report it was reflected that some of the academic staff supported the online components. If the online learning system is fully implemented it would increase the frequency of interaction with students – more so than just with face-to-face

interaction only. However, there was a category of academic staff who noted that, there is need for lecturer's support to help students understand the utilisation of online components.

Chapter two section 2.3.1.10 of this report reflected on pedagogical issues, which are pertinent in the development of the learning programmes. At the level of interaction and collaboration an online learning system can provide students with a stimulating experience and encourage learning in the institution. Their learning culture could be influenced. There is need to prepare the institution to be ready for e-Learning. Therefore when learners are given orientation on how to apply and access e-Learning, it will motivate them to learn differently.

The literature identified the main reason why universities have become involved in blended learning. It is because of the development of e-Learning to underpin and support face-to-face learning (refer to Chapter two section 3 of this report), which has been due to aspects such as technology it is only in technology that e-Learning can progress. It offers responsive and flexible way to work in and learn. When the institution is developing blended learning a strategy must be set, with best practise and an integrated approach to deliver proper learning were both clients and staff are to be supported effectively irrespective of their geographical location.

Research Objective 2: Explore the Current State of Online Learning Support Services Provided by UCU Library and its Affiliated Campuses

The current state of online learning support services provided by UCU library and its Affiliated Campuses is described in full detail in Chapter four section 4.3. Research findings revealed that different technologies have been examined by both academic staff and library staff. Respondents were positive which means that it should be easy for library staff to develop and embed services as they are already familiar with the technologies. Online communication was being extensively utilised by both academic and library staff according to the results in Chapter 4 section 4.3.5. In conclusion the library has to put a lot of emphasis on the use and promotion of all the other technologies to boost online services hence supporting blended learning.

Research Objective: 3 Identify the Benefits and the Challenges of Online Learning Support Services to the Library Patrons at UCU and its Affiliated Campuses

In chapter two section 2.2.2 of this report a number of advantages of online learning were identified. One example is that several institutions are promoting distance learning programmes around the world – there therefore is a large network from which to learn and with which experiences could be shared. Another is that efficient and effective education reaches the students who would have been denied access due to geographical constraints and extravagant costs of resources. Online learning also enhances the ability to adopt programmes which can benefit the students. Designing curriculum content as well as changing content can easily be updated and the burden shared among students and lecturers. Hence giving an opportunity to both small and big institutions to provide a learning workplace, to develop the e-literacy skills among staff and stakeholders, to encourage collaboration, to share information with the use of the technology applied and to utilise services such as wikis, blogs.

Literature revealed that online participation of students' draws them nearer to the instructor. Similarly online learning has also helped the students who are slow learners to catch up with those who are fast learners in their studies – without constraining the faster students.

It has resolved the challenge of flexibility and relationship between lecturers and students.

The flexibility between the students and instructor to achieve their goals even if there is a geographical constraint has been resolved. This was also reflected in chapter four sections 4.5.6 and 4.5.7

However, UCU is not yet able to benefit from these advantages. In chapter four sections 4.4 and 4.5 of this report, the main challenges were identified. Some examples are: poor equipment/ hardware which does not match the current advancements in technology, poor connectivity/ bandwidth which makes the system slow - hence discouraging students and staff to continue utilising online resources and promote online learning. These findings led to the conclusion that for the library to support blended format it has to first influence stakeholders who could ensure that all the services and products are well supported with strong Internet connectivity and new equipped, software and hardware.

Research Objective: 4 Formulate Strategies to Overcome Challenges and Sustain Online Learning Support Services

From the research findings in chapter four sections 4.4 the main challenge was discussed, these were that, some lecturers are uninformed about online learning.

In chapter four sections 4.6 and 4.7 a number of strategies were suggested and discussed in the research findings to overcome the challenges such as;

- The need for training as the very important issue which can help all staff who have not yet been introduced to online learning.
- There is need for ICT department to address the challenges brought about by technological advancement – so that the advanced technologies could be properly exploited.
- To improve both wireless and wired network - strengthening the bandwidth hence sustaining of online learning services will be upgraded.

UCU has set up infrastructure, such as computer laboratories, which can boost and improve the students' access to the online resources. There is a strategic plan for all staff to help them get more engaged and acquainted with what has been put in place to support online learning at UCU and its Affiliated Campuses. In conclusion the University is ready to improve online learning and also promote any new advancement in technology.

5.3   Recommendations

Recommendations have been subdivided into five categories which include; skills trainings, support, technology, pedagogy and human factor.

5.3.1   Skills Trainings

It is recommended that UCU library focuses on training both academic and library staff. Failure to have training is a risk mainly for new staff and students because they will not be able to access, manage and operate blended learning. The intention should be to add to their basic

information technology skills - to learn about new ways of collaboration and learning interaction. Training should relate to information technology, e-Learning study skills, advice on the benefits of e-Learning. Skills training will be required to 'use' elements related to the production of recommended content for blended learning classes. A benefit analysis should be done and a recommendation, whether to produce content within or to outsource production of content to e-Learning content providers, is essential.

5.3.2 Support

It is advised that UCU library considers (a) user support systems and (b) the most important issues to be address. The new approach to deliver learning material and the provision of comprehensive support (for all stakeholders) should be available when the blended learning system is implemented and the users experience the need to utilise the services. This must done by an appropriate team of skilled staff members or the support should be outsourced.

5.3.3 Technology

There is need for more functional teaching and the option to address different learning styles so that the quality of teaching could be improved. The access and technology limitations have to be addressed to get a solution immediately for UCU and its affiliated college campuses. Easy access to online learning content, for both lecturers and students, is the main prerequisite for successful delivery of any e-Learning module. Therefore the biggest emphasis has to be put on technology infrastructure that could enable that access.

It is recommended that UCU library takes a lead in communicating this need to the authorities so that the initiative could get a fair chance to be successful.

