LIBRARY AS A COLLABORATIVE PARTNER IN TEACHING AND LEARNING: ROLE AND CONTRIBUTION OF THE LIBRARY IN E-LEARNING AT MONASH UNIVERSITY.

MINI DISSERATION

BY

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DECLARATION

I, Sibusisiwe K. Mgquba declare that this mini-dissertation is my original work. I am not aware of any dissertation similar to mine that been submitted for any academic award to any institution. To the best of my knowledge, this research is original and the first to be submitted on this topic in a South African university.

Signed:……Date:……

Sibusisiwe K. Mgquba

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LIST OF ABBREVATIONS AND ACRONYMS

ALA: American Library Association

ACRL: Association of College and Research Libraries

ANZIIL: Australian and New Zealand Institute for Information Literacy

CAL: Computer Assisted Learning

CBT: Computer Based Training

IBT: Internet Based Training

ICTs: Information and Communications Technologies

IFLA: International Federation of Library Associations

IL: Information Literacy

IRLS: Information Research and Learning Skills

LIS: Library and Information Science

LSA: Learning Skills Adviser

MSA: Monash South Africa

MOOCS: Massive Open Online Courses

MU: Monash University

MUL: Monash University Library

RSDF: Research Skills Development Framework

SL: Subject Librarian

VLEs: Virtual Learning Environments

WWW: World Wide Web

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ABSTRACT

Technology enhanced learning has become one of the dominant modes of teaching and learning in higher education today. Indeed, it seems that no higher education institution can survive without embracing the new educational technologies that have come to define teaching and learning in the knowledge era. E-learning as such, has become one of the dominant forms of delivering teaching and learning content. Rooted in established pedagogical foundations, e-learning adopts the constructivist approach to teaching and learning which attributes the construction of knowledge to learner experiences. Thus learners construct their own understanding and knowledge through interaction with others. As universities adopt the e-learning approach, libraries are also forced to find ways to deliver their content in ways and in platforms where the new generation of students interact.

The focus of this research is to find out how Monash University Library has risen to the challenge of integrating its vast resources and services through the medium of e-learning, especially pertaining to the delivery of Information Research and Learning Skills (IRLS). The research aims to find out what the challenges, strengths and limitations are in this mode of information and content delivery. But the most pertinent question the study seeks to answer is "What is the effectiveness of e-learning in the provision of IRLS".

The results of the study culminate in a few suggestions by the researcher which could be employed to better assess the effectiveness of e-learning in IRLS.

CHAPTER ONE

INTRODUCTION AND AIM OF THE STUDY

1.1 Introduction and background to the study

The digital century necessitates that universities change their mindset about ways and means of delivering education and enhancing teaching and learning. The development of various information and communication technologies and the widespread adoption, and use of learning management systems in academic environments is one of the ways universities try to deliver quality education and to create an interactive and collaborative learning environment with students. The Horizon Report, which is a series of reports that predict the major influential technologies that are likely to impact on research, teaching and learning in higher education, is one of the most useful publications in understanding the impact emerging technologies have on higher education. The 2013 Horizon Report in particular, reports amongst other trends, the introduction and widespread use of Massive Online Opens Courses (MOOCS), tablet computing, learning analytics etc., all of which are Information and Communications Technology (ICT) enabled and facilitated trends and which have and will have a major impact on higher education. The report notes that concepts like open content, open data, and open resources, along with notions of transparency and easy access to data and information is becoming a value (Johnson, L. et al., 2013). In order that the services offered by educational establishments make the best use of the evolving technologies, it is worth looking at this report and consider adopting some of these technologies. Not only that, but it is also worth looking at our roles and functions as librarians and see if we will fit in this new technologically charged academic landscape.

According to Chickering and Gamson (1987), improving learning and teaching in higher education requires that the teacher adheres to certain principles for good practice which they state as the following;

- Encourage contact between students and staff.
- Develop reciprocity and cooperation among students.
- Use active learning techniques.

- Respect diverse talents and ways of learning.

E-learning as such, is one of several pedagogical approaches to learning which employ such techniques and technologies. It is electronically assisted or facilitated delivery of content. Meredith and Burkle (2006) define e-learning as learning facilitated by internet and World Wide Web (WWW) technologies that creates connectivity between people and information, and creates opportunities for social learning approaches. Catherall (2005) says that e-learning could be defined as any technology allowing for the delivery of learning resources or communication between tutor and student. This wider view of e-learning reflects the use of audio, visual and other media. The adoption of e-learning in universities has had major implications for academic libraries and librarians. As such, libraries and librarians have had to consider their professional orientation and to find innovative ways to contribute to academic scholarship through the use of ICTs. According to Markgren, Eastman and Bloom (2010), academic librarians can contribute to the teaching and learning experience through their involvement in instruction, technology, and research initiatives as well as their connection to academic staff. They contend that librarians have the ability to adapt to their changing roles as necessitated by the changes in resources, infrastructure and student needs.