5.3.4 Pedagogy

The UCU library is encouraged to set up and have accessible an adult-centred learning module for its own training material. Courses should be redesigned (some may even need to be designed from scratch) so that the pedagogy used supports blended learning. The new training material,

delivered in blended learning format, has to be careful review regularly to monitor how they can be further optimised so that the different ways and methods of service delivery continue to match the current state of technology advancements – as was reflected in chapter two section 2.3.1.10.

5.3.5 Human factors

The UCU library is encouraged to focus on the changes that will occur in the learners' attitude and expectations. Learning styles and users' needs and motivations have to be considered to get the optimal benefit for students who need to be trained and developed. Student expectations need to be met if their engagement with blended learning is to be successful. This matter was discussed in more detail in Chapter two section 2.3.1.11.

The study yielded enough data and information that was to be useful for proper planning and decision-making when developing efficient library services supporting blended learning for the entire UCU. The study raised data that was useful in decision making for the University.

5.4 Recommendations for further study

First and foremost it is essential that a full scale investigation is launched into the implementation of blended learning at UCU. This very limited study surfaced that it is quite possible that UCU is further behind in the implementation than what is perceived to be true.

A study focusing on the implementation library services and products to support blended learning could be conducted at public academic institutions (government funded) in Uganda.

A study focusing on Masters students' usage and behaviour when exposed to distance learning to establish how they cope with blended learning and their usage of the online library services and products. It would be interesting to see whether there are differences in the usage patterns differ between part-time and full-time students.

Similar studies may be conducted in other private/government universities to determine whether all students have similar needs towards blended learning.

5.5 Conclusion

As was noted in Chapter one, the research was based on the justification of the study, the problem statement and the six research questions. The study followed a systematic methodology as was discussed in chapter three. An empirical study was conducted to provide feedback in relation to the research questions as discussed in chapter four in comparison to the literature review which was reflected in Chapter two.

In this final chapter of this research a summary of findings and conclusions, recommendations for UCU and recommendations for further research were provided.

Based upon this chapter it is concluded that the study has shown that UCU and its Affiliated Campuses have started implementing online and blended learning but the initiative is not yet at an advanced stage. The library's online services are being utilised to a certain extent but not yet as an embedded service within the online learning platform. From the findings and conclusions it was indicated that the internet coverage at UCU is still poor with slow bandwidth both wireless and wired network. This means there is an urgent need for concerted attention and proper planning and budgeting to remove the constraint and to promote the service delivery to both the library services and lecture material service-network to conduct the studies and proper learning environment. Before this constraint is removed it is unlikely that lecturers will utilise the system to its full potential or that the library would be able to successfully embed its services and products.

REFERENCES

Aggarwal, J.C., 2007. Essentials of education technology: innovations in teaching-learning.-2nd ed. New Delhi; Vikas publishing house PVT Ltd.

Ahmad, I., et al., 2012. Teachers' perceptions of classroom management, problems and its solutions. *International journal of business and social science,* V3 No. 24 Special Issue.

Ajjan, H. and Hartshorne, R., 2008. Investigating faculty to adopt Web 2.0 technologies: theory and empirical tests. *Internet and higher education*, V11 No.2, Pages 71-80.

Akbayrak, B., 2000. *A comparison of two data collecting methods: interviews and questionnaires.* Hacettepe üniversitesi eğitim fakültesi dergisi 18: 110.

Alkharang, M.M. and Ghinea, G. 2013. e-Learning in higher educational institutions in Kuwait: experiences and challenges, *International journal of advanced computer science and application* V4 No.4. 290-333

Alonso, F., Lopez, G., Manrique, D., and Vines, J. M. 2005. An instructional model for web-based e-Learning education with a blended learning process approach. *British Journal of educational technology,* V36 No. 2

Arenas-Marquez, F., Machuca, J.A.D, and Medina-Lopez, C., 2012. Interactive learning in operations management higher education: software design and experimental evaluation. *International journal of operation and production management* V32 No.12, Pages 1395-1426.

Augustsson, G., 2010. Web 2.0, pedagogical support for reflexive and emotional social interaction among Swedish students. *Internet and higher education*, V13 No.4, Pages 197-205.

Aydin, C. H., and Tasci, D., 2005. Measuring readiness for e-Learning: Reflections from an emerging country. *Educational technology and society*, V8 No. 4

Babbie, E., 2010. The Practice of Social Research.-11th Ed. Belmont, CA: Thompson Wadsworth.

Basavanthappa, B.T., 2007. Nursing research. 2nd ed. New Delhi: Jaypee brothers medical publishers Limited.

Berg, B.L., 2001. Qualitative Research Methods for the Social Sciences.-4th Ed. Boston, MA: Allyn & Bacon.

Bersin, J., 2004. The blended learning book: Best practices, proven methodologies and lessons learned. Sanfrancisco, CA: Pfeiffer.

Bevan, David and Kipka, Claudia, 2012. Experiential learning and management education. *Journal of management development*, V31 No. 3, Pages 193-197.

Bhuasiri, W., Xaymoungkhoun, O., Zo, H., Rho, J.J. and Ciganek, A.P., 2012. Critical success factors for e-Learning in developing countries: a comparative analysis between ICT experts and faculty. *Computers and education*, V58 No.2, Pages 843-55.

Bilalis, N., Dalivigas, A., Antoniadis, A. and Athanasaki-Michailidou, C., 2002. A methodology for evaluating software tools for the development of e-learning systems. Session paper at the International Conference on Engineering Education, August 18-21, Manchester, UK.

Blanche, M. T., Durrheim, K. and Painter, D., 2006. *Research in practice: Applied methods for social sciences*.-2nd Ed. Cape Town: UCT press.

Bray, E., Aoki, K. and Dlugosh, L., 2008. Predictors of learning satisfaction in Japanese online distance learners. *International review of research in open and distance learning* V9 No. 3

Burbles, N. C., 2004. Navigating the advantages and disadvantages of online pedagogy in Haythornthwaite, C. and Kazmer, M. M. (eds.) Learning, culture and community in online education: Research and practice. New York: Peter Lang Publishing, Pages. 1-17.
Cengage Learning.