E-learning and blended learning, which is a mix between online learning and face-to-face learning, are increasingly becoming the dominant delivery methods of education, especially in distance education. Add to this the vastness of information on the internet, it becomes apparent that the monopoly libraries and librarians had on access to information through a largely custodial role, no longer exists. Therefore, the need to re-skill and reinvent ourselves as librarians becomes even more urgent. It is vital that librarians find innovative ways to add a meaningful contribution to teaching and learning. Fortunately, ICTs, coupled with the skills in research and information gathering and evaluation, which librarians already possess, can provide plenty of opportunities for librarians to do this. Freeman (2007) asserts that libraries must experiment with new ways of supporting the academic community and must be flexible in order to accommodate evolving information technologies. They must join with other teaching and learning activities to develop new approaches making use of a wired or wireless environment.

1.2 Problem statement

Libraries and librarians are faced with a rapidly evolving higher education landscape, necessitated by equally rapidly evolving ICTs. Traditional library science degrees and related qualifications have not quite equipped librarians and information professionals in handling this change, nor has succession planning prepared librarians of today for these ICTs. However, this change doesn't have to be a bad thing for librarians. It also brings with it a lot of opportunities that, if they're willing, librarians can embrace and thus become inventive in employing these emerging technologies to enhance their skills and profession. Unless it reinvents itself, the Library and Information Science (LIS) profession is in danger of being engulfed by the internet and other ICTs. Having said that, not all information on the internet is necessarily valuable for the purposes of teaching and learning. As Ward (2010) puts it, we as a profession now accept that the increasing volume of information is only of value to an academic community when it is employed in a meaningful way within the process of learning. As much as information is widely available and accessible out there, Information Literacy (IL) has never been more pertinent as it is right now. Acquiring, selecting, disseminating, evaluating and using information are still skills that are unique to librarians and through information literacy teaching and training, librarians can still offer valuable services in their academic environments. What ICTs and the internet bring to the table is a plethora of technologies of unstructured, unevaluated information.

Therefore, in their quest to use technology to blend their resources and services within their academic institutions, librarians can perhaps ask the following questions;

- How do librarians utilize their existing skills in information management whilst using the best of these emergent ICTs for the betterment of their academic environments?
- What opportunities do these emergent ICTs offer to librarians to enhance information literacy?
- What is the role librarians can play in e-learning initiatives within their academic environments?
- What collaborative initiatives can librarians explore with faculty to enhance learning and teaching?

1.3 Aims and objectives of the study

The main objective of this study is to examine the role and contribution of Monash University Library (MUL) in teaching and learning through e-learning. Focus is given to Monash University Library's e-learning strategy and initiatives taken to fulfil this strategy. E-Learning has provided Monash University Library with the opportunity and a platform to add a meaningful contribution to research, teaching and learning. However, this contribution has not been without challenges. There has been a constant need to revise and reevaluate the services the library offers. Also, in order to reach as many students as possible, the library saw e-learning as one of the tools it can use to enhance its services. This study therefore, looks at the delivery of Information Research and Learning Skills (IRLS) through e-learning. It also explores the challenges Librarians and Learning Skills Advisers face in e-learning content creation and delivery. It suggests other ways in which academic libraries and librarians in general, can use e-learning to reach a wider audience of students, which traditional ways of delivering information services have had difficulty doing. Most importantly, it looks at the way librarians can diversify their skills and explore new areas within the higher education landscape.

1.3.1 Background of Monash University, its campuses and Library

Monash University (MU) is an Australian university named after Sir John Monash, a prominent engineer and public administrator. It was established in 1958 in the State of Victoria with a primary focus on science and technology. It soon grew and expanded its education and research focus to offer other sciences and disciplines. Monash University is a founding member of the Group of Eight, a coalition of Australia's most prestigious and research intensive universities. Monash University has to date, a student enrollment of over 60, 000. It has eight campuses, six in Australia, one in South Africa and another in Malaysia. The two international campuses are much smaller and have both been in existence for less than 15 years. The curriculum and practically most of the programme offerings are the same across campuses. However, these satellite campuses do not offer all the programs that the main university does due to their size and age. However, in terms of facilities, teaching and learning experiences, the University tries to offer a uniform experience for all its students. Therefore all the libraries across the campuses have exactly the same layout, facilities,

systems, databases, resources etc., only the staff complement differs. Policies and procedures, except where the jurisdiction of a country affects them are also the same.