Callan, V. J. and Bowman, K., 2010. Sustaining e-Learning innovations: A review of the evidence and future directions. Australia: Australian flexible learning framework, Pages. 11

Choy, F.C., 2007. Libraries and librarian-what next? *Library management* V28 No.3, Pages 112-124.

Christensen, C., 2008. Disrupting class: How disruption innovation will change the way the world learns. New York: Mc-Graw Hill.

Clayton, M. Christensen, Horn, B. Michael and Heather, S. 2013. Is K-12 blended learning disruptive? An introduction to the theory of hybrids. Clayton Christensen Institute.

Corrall, S., 2010. Educating the academic librarian as a blended professional: a review and case study. *Library management* V31 No. 8/9, Pages 567-593.

Creswell, J. W., 2009. Research design: Qualitative, Quantitative and Mixed Methods Approaches.-3rd Ed. Los Angeles, CA: Sage Publications.

Cronje, J. And Vorster, B., 2004. Destination-effective e-Learning: Roadmap series. Randburg, South Africa: Knowres Publishing

Cucciare, M.A., Weingardt, K.R. and Villafranca, S., 2008. Using blended learning to implement evidence-based psychotherapies. *Clinical psychology: science and practice* V15, No.4, Pages 299-307

Cunningham, John and Hillier, Emilie, 2013. Informal learning in the workplace: key activities and processes, *Education +Training* V55 No. 1, Pages 37-51.

David, M. & Sutton, C. D., 2004. Social research: the basics. London: Sage Publications.

Davies, D., 2003. *Design content for blended learning solution*. e-Learning Conference, Manchester, 18–19 March.

Dawson, C., 2002. Practical research methods: A user-friendly guide to mastering research. Oxford: How to books.

Denscombe, M., 2012. Research proposal: a practical guide. Berkshire: McGraw Hill Open University Press.

Denzin, N. and Lincoln, Y., 2011. *Handbook of qualitative research*. 4th Ed. Thousand Oaks, CA: Sage.

Dziuban, C. D., Hartman, J. L. and Moskal, P. D., 2004. Blended learning. ECAR Research Bulletin, 7. V2004 Issue 7 [Online] Available http://net.educause.edu/ir/library/pdf/erb0407.pdf

Eke, H. N., 2010. The perspective of e-Learning and libraries in Africa: challenges and opportunities. *Library review* V59 No.4, Pages 274-290.

Fernando, A., López, G.A., Manrique, D and Viñes, J.M., 2005. An instructional model for web-based e-learning education with a blended learning process approach. *British Journal of Educational Technology* V. 36 No. 2 pages 217–235.

Fisher, Colin; Buglear, John; Lowry, Diannah; Mutch, Alistair & Tansley, Carole, 2007, Researching and writing a dissertation-2nd Ed. Harlow; Prentice hall.

Franceschi, L., Lee, R.M., Zanakis, S.K. and Hinds, D., 2009, Engaging group e-Learning in virtual worlds, *Journal of management information systems*, V26 No.1, Pages 73-100.

Garrison, D.R. and Anderson, T., 2003, E-learning in the 21st century: A framework for research and practice. London: Routledge Falmer.

Garrison, D.R. and Kanuka, H., 2004. Blended learning: uncovering its transformative potential in higher education. *Internet and Higher Education*, V7, pp. 95-105.

Giallo, R. and Little, E., 2003. Classroom behaviour problems: the relationship between preparedness, classroom experiences and self-efficacy in graduate and student teachers, *Australian journal of educational and developmental psychology* V3, Pages 21-34.

Greenhow, C., Robelia, B. & Hughes, J.E., 2009. Learning, teaching and scholarship in a digital age: Web 2.0 and classroom research: what path should we take now? *Educational researcher*, V38 No.4, Pages 246-59.

Griffiths, David, 2013, The educational consequences of Bateson's economy of flexibility. *Kybemetes* V42 No. 9/10, Pages 1387-1395.

Gruca, A., 2010. E-Learning in academic libraries. *New review of information networking* V15 No. 1, Pages 16-28 [Online] Available http://dx.doi.org/10.1080/13614571003741395 Accessed on 10th August, 2014.

Guthrie, G., 2010. Basic research methods: An entry to social science research. Los Angeles: Sage publication.

Guthrie, G., 2012, Basic research methods: An entry to social science research. Los Angles: Sage publications.

Gvaramadvze, Iraki, 2012. Developing generic competences in online virtual education programmes at the University of Deusto, Campus-Wide Information systems. V29 No. 1, Pages 4-20.

Hain, S. & Back, A., 2008, Personal learning journal-course design for using weblogs in higher education. *Electronic journal of e-Learning,* V6 No.3, Pages 189-96.

Halabi, A.K.et al., 2010, A South African study comparing the effectiveness of computer-based learning materials and face-to-face teaching. *Meditari Accountancy research* V18 No. 2, Pages 23-37.

Harris, B. R., 2013. Blurring borders, visualising connections: aligning information and visual literacy learning outcomes, *Reference services review* V38 No. 4, Pages 523-535.

Harris, P. Connolly, & Feeney, L., 2009. Blended learning: overview and recommendations for successful implementation. *Industrial and commercial training* V41 No.3, Pages 155-163.

Heather, S. and Horn, M., 2012. 10 Predictions for blended learning in 2013. *The journal transforming education through technology*

Holmes, B. and Gordon, D., 2012. *Research in the information age*. [Online] Available: http://www.comp.dit.ie/dgordon/lectures/research_methods/Research_Methods4.htm Accessed 09 July 2014.

Holy bible. 2011. New International Version (NIV)

ITU. 2001. The Internet in an African LDC: Uganda case study. [Online] Available: http://www.itu.int/ITU-D/ict/cs/uganda/material/uganda.pdf. Accessed 31/08/2013.

Jackson, M.J. & Helms, M., 2008. Student perceptions in hybrid courses: Measuring and interpreting quality. *Journal of Education for Business*, V84 No.1, Pages 7-12.

Kalat, J. W., 2002. Introduction to psychology. Pacific Grove, CA: Wadsworth-Thompson Learning

Katz, Y. J., 2000. The comparative suitability of three ICT distance learning methodologies for college level instruction, *Educational media international*, V37 No.1, Pages 25–30.

Katz, Y. J., 2002. Attitudes affecting college students' preferences for distance learning, *Journal of computer assisted learning*, V18, Pages 2–9.

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

Kumar, R., 2005. Research methodology: A step-by-step guide for beginners. 2nd ed. London: Sage publications.

Kvenild, C. 2012. The future of embedded librarianship: best practices and opportunities, Conference in California on library instruction. Chicago: ACRL

Li, L.F.; Leung, S. and Tam, G. 2007. Promoting information literacy skills through web-based instruction. *Library management* V28 No. 8/9, Pages 531-539.

Liaw, S.S., Huang, H.M. and Chen, G.D., 2007. Surveying instructor and learner attitudes toward e-learning., *Computers & education*, V49, No. 4, Pages 1066-80

Macpherson, A., Homan, G. and Wilkinson, K.. 2005. The implementation and use of e-Learning in the corporate university. *Journal of workplace learning* V17 No. 1/2, Pages 33-48.

Mclean, N. and Lynch, C., 2004. Interoperability between library information services and learning environment-bridging the gaps. *White paper on behalf of the IMS global learning consortium and the coalition of networked information*. 10th /May/2014 [Online] Available https://www.cni.org/wp-content/uploads/2004/05/CNIandIMS_2004.pdf

Melicheríková, Z. and Bušíková, A., 2012. Adaptive E-learning – a Tool to overcome disadvantages of E-learning ICETA. 10th IEEE International Conference on emerging e-Learning technologies and applications. November 8-9, Stará Lesná, the High Tatras, Slovakia.

Merriam, S. 2009. Qualitative research: A guide to design and implementation. San Francisco, CA: Jossey-Bass.

Meyer, K. 2003. Face to face versus threaded discussions: the role of time and higher order thinking. *Journal of Computers and education archive*V7 Issue3, Pages 55-65.

Michael Kathy, 2012. Virtual classroom: reflection of online learning. *Campus wide information systems* V29 No.3, Pages 156-165.

Moore, M.G. 2006. Foreword, in Bonk, C.J. & Graham, C.R. (Eds), The handbook of blended learning, global perspectives, local designs. Sanfrancisco, CA: Pfeiffer.

Nafukho, F. M. and Muyia, M. H. 2013. The World Bank's Africa Virtual University project: a revisit, *European journal of training and development* V37 No.7, Pages 646-661.

Nsubuga, T. and Katamba, P., 2013. Basic research: Simplified for university students. 1st ed. Kampala: Newgo publishers

Ocker, R. J. and Yaverbaum, G.J. 1999. Asynchronous computer-mediated communication versus face-to-face collaboration: results on student learning, quality and satisfaction, group decision and negotiation. Kluwer academic publishers. V8, No.5, Pages 427-440.

OCLC Research, 2013, MOOCs and libraries: new opportunities for librarians The OCLC research channel, online video. *MIS Quarterly*, V25, No. 4, Pages 401-426.

Onguko B.; Jepchumba, L. and Gaceri, P. 2013. For us it was a learning experience: design, development and implementation of blended learning. *European Journal of training and development* V37 No. 7, Pages 615-634.

Osguthorpe, R.T. & Graham, C.R**.** 2003. Blended learning environments definitions and directions. *The Quarterly Review of Distance Education.* V 4 pages 227

Oso, W. Y. and Onen, D., 2008. A general guide to writing research proposal and report: A handbook for beginning researchers. 2nd Ed. Kampala: Makerere University Press

Oye, D.; Salleh, M. and Iahad, N. 2012. The impact of e-Learning in workplace: focus on organisations and healthcare environments. *International Arab journal of e-Technology* V2 No.4.

Pan, M.L. 2008. Preparing literature reviews: qualitative and quantitative approaches-3rd Ed. Glendale; Pyrczak publishing.

Pereira, Jose. A. *et al.,* 2007. Effectiveness of using blended learning strategies for teaching and learning human anatomy, *Medical education* V41, Pages 189-195.

Picciano, A.G., 2009. Blending with purpose: the multimodal model, *Journal of Asynchronous Learning Networks*, V13 No. 1, Pages 7-18.

Piccoli, G.; Ahmad, R. and Ives, B. 2001. Web-based virtual learning environments: a research framework and a preliminary assessment of effectiveness in basic IT skills training models, *Computers & Education*, V49, No. 2, Pages 396-413.

Pickard, A. J., 2007. Research methods in information. London: Facet Publishing.

Pituch, K.A. and Lee, Y.K., 2006. The influence of system characteristics on e-learning use, *Computers & education*, V47, No. 2, Pages 222-44.

Polit, D.F. and Beck, C.T., 2006. Essentials of nursing research. Methods, appraisal, and utilization. (6th Ed.). Philadelphia PA: Lippincott Williams and Wilkins.

Poon, J. 2012. Use of blended learning to enhance the student learning experience and engagement in property education. *Property management* V30 No.2, Pages 129-156.

Punch. F. K. 2005. Introduction to social research: Quantitative and Qualitative Approaches. 2nd ed. Thousand Oaks, CA: Sage Publications

Reyes, Alfonso, 2012. Organisational learning and the effective management of complexity. *Kybemetes* V41 No. 3/4, Pages 318-326.

Rodriguez, M.C., Ooms, A. and Montanez, M. 2008. Students' perceptions of online-learning quality given comfort, motivation, satisfaction, and experience. *Journal of Interactive Online Learning*. V7, Pages 105-125.

Rosenberg, M. J., 2001, e-Learning: Strategies for delivering knowledge in the digital age. New York: McGraw-Hill.

Saade, R.G., Morin, D. and Thomas, J.D.E. 2012. Critical thinking in e-Learning environments, *Computers in human behaviour*, V28 No.5, Pages 1608-1617.