With specific reference to the Library, the Monash University Library's 2013 Annual Plan titled "Strengthening Scholarship" is one of the documents that inform the mission, vision and direction the library wants to take to support and facilitate academic scholarship and to contribute to the overall mission and vision of the university. "The ways in which Monash University Library has embraced the future are made clear in this plan, with strategies relating to systems transformation, research skills development, e-Learning, research data management and repository and publishing activity" (Monash University, Library, 2013). Amongst its strategic priorities, the Library, through its e-Learning strategy, aims to support the overall University's Digital Education Strategy, thus strengthening academic scholarship. The Library has been labeled as one of the most innovative and forward thinking departments at Monash. Under the direction of the University Librarian, the Library has firmly positioned itself as an equal partner in academic scholarship through its many innovative initiatives. Focusing on e-learning and information literacy (Information Research and Learning Skills, as it is referred to at Monash) specifically, this paper aims to look at some of these initiatives.

1.4 Research questions

To achieve the objectives of this study, the following main question will guide the scope of the study;

How has Monash University Library used e-Learning to enhance Information Research and Learning Skills? The following sub-questions will further inform this study;

- **What role has Librarians and Learning Skills Advisers played in teaching and learning through e-Learning at MUL?**
- **What measures were used to assess the effectiveness of e-Learning in IRLS?**
- **What challenges do Librarians and Learning Skills Advisers encounter in creating e-Learning content for IRLS?**
- **What are the strengths and limitations of e-Learning in the provision of IRLS?**

1.5 Research methodology

The methodology employed for this study is of the empirical nature. Empirical research, according to Punch (2006) means research that is based on direct experience or observation of the world. So to answer an empirical question is to obtain direct, observable information from around you rather than theorizing, reasoning or arguing from first principles. Observable information therefore comes in the form of data, 'observable data'. Data itself comes in two forms, qualitative and quantitative data. Quantitative research, according to O'Leary (2004) is often described as an objective search for singular truths that relies on hypotheses and variables, and is large scale. On the other hand, qualitative research is said to be a subjective, value-laden, biased, and ad hoc process that accepts multiple realities through the study of a small number of cases.

Guided by the empirical framework, my study will be biased more towards the qualitative nature of inquiry.

1.5.1 Overview of literature

The literature review is a brief synopsis of the research that has been done by different authors which covers but is not limited to the fields on the globalization in higher education, educational technologies, e-learning, blended learning, academic libraries etc. The changing environment of higher education has necessitated a remodeling in the way education is delivered. Coupled with learner demands and emergent ICTs, higher education institutions are trying to incorporate new learning pedagogies with old ones in order to produce lifelong learners who are able to adapt to the ever changing knowledge society. Laurillard (2002) maintains that the knowledge society is generating knowledge industries which are producing additional competitive pressures of traditional institutions of higher education and if these institutions wish to respond to these demands, they need to answer these two questions;

- How should the curriculum balance expert knowledge and practitioner knowledge?
- To what extent is a degree course a long-term grounding for an individual? (Laurillard, 2002:134).

Authors like Clegg, Hudson and Steel (2003) warn against what they call the 'irresistible power of globalization and the determining effect of technology". They maintain that if we are to understand the impact of technologies on pedagogy, we need to draw on experience and knowledge of pedagogic repertoires, practical wisdom and control of the curriculum, rather than rely on over-deterministic accounts of global tendencies. Guri-Rosenblit (2005) supports this notion when she says that the discourse on new technologies suffers from the Tower of Babel syndrome – a confusing language and misleading conclusions emanating from the fact that people refer to totally different functions and roles while using the same generic terms. Njenga and Fourie (2010), are some of the voices adding to the discontentment with this new discourse. Bluntly put, they reckon that "the enthusiasm to use technology for endless possibilities has led to the belief that providing information automatically leads to meaningful knowledge creation; hence blurring and confusing the distinction between information and knowledge. This is one of the many misconceptions that emerged with e-learning" (Njenga & Fourie, 2010:201).