Sanchez, R.A.; Hueros, A.D. and Ordaz, M.G. 2013. e-Learning and the university of Huelva: a study of WebCT and the technological acceptance model, *Campus wide information systems* V30 No.2, Pages 135-160.

Selim, H.M., 2007. Critical success factors for e-learning acceptance: confirmatory factor models, *Computer and education* V49, Pages 396-413. Elsevier Limited

Shank, J.D. and Bell, S. 2011. Blended librarianship: envisioning the role of librarian as educator in the digital information age, *Reference and user service quarterly* V51 Issue2. Pages 105-110

Ssekakubo, G.; Suleman, H. and Marsden, G. 2013. Designing mobile LMS interface: learners' expectations and experience. *Interactive technology and smart education* V10 No.2, Pages 147-167.

Staker, H. and Horn, M., 2012. Classifying K-12 Blended Learning. San Mateo, CA: Innosight Institute, Inc.

Stangor, C., 2011. Research methods for the behavioural sciences.-4th Ed. Belmont: Wadsworth, Cengage Learning.

Sumak, B., Hericko, M., and Pusnik, M., 2011. A meta-analysis of e-Learning technology acceptance: the role of user types and e-Learning technology types. *Computers in Human behaviour,* V27, Pages 2067-77.

Sun, P., Tsai, R. J., Finger, G., Chen, Y. and Yeh, D., 2008. What drives successful e-learning? An empirical investigation of the critical factors influencing learner satisfaction. *Computers & Education*, V50, Pages 1183-1202.

Tait, A. and Mills, R. 1990. The convergence of distance and conventional education patterns of flexibility for the individual learner. London: Monografi Publisher.

Taylor, S.J. and Bogdan, R. 1998. Introduction to qualitative research methods: a guide and resource.-3rd Ed. New York: John Wiley & Sons.

Trochim, W M.K. and Donnelly, J. P., 2008. Research methods knowledge base.-3rd Ed. Mason: Cengage learning.

Tuchler, M., 2013. Duke Librarians aid MOOCs with technology, research, *The chronicle.*

Tynjala, Paivi & Hakkinen, Paivi, 2005. e-Learning at work: theoretical underpinnings and pedagogical challenges. *The journal of workplace learning* V17 No. 5/6, Pages 318-336

UCU. 2013a. Current state of e-Learning at UCU. Updated and copyrighted 2013 http://elearning.ucu.ac.ug/. Accessed on 27/08/2013

UCU. 2013b. Arua campus. Updated and copyrighted 2013. Available: http://www.ucu.ac.ug/ucunew/index.php/en/ucu-academics/other-campuses/arua-campus. Accessed on 26/08/2013

UCU. 2013c. Historical background. Updated and copyrighted 2013. Available: http://www.ucu.ac.ug/ucunew/index.php/en/home/about-ucu/ucu-history. Accessed 29/08/2013

UCU. 2013d. Mbale campus. Updated and copyrighted 2013. Available: http://www.ucu.ac.ug/ucunew/index.php/en/ucu-academics/other-campuses/about-mbale-campus Accessed on 26/08/2013

UCU. 2013e. Bishop Barham University College home page. Updated and copyrighted 2013. Available: http://bbuc.ucu.ac.ug/?page_id=2. Accessed on 26 August 2013

UCU. 2013f. Kampala campus. Updated and copyrighted 2013 Available: http://www.ucu.ac.ug/admissions/index.php?option=com_content&view=category&layout=blog&id=5&Itemid=5. Accessed on 29 October, 2013

Uhomoibhi, J.O. 2006. Implementing e-Learning in Northern Ireland: prospects and challenges. *Campus wide information systems* V23 No.1. Pages 4-14

Ullrich, C., Borau, K., Luo, H., Tan, X., Shen, L. and Shen. R. 2008. Why Web 2.0 is good for learning and for research: principles and prototypes., Paper presented at the 17th International Conference on World Wide Web, Beijing, 2 February.

Uzun, L., 2012. The internet and computer-mediated artefacts for foreign language learning and practice, and intercultural communication: MOODLE, second life, and others, *Procedia-social and behaviour sciences,* V46 2012 Pages 3296-300.

Valkanos, E. and Fragoulis, L. 2007. Experiential learning - its place in in-house education training. *Development and learning in organisations* V21 No. 5, Pages 21-23

Virtanen P., Myllarniemi, J. and Wallander, H. 2013. Diversifying higher education: facilitating different ways of learning. *Campus-Wide information system* V 30 No. 3

Wangusa T., 2007. Essentials of research methodology: In human and social sciences. Kampala: Bow and Arrow publishers limited.

Wu, Kerry, 2013. Academic libraries in the age of MOOCs., *Reference services review* V41 No.3. Pages 576-587

Yin, R. K., 2009. Case study research: design and methods. 4th ed. Thousand Oaks, CA: Sage publications.

Zhang, Y., Fang, Y., Wei, K.K. and Wang, Z., 2012. Promoting the intention of students to continue their participation in e-Learning systems: the role of the communication environment, *Information technology and people*, V25 No.4, Pages 356-75.

Consent form

<table>
<tr><td colspan="2" align="center">UNIVERSITY OF PRETORIA

FACULTY OF ENGINEERING, BUILT ENVIRONMENT

AND INFORMATION TECHNOLOGY

FACULTY COMMITTEE FOR RESEARCH ETHICS AND INTEGRITY</td></tr>
<tr><td colspan="2" align="center">APPLICATION FOR APPROVAL OF A RESEARCH PROJECT</td></tr>
<tr><td colspan="2">This application form must be read with the Regulations for Research Ethics and Integrity and completed. Important: Each item must be completed.</td></tr>
<tr><td>Date of submission</td><td>28th August, 2014</td></tr>
<tr><td colspan="2">1. DETAILS OF APPLICANT</td></tr>
<tr><td>1.1 Applicant's surname</td><td>GALINNYA</td></tr>
<tr><td>1.2 Applicant's initials</td><td>STEPHANAS</td></tr>
<tr><td>1.3 Applicant's title (prof, dr, mr, ms, other)</td><td>Mr.</td></tr>
<tr><td>1.4 Postal address (where approval is to be sent)</td><td>Learning Commons Coordinator
Hamu Mukasa Library
Uganda Christian University
P. O. Box 4, Mukono-Uganda</td></tr>
<tr><td>1.5 E-mail address</td><td>galinnyastephan@gmail.com</td></tr>
<tr><td>1.6 Telephone</td><td>+256 774 511 307</td></tr>
<tr><td>1.7 School in Faculty (Engineering, Built Environment or Information Technology)</td><td>Engineering, Built Environment and Information Technology</td></tr>
<tr><td>1.8 Department</td><td>Information Technology</td></tr>
<tr><td>1.9 Study leader/promotor (if the applicant is a student) name, address, e-mail address</td><td>Dr. Martie Van Deventer (MvanDeve@csir.co.za) and Dr. Heila Pienaar (Heila.pienaar@up.ac.za)</td></tr>
<tr><td>1.10 Names, addresses, e-mail addresses and capacity of co-researchers/ students/ lecturers involved with the project</td><td>Stephanas Galinnya(MIT StreamB-Student)
Learning Commons Coordinator
Hamu Mukasa Library
Uganda Christian University
P. O. Box 4, Mukono-Uganda
e-mail: galinnyastephan@gmail.com</td></tr>
<tr><td colspan="2">2. RESEARCH PROJECT DETAILS</td></tr>
<tr><td>2.1 Title of research project</td><td>Developing Library products and services to support blended learning at main campus Mukono and affiliated College Campuses of the, Uganda Christian University</td></tr>
<tr><td colspan="2">2.2 Furnish as brief outline the following so that the relevant ethical aspects can be identified clearly:
•   Statement of the problem
•   Statement of objectives</td></tr>
</table>

- Experimental methods/ measuring instruments
- Materials/Apparatus
- Profile of research subjects/target group/animals/environmental factors

Statement of the problem

UCU and its affiliated college campus libraries are currently starting to implement blended learning. This provides the library with an opportunity to enhance its services and provide proper support for these blended learning initiatives. It is anticipated that this research project would help list all the hurdles to overcome before the UCU library will have a fully functional blended learning support initiative.

The research will strive to address the following objectives:
- Blended learning and how does it differ from e-Learning
- UCU's strategy regarding the implementation of blended learning
- The current state of online learning support services provided by UCU library and its affiliated colleges
- A need for similar services at UCU, further services that UCU and the libraries of its affiliated colleges develop to support online learning
- The benefits and the challenges of online learning support services to library patrons at UCU and its affiliated colleges
- The strategies the library can apply to overcome challenges and sustain online learning support services

2.3 Is a research questionnaire/ survey/interview used? (Yes or No)	YES
2.4 If yes, have you submitted this with your application? (Yes, No or Not Applicable)	YES

3. RESEARCH SUBJECTS
If the project involves people, either individually or in groups, complete this section

3.1 Does the study involve people as informants, or does it involve people as research subjects? (Tick one)	Informants	∫	Research subjects	

3.2 Describe possible safety and health implications that participation in project may pose

3.3 Expected duration of participation of subjects in the project	It will take 15-30 minutes depending on different categories of participants

3.4 Describe the manner in which confidential information will be handled and confidentiality assured

With the matter of data collected there will to be an agreement between the researcher and respondents that personal information given will be limited. Private information will not be made accessible to anyone. The researcher will not reveal information in

any way that could identify the respondents.

All data will be stored in password-protected files.

All research data will be stored and maintained for a period of 15 years.

3.5 Remuneration offered to subjects for participation	No remuneration will be offered.
If the project involves animals, complete this section	
3.6 Describe possible safety and health implications participation in the project may hold	
3.7 Expected duration of participation by animals in the project	
3.8 Care/housing/feeding of the animals during the project	
4. ENVIRONMENTAL IMPACT	
If the project may have a potentially detrimental environmental impact, complete the following	
4.1 Potential impact on the environment	None
4.2 Expected duration of the impact	N/A
4.3 Locality of the project	
4.4 Preventive measures	
5. DISSEMINATION OF DATA	
Method of publishing/application of the results	Dissertation, conference papers and a journal article.
6. SUBMISSION CHECKLIST	
6.1 Have you submitted the Declaration by the Researcher? (See the website for this form)	YES
6.2 Have you submitted an example of the informed consent form to be completed by each participant? (See the website for an example)	YES

Researcher Declaration

Hereby I. **Stephanas Galinnya**……………… in my capacity

as………**Researcher**……………………………………., declare that

1   Research subjects will be informed, information will be handled confidentially, research subjects reserve the right to choose whether to participate and, where applicable, written permission will be obtained for the execution of the project (example of permission attached).

2   No conflict of interests or financial benefit, whether for the researcher, company or organisation, that could materially affect the outcome of the investigation or jeopardise the name of the university is foreseen.

3   Inspection of the experiments in loco may take place at any time by the committee or its proxy.

4   The information I furnish in the application is correct to the best of my knowledge and that I will abide by the stipulations of the committee as contained in the regulations.

5   Signed: __   ___   Date: ____27/08/2014__

Informed consent form
(Form for research subject's permission)

1   Title of research project: **Developing library products and services to support blended learning at Uganda Christian University its affiliated campuses**

2   I ………………………………………… hereby voluntarily grant my permission for participation in the project as explained to me by **Stephanas Galinnya**

3   The nature, objective, possible safety and health implications have been explained to me and I understand them.

4   I understand my right to choose whether to participate in the project and that the information furnished will be handled confidentially.