However, there is just a much research on the advantages of e-learning and educational technologies and the proponents of these learning technologies have much to say about them. What is evident is that these ICTs are going to continue to shape the academic landscape and therefore, we have to find a way to incorporate them into teaching and learning but they should be informed by underlying pedagogical principles.

1.5.2 Overview of chapters

The study is divided into five chapters. Chapter one is the introduction and background to the study, detailing the aim of the research and the research questions the study seeks to answer.

Chapter two focuses on the review of literature. E-learning is a relatively new field in higher education so it is important to get a basic understanding of when and how it started. Definitions of e-learning are explored in this chapter. Computer assisted training, internet or web based training are all terms that will be mentioned in this chapter which is divided into the following five themes.

- e-Learning: history and background

- e-Learning in higher education
- e-Learning and academic libraries
- Applying e-Learning to Information Literacy
- Blending learning approaches: e-Learning and blended learning

Chapter three is the research methodology chapter which details the method the researcher used to achieve research objectives.

Chapter four presents and discusses the findings from the respondents of the questionnaire which was distributed as part of the study.

Chapter five makes a summary of the findings, draws conclusions and make recommendations.

1.6 Limitations of the study

Although the focus of this research is on e-learning at Monash University Library, the researcher would like the reader to bear in mind that most of these initiatives are implemented at the mother institution in Australia and then rolled out to all campuses. So, direct involvement in the policy development and implementation plans is not always possible for staff in the Malaysian and South African campuses. The role and contribution that librarians make to e-learning therefore differs with each campus and geographical location. Other factors to bear in mind besides geographical location are culture, language, student and staff population etc. when evaluating these roles.

1.7 Assumptions

This research is focused on e-learning in academic libraries only. Where the word “libraries” is used, it must be assumed to be in the academic context. The same goes for “librarians”.

1.8 Contribution to the LIS profession

The value of this research is in facilitating further exploration of the role of LIS professionals beyond custodianship. The profession has evolved way beyond books and librarians need to act quickly to ride the digital revolution wave of information and communication

technologies. The researcher hopes that educators in the profession as well will consider making Information and Digital Literacy a part of the curriculum. As Ward (2010) aptly puts it, the convergence of increasing volume of information, the need for librarians to instruct users how to access this information, new practices in the broader teaching world and emerging e-learning technologies has opened up a very real possibility of repositioning the academic library as central to the education process.

1.9 Clarification of key terms

- LIS professionals refer to librarians, information specialists, information and knowledge managers etc.
- Libraries in this context refers to academic libraries
- Information Research and Learning Skills (IRLS) is a term used at Monash University to refer to what is called Information Literacy and Academic Skills in South Africa.

1.10 Significance of the study

Monash University Library has been the centre of e-Learning at the University through its provision of information services in this medium. However, these efforts have never been assessed in as far as their impact on teaching and learning. The value of the study therefore lies in reviewing the effectiveness of e-learning initiatives in the Library, to determine where improvements can be made as well as cultivate best practices in this area. It is also a useful case study for libraries who haven't embarked on e-learning yet, especially in South Africa that could provide guidance into the how and why of e-learning in the library context. The study can add to the body of knowledge in the subject of e-learning in higher education and especially in libraries.

1.11 Conclusion

This chapter provides the background and outline that this study will follow. The main aim and objectives that will be discussed and the research questions that will guide the study have been clearly outlined in this chapter.

The following chapter reviews the literature concerning e-learning and its history, relation to higher education, libraries and information literacy.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction

This literature review process seeks to determine the historical development of the study of e-learning within higher education. It focuses on e-learning specifically, pertaining to higher education, academic libraries and especially its use in Information Literacy or Information Research Skills Development. It also looks at other concepts like blended learning, and embedded librarianship that are sometimes used synonymously with e-learning and also contribute to teaching and learning. Literature on this topic ranges from the early 90's up to the most current and it only focuses on literature written in English. Several databases like Ebsco, Science Direct, Emerald etc. have yielded the most comprehensive literature on this subject. This literature review is outlined in the following themes;

- e-Learning: history and background
- e-Learning in higher education
- e-Learning and academic libraries
- Applying e-Learning to Information Literacy
- Blending learning approaches: e-Learning and blended learning

2:2 E-Learning: history and background

The knowledge society's reliance on digital technologies and the interconnectedness of these technologies have come to define and shape the way we communicate, study and work. Today we cannot talk about lifelong learning without making digital technologies a part of that learning. Indeed, the whole concept of learning has taken a different form and shape in the digital century and it is the duty of educational institutions, societies, governments, etc. to make sure that learning occurs within these digital landscapes. Walker, Huddlestone and Pullen (2010) argue that the rapid rise in fast, mass communication has reached the point that in order to live, learn and work successfully we must learn to use

technology efficiently and effectively. They refer to a new term called “techno-literacy,” which in essence is the ability to use technology to communicate.

Higher education institutions, including their academic libraries, are not unaffected by this quest for “techno-literacy”. Therefore, higher education institutions should aim to produce learners who are able to operate in the knowledge society in general. Walker, Huddlestone and Pullen (2010) again argue that education should not only respond to the rapidly changing labour markets but should in fact redefine the education landscape from one of merely educating students to one of instigating and sustaining a passion for life-long learning.

According to Gay, Salomoni and Mirri (2008:179) “e-learning currently represents the most widespread form of ‘distance education’, which generally refers to educational activities that involve teachers and students remotely located both in time and space”. Sharifabadi (2006) also concurs when she refers to e-learning as an improved form of distance education. There are many definitions of e-learning and all of these definitions allude to a type of learning that is supported, enhanced or facilitated by technology and the internet. (Meredith & Burkle, 2006; Gay, Salomoni & Mirri, 2008; Catherall, 2005; Mayes & de Freitas, 2007).

Harasim (2006) argues that the very genesis of e-learning as based on human collaboration in knowledge work and innovation can be traced to the development of network communication in the late 1960s, with the invention of e-mail and computer conferencing over packet-switched networks in 1971. Nicholson (2007) however, points out that in the history of e-learning, it is important to bear in mind that no single evolutionary tree and no single agreed definition of e-learning exist. He goes on to say that since the 60s, e-learning has evolved in different ways in many spheres such as business, education, training, as well as the military. Thus the form and shape of e-learning might have changed with the times, as well as introduction of new digital technologies, but it must be understood within the context it is applied. For example, Nicholson (2007) argues that in the context of education, e-learning has historically had wider connotations that embrace a diverse range of practices, technologies, and theoretical positions. This incorporates a wide range of computer-based learning platforms and delivery methods, genres, formats and media such as multimedia,

educational programming, simulations, games and use of new media on fixed and mobile platforms across all discipline areas.

Multiple conventional learning theories underpin the development of e-learning theory. Some of these theories have much in common in terms of explaining the psychological and other external factors involved in the learning process. Amongst these learning theories is the constructivist view of learning which advocates for learner centred learning and construction of knowledge. As Felix (2005) points out, this approach is seen as synonymous with collaborative, process-oriented learning. O'Leary (2004) supports this view by stating that constructivism claims that meaning does not exist in its own right, rather it is constructed by human beings as they interact and engage in interpretation. Holmes and Gardner (2006) further articulate this view, saying that e-learning is a form of communal constructivism where the learner contributes to and benefits from a community which provides a living repository of learning. In his "Seven goals for the design of constructivist learning environments" Honebein (1996) asserts that any constructivist based learning design should aim to advance, amongst others, the following goals;

- Embed learning in realistic and relevant contexts.
- Provide for collaboration.
- Embed learning in social experience.
- Provide experience in and appreciation for multiple perspectives.
- Use multiple modes of representation.
- Provide students with experience with the knowledge construction process etc. (Honebein, 1996)

Similar to Honebein, Murphy (1997) summarises constructivist based learning approaches as those that possess some of the following characteristics;

- Student playing a central role in mediating and controlling learning.
- Knowledge construction and not production is emphasized.

- Goals and objectives are derived by the student or in negotiation with the teacher or system.
- Problem-solving, higher-order thinking skills and deep understanding are emphasized.
- The learner's previous knowledge constructions, beliefs and attitudes are considered in the knowledge construction process.
- Collaborative and cooperative learning are favoured in order to expose the learner to alternative viewpoints.
- Exploration is a favoured approach in order to encourage students to seek knowledge independently and to manage the pursuit of their goals.
- Primary sources of data are used in order to ensure authenticity and real-world complexity. (Murphy, 1997:9)

It is this learner centred pedagogical approach that underpins e-learning in the educational context. E-learning has been growing and changing just as exponentially as digital technologies have been. Felix (2005) contends that education and educational institutions of the third millennium are characterised by flexibility, collaboration, authenticity, relevance and extended institutional boundaries. He goes further to argue that the roles of both students and teachers have changed significantly as educational goals have broadened to include lifelong learning, global interaction, the acquisition of meta-cognitive knowledge and skills, and processes include negotiated curricula and real-life tutors and informants.

Unlike in the industrial era where employers were guaranteed a workforce that would remain knowledgeable and skilled for years, and with little need for constant learning and re-skilling, the knowledge era cannot guarantee to produce such workers. In a period of rapidly changing technology, knowledge that is not challenged and refreshed can get as outdated as old digital technologies make way for new ones. The demand for new knowledge and the quest for lifelong learning have become one of the cornerstones of e-learning. As Mason and Rennie (2006: 5) put it, "the growth in e-learning has been fuelled by the growth in importance of lifelong learning".

It is difficult to trace the origins and founders of e-learning directly as the field evolved over time from simple programming and computational tasks to include computer assisted learning, computer based learning, web-based content delivery and ultimately e-learning. Nicholson (2007) attributes the origins of e-learning to Patrick Suppes, who in 1966 stated that "in the future it would be possible for all students to have access to the service of a personal tutor in the same way that royals were once served by individual tutors, but that this time the tutors would be in the form of a computer" (Nicholson (2007:3). Suppes was a believer in the use of computers in education in supporting individualized instruction. He went on to develop computer enhanced learning systems which he used in his courses which he taught in Stanford University.

Another pioneer on e-learning, as mentioned by Nicholson (2007), was Don Bitzer who, in the early 1960s, created a timeshared computer system at the University of Illinois. The aim was to address issues about student literacy. The name of this computer system was called PLATO, and it was used by students and educators to create and interact with educational courseware and to communicate with other users by means of electronic notes (Nicholson, 2007). Wooley (1994) argues that two decades before the World Wide Web (WWW) came on the scene, the PLATO system pioneered online forums and message boards, email, chat rooms, instant messaging, remote screen sharing, and multiplayer games, leading to the emergence of what was perhaps the world's first online community. According to Nicholson (2007), PLATO became the direct ancestor of today's e-learning systems such as Blackboard and WebCT.

Nicholson (2007) summarizes the work of different authors to provide a comparative framework of the changing focus of educational technology over the past 30 years, which eventually culminates into the evolvement of e-learning. The following table illustrates this evolution;

Table 2.1: The changing focus of educational technology over the past 30 years

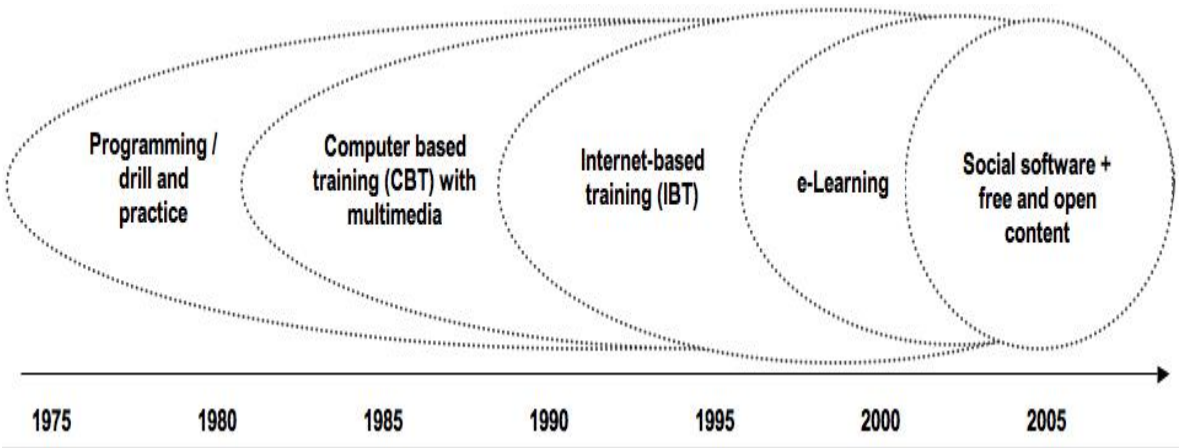
Era	Focus	Educational characteristics
1975-1985	Programming; Drill and practice; Computer-assisted learning-CAL	Behaviourist approaches to learning and instruction; programming to build tools and solve problems; local user-computer interaction.
1983-1990	Computer-based training; Multimedia	Use of older CAL models with interactive multimedia courseware; passive learner models dominant; constructivist influences begin to appear in educational software design and use.
1990-1995	Web-based training	Internet-based content delivery; active learner models developed; constructivist perspectives common; limited end-user interactions.
1995-2005	E-learning	Internet-based flexible courseware delivery; increased interactivity; online multimedia courseware; distributed constructivist and cognitivist models common; remote user-user interactions.

Source: Manjón, B. F. et al., (2007:7)

Technology centred learning systems have evolved rapidly over time and that evolution has largely been determined by varying pedagogical considerations and contexts**.** Nicholson (2007:7) notes that "since its inception, e-learning has assimilated a diverse range of pedagogical practices, but the defining aspect of e-learning – the trend towards collaborative online learning environments- is not only a result of the increasing adoption of constructivist paradigms, but is also a consequence of the affordances of ubiquitous global networks that have facilitated the realization of individualized learning and interpersonal interactivity on a large scale, perhaps far exceeding the expectations of Suppes and Bitzer in its scale and scope".

The following diagram taken from a blog, "Flosse", expands on technology based learning systems (especially related to their use in education) as they evolve over time. It highlights the era after 2005 which has moved even beyond e-learning to encompass social software and free and open content.

Figure 2.1: The changing focus of educational technology over the past 30 years



(Source: Free, Libre and Open Source Software in Education, 2005, para 5)

The phases are:

(1) Late 1970's – early 1980's: programming, drill and practice;

(2) Late 1980's – early 1990's: computer based training (CBT) with multimedia;

(3) Early 1990's: Internet-based training (IBT);

(4) Late 1990's – early 2000: e-Learning;

(5) Late 2000: Social software + free and open content.

2.3 E-Learning in higher education

Herrington (2006) argues that the most powerful use of technology in higher education perhaps is where technologies are used as tools in authentic learning environments. The internet and ICTs have necessitated a big overhaul in the way education is delivered in institutions of higher learning. Indeed, education which has a historical background of being a privilege of aristocrats, princes and wealthy individuals, has evolved to the extent that anyone, anywhere, is able to learn without following the formalised old establishments called universities. This change can be attributed to the widespread use of ICTs and the internet. In the knowledge economy, e-learning specifically, has been at the forefront of these major changes in higher education. Laurillard (2006) asserts that e-learning is important in higher education because the use of ICTs and interactive technologies support many different types of capabilities and for each of these capabilities; there is a learning application that could be exploited in higher education.

Faced with dwindling budgets and escalating costs, educational institutions are being forced to cut costs and to come up with innovative ways to provide high quality services at much lower rates. For the time being, e-learning seems to be a worthwhile strategic move but it is not without pitfalls. E-learning proponents are often accused of failing to recognise the significance of these pitfalls in that there has been very little or no research done on whether the "learning" in "e-learning" happens in this context. Several authors such as Guri-Rosenblit (2005), Njenga and Fourie, (2010) and Gandolfo (1998) have warned that the discourse on new technologies, especially in the academic and corporate arena fails to bridge the gap between rhetoric in literature describing the sweeping effects of the digital technologies on educational environments and their actual implementation. As Guri-Rosenblit (2005) puts it, often discourse on new technologies suffers from "The Tower of Babel Syndrome" – a confusing language and misleading conclusions, emanating from the fact that people refer to totally different functions and roles while using the same generic terms. She argues that the language used to depict these learning environments is often blurred and confusing. Njenga and Fourie (2010) concur with Guri-Rosenblit when they say

that there is no clear distinction between teaching with and teaching about technology. They assert that much of the focus is on the actual educational technology as it advances, rather than its educational functions or the effects it has on the functions of teaching and learning. They refer to this as the techno positivist ideology which they define as " a compulsive enthusiasm about e-learning in higher education that is being created , propagated and channelled repeatedly by the people who are set to gain without giving educators the time and opportunity to explore the dangers and rewards of e-learning on teaching and learning" (Njenga & Fourie, 2010:199).

According to Gandolfo (1998), the actual use of technology may be proceeding recklessly without much reflection on the nature of learning that it purports to be addressing. She goes on to say that the unfortunate reality is that all this expensive equipment may do little to enhance student learning if we do not consider its capabilities in relationship to traditional structures and pedagogies. Whether e-learning supports or enhances scholarship remains to be seen. Research may have been biased towards the use of ICTs and e-learning in higher education but it does not mean that the lack of research on its effectiveness in teaching and learning overrides its success. Granted, ICTs and their success in higher education are context and content dependent. The fact that there has been much research done on e-learning in higher education means there are successes and lessons to be learnt. Tucker and Gentry (2009) concede that organisations, in developing an e-learning strategy, should understand the objectives or reasons why such a strategy is necessary in the first place. They maintain that the primary goals for embarking on and implementing e-learning technology has to do with the appeal of offering anytime, anywhere access to learning, the ability to adapt learning to individual needs, the ability to increase collaboration, the opportunity to offer flexibility to meet student schedules, and the resulting cost-savings (Tucker & Gentry, 2009).

Lombardi (2007); Herrington, Reeves and Oliver (2010) put more emphasis on what they term "authentic e-learning". They define this as learning that focuses on real-world, complex, problems and their solutions, using role-playing exercises, problem-based activities, case studies, and participation in virtual communities of practice. Herrington (2006) argues that authentic learning offers a powerful alternative approach which engages students as well as offer opportunities for students to acquire deep understanding of

underlying constructs and to practice thinking in the way that an expert thinks. It draws upon a wealth of research in constructivist and situated approaches to education. (Herrington, 2006)

Herrington and Oliver (2000) identify at least nine constructivist based tasks or activities that should characterise the design of authentic learning environments and these are;

- Provide an authentic context that reflects the way the knowledge will be used in real life.
- Authentic activities.
- Access to expert performances and the modelling of processes .
- Multiple roles and perspectives.
- Collaborative construction of knowledge.
- Reflection.
- Articulation.
- Coaching and scaffolding.
- Authentic assessment.

The major issue for higher education institutions is that of linking innovation with teaching and learning and making sure that technology is not used without considering the alternatives. The knowledge economy demands that the university equips its learners with the ability to keep abreast with existing knowledge and technology, to be able to critically think and evaluate information and knowledge, to engage in rigorous debates in their fields of study and more importantly, to master the art of lifelong learning. Rajasingham (2007) argues that modern universities are faced with increasing fiscal constraints and therefore have to look at introducing new pedagogical frameworks, learning environments and stakeholder demographics. She says that this paradigm shift is characterised by students/customers who demand life-long learning, and rectors and vice chancellors who have to swap the role of being scholars to that of being chief executives. Laurillard (2002)

also supports this by pointing out that the knowledge society, fuelled by the expanding higher education sector, is generating more knowledge industries, producing additional, competitive pressures for traditional institutions of higher education. Therefore it is these knowledge industries that are creating the means by which individuals acquire immediate skills and knowledge they need. Laurillard (2002) thinks that any university that claims or wants to respond to these new demands should be able to answer the following questions:

- How should the curriculum balance expert knowledge and practitioner knowledge?
- To what extent is a degree course a long-term grounding for an individual?

The role of a university is not only to equip learners to enter the working world, but to be responsible citizens who participate fully in building their economy and society. Therefore universities have to address and engage in all issues that their learners face during their time. ICTs, globalization and the media are some of such discourses that largely dominate our world today. Universities, therefore, cannot ignore these global issues. Thus Rajasingham (2007) concludes that to be effective in e-learning, higher education needs to globalize its curricula. “To respond to an increasingly sophisticated and market-driven learner satisfaction, academic departments in universities need to rethink, reformat and redesign their programs and structures as e-learning moves from being teacher-controlled to learner-centred, and becomes more connected with personal and professional experiences” (Rajasingham, 2007:294). Authors like Clegg, Hudson and Steel (2003), however provide a strong critique against what they term “the irresistible power of globalisation and the determining effect of technology”. They argue that such a critique is essential as the neo-liberal conception of globalisation is increasingly driving policy agendas in higher education. They go on to say that “within education the passive acceptance of globalisation paradigms engenders a deterministic view about the role and function of technology as phenomena with its own independent trajectory”. Several authors like Bird and Nicholson (1998); Scott (2000) and Sweeting (1996) have also argued that perhaps trends in the globalization of higher education should be explored further in order to determine whether there is effectiveness in learning as a result of this global, technology driven trend in higher education.

Perhaps what is lacking in e-learning discourse is literature on the perspectives of e-learning in higher education of both students and lecturers. Such research, if widely representative and global enough, would perhaps be able to answer the contentious question of whether 'learning' occurs in e-learning. Gilbert, Morton and Rowley (2007); Mihhailova (2006) and Sharpe and Benfield, (2005) are some of the few authors who have conducted their research on the student's perspective on e-learning. The research results reported by these authors are similar. The general consensus among students is that e-learning is a great platform for teaching and learning, especially for post-graduate or working students. Interaction with technology for study purposes seems to be a preferred method for those students who have time constraints. E-learning