5   I am aware that the results of the investigation may be used for the purposes of publication.

6   I am aware that this session will be recorded, and I agree to this. (Please tick)

      Yes   ☐

7   Upon signature of this form, you will be provided with a copy.

      Signed: _____   Date: _____

      Witness: _____   Date: _____

      Researcher: _____   Date: _____

Attachment 1: Questionnaire to Library Staff

Dear [Library Staff – personalise]

I am conducting a survey as partial fulfilment of the requirements of a Masters Degree in Information Technology for Librarians (MIT) at the University of Pretoria, South Africa. My research topic is entitled: ***Developing library products and services to support blended learning at Uganda Christian University and its affiliated campuses.***

You have been identified as one of the stakeholders who could assist in providing us (the university library) with valuable information regarding library products and services to support blended learning. This is a request for you to complete the attached questionnaire at your earliest convenience. It should not take you more than 20-25 minutes to complete the questionnaire.

With your feedback, we can ensure that our university maintains the highest quality instruction. This is your chance to make a difference!

There are no anticipated risks for participating in this survey.

You may also decline to participate. If you prefer not to participate it would be appreciated if you could nominate a colleague who would be able to contribute towards this study. You may omit any question you are not comfortable to answer, and you may quit the questionnaire at any time.

Should you decide to participate and make a contribution towards the knowledge to be collected you can be assured that your responses will be kept confidential and you will not be individually identified. The data collected from you will be combined with that of the other respondents and analyzed only as a one of the group.

Thank you for taking the time and effort to consider completing the questionnaire. We would really appreciate your participation. Your contribution will assist us in understanding the issues to address and to improve the blended learning services to all concerned.

Stephanas Galinnya

Learning Commons Coordinator

Hamu Mukasa Library

Uganda Christian University

P. O. Box 4, Mukono

E-mail: galinnyastephan@gmail.com or sgalinnya@ucu.ac.ug

Cell Phone: +256 774 511 307

Questionnaire for Library Staff at the Uganda Christian University

Please answer the following questions as clearly as you can by checking the box or line, as appropriate.

Services delivered

_____

_____

Are you (check one)?

Full Time ☐

Casual ☐　　　　　　　　　　　　　　**Position (check one)**

Voluntary ☐　　　　　　　　　　　　Volunteer ☐

　Other: _____　　　　　　　Casual staff ☐

　　　　　　　　　　　　　　　　　　Library attendant ☐

　　　　　　　　　　　　　　　　　　Library Assistant ☐

　　　　　　　　　　　　　　　　　　Assistant Librarian ☐

Total number of years you have worked in an academic library　　　　Senior Assistant Librarian ☐

　　　　　　　　　　　　　　　　　　Librarian ☐

_____　　Other: 　　_____

Introduction

Blended learning is the teaching practice where students and staff have some face-to-face class meetings, but also have some online content integrated to support the class sessions. Blended learning also makes provision for online instruction but online is never the only method of contact between lecturers and students.

I would like to ask you some questions regarding your experience with library products and services that support blended learning. Please answer the questions that apply to you, and your experience with the blended format.

1. Do you use/ have you used any of the following instructional technologies?

Categories of Instructional Technologies	Currently Use	Planning to use	Interested in Using	Not planning to use
Social networking (Twitter, Facebook, MySpace)				
Content Management (Lecture Capture, course wiki, blogs, RSS feeds, Podcasts)				
Communication (chat, web/video conferencing, Skype)				
Plagiarism Detection Software (e.g. Turnitin.com, Web Assign)				
Online circulation services, Online Patron update registration				
e-Resources services; e-Journals, e-Books				
Other—explain				

2. Do you require training before you would be able to provide any of the products and services listed above? Please explain.

   _____
   _____
   _____

3. What do you regard as the <u>most</u> <u>positive</u> aspects of delivering library services and that will support the blended teaching/ learning format?

_____
_____
_____
_____

4. What would be the <u>least positive</u> aspects of delivering library services and that will support the blended teaching/ learning format?

_____
_____
_____
_____

5. What advice would you give to a new librarian considering to support a blended learning course for the first time?

_____
_____
_____

Attachment 2: Questionnaire to Lecturers/ Academic Staff

Dear [Lecturers and Academic Staff – to be personalised]

I am conducting a survey as partial fulfilment of the requirements of a Masters Degree in Information Technology for Librarians (MIT) at the University of Pretoria, South Africa. My research topic is entitled: ***Developing library products and services to support blended learning at Uganda Christian University and its affiliated campuses.***

You have been identified as a lecturer who could assist in providing us (the university library) with valuable information regarding your experiences with blended learning at UCU. . This is a request for you to complete the attached questionnaire at your earliest convenience. Your contribution will assist us in understanding the issues to address and to improve the blended learning services to all concerned.

It should not take you more than 20 – 30 minutes to complete the questionnaire.

With your feedback, we could ensure that our university maintains the highest quality instruction. This is your chance to make a difference!

There are no anticipated risks for participating in this survey.

You may decline to participate. If you prefer not to participate it would be appreciated if you could nominate a colleague who would be able to contribute towards this study. You may omit any question you are not comfortable to answer, and you may quit the survey at any time.

Should you decide to participate and make a contribution towards the knowledge to be collected you can be assured that your responses will be kept confidential and you will not be individually identified. Your data will be combined with that of the other respondents and analyzed only as a group.

Thank you for taking the time and effort to complete this survey. We really appreciate your willingness to participate.

Stephanas Galinnya

Learning Commons Coordinator

Hamu Mukasa Library

Uganda Christian University

P. O. Box 4, Mukono

E-mail: galinnyastephan@gmail.com or sgalinnya@ucu.ac.ug

Cell Phone: +256 774 511 307

Questionnaire for Lecturers and Academic Staff at the Uganda Christian University

Please provide the following personal information

Your Campus	**Course(s) Taught**
_____	_____
	_____
Your Faculty	_____
_____	
	_____

Are you (check one)?

Full Time ☐

Part-Time ☐

Other: _____

Position (check one)

Tutorial Assistant ☐

Lecturer ☐

Senior Lecturer ☐

Associate Professor ☐

Professor ☐

Total number of years teaching blended learning

Other: _____

Introduction

Blended learning is the teaching practice where students and staff have some face-to-face class meetings, but also have some online content integrated to support the class sessions, Blended learning also makes provision for online instruction but online is never the only method of contact between lecturers and students. You have been identified as a Lecturer/ Academic staff member who supports the principals of (and have been implementing) blended learning.

I would like to ask you some questions regarding your blended learning teaching experience. Please answer the questions that apply to you, and your experience with the blended format.

1. Which blended learning/ e-Learning platform or application are you using? (Please add a tick (√) or a cross (X) next to the correct answer.)

Moodle	
Blackboard	
Other (please specify)	

2. On average, how many students do you feel you can effectively teach using the blended format? (Please add a tick (√) or a cross (X) next to the correct answer.)

Less than 20	
20-30	
31-50	
51-80	
81 - 100	
101 - 200	
No limit	

3. On average, how satisfied you have been with your blended courses? (Add a tick (√) or a cross (X) below the correct answer.)

Very Satisfied 5	Generally Satisfied 4	Neutral 3	Generally Dissatisfie d 2	Very Dissatisfied 1

Please explain your answer:

_____
_____
_____

4. If, on question 3, you indicated you have been satisfied – go to question 5. If you are dissatisfied with your blended experience, what do you feel is the single most important aspect that has contributed most to your dissatisfaction?

_____
_____
_____
_____

5. In the future, *if you had a choice,* would you consider teaching a course in the blended format?

Yes definitel y 5	Most probably 4	Neutral 3	I suspect not 2	Definitely not 1

(Add a tick (√) or a cross (X) beneath the correct answer.)

Please explain your answer:

_____
_____
_____

1. Consider the <u>amount</u> of interaction between yourself and the students in your blended class. How would you say does it compare to the amount of interaction in a face-to-face course with no online components?

Increased 5	Somewhat increased 4	About the same 3	Somewhat decreased 2	Decreased 1

Please explain your answer:

_____
_____
_____
_____

2. Consider the <u>quality</u> of the interaction in your blended class. How would you say does it compare with the quality of interaction in a face-to-face course with no online components?

Much Better 5	Better 4	About the same 3	Worse 2	Much worse 1

Please explain your answer:

_____
_____
_____
_____
_____

3. To what extent are you using any of the following instructional technologies in your blended class?

Categories of Instructional Technologies	Currently Use	Planning to use	Interested in Using	Not planning to use
Social networking (Twitter, Facebook, MySpace)				
Content Management (Lecture Capture, course wiki, course blogs, RSS feeds, Podcasts)				

Online communication (chat, web/video conferencing, Skype)				
Plagiarism Detection Software (e.g. Turnitin.com, Web Assign)				
Other—please add				

4. How does your assessment of student achievement in blended classes differ from your face-to-face classes with no online components?

_____
_____
_____

5. What are the <u>most</u> <u>positive</u> aspects of teaching a course using the blended format?

_____
_____
_____
_____

6. What are the <u>least positive</u> aspects of teaching a course using the blended format?
_____
_____
_____
_____

7. Is there any additional support, technology, or training that you feel could be provided to help you in your blended courses? Please explain.

_____
_____
_____
_____

8. What advice would you give to a faculty member considering a blended course for the first time?

Attachment 3: Interview survey for Heads of Departments/ Faculty Deans

E-mail message
Subject: Blended learning support research - request for an interview
Dear [Prof., Assoc. Prof., Dr., Rev., Can., Mr., Mrs., Ms. - personalised]

I am conducting a survey as partial fulfilment of the requirements of a Masters Degree in Information Technology for Librarians (MIT) at the University of Pretoria, South Africa. My research topic is entitled: ***Developing library products and services to support blended learning at Uganda Christian University and its affiliated campuses.***

You have been identified as one of the stakeholders who could assist in providing us (the university library) with valuable information regarding the university's vision for blended learning. This is a request for you to make yourself available to be interviewed at your earliest convenience. With your feedback, we can ensure that our university maintains the highest quality of instruction. This is your chance to make a difference!

I have attached the interview survey for your information. This is to familiarize you with the type of questions that will be asked during the interview. The interview should take no more than 30 minutes to complete.

There are no anticipated risks for participating in this survey.

You may also decline to participate. If you prefer not to participate it would be appreciated if you could nominate a colleague who would be able to contribute towards this study. You may omit any question you are not comfortable to answer, and you may also end the interview at any time.

Should you decide to participate and make a contribution towards the knowledge to be collected you can be assured that your responses will be kept confidential and you will not be individually identified. The data collected from you will be combined with that of the other respondents and the analysis will be completed for the group.

Thank you for considering the request. We'll really appreciate your willingness to participate. Your contribution will assist us in understanding the issues to address and to improve the blended learning services to all concerned.

Stephanas Galinnya
Learning Commons Coordinator
Hamu Mukasa Library
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Blended learning survey to Administrators/Heads of Departments (HoD)/ Faculty Deans at the Uganda Christian University

Department/ Faculty: _____**Position**: _____

Introduction/ Background

Blended learning is the teaching practice where students and staff have some face-to-face class meetings, but also have some online content integrated to support the class sessions. Blended learning makes provision for online instruction but online is never the only method of contact between lecturers and students.

Please answer the following questions as clearly as you can and from your own experience:

1. To what extent do you practice blended learning yourself?

2. To what extent would you be prepared to support the introduction of more blended learning initiatives at UCU?

3. How far would you defend blended learning to the finance committee to fund the services which can promote blended learning at UCU?

4. To what extent would you support any lecturer wanting to introduce blended learning?

5. What advice would you give to lecturers who would like to start implementing blended learning here at Uganda Christian University?

6. When thinking about today's student: What is your opinion regarding 'familiarity with technology'?

7. In your opinion: To what extent does familiarity with technology affect the students' ability to take advantage of online components in blended learning?

8. To what extent should UCU support students so that they could make use of online learning components?

9. What services should the library introduce to improve its services and products to support blended learning at UCU?

10. What advice would you give to the library staff members wanting to develop products and services that support blended learning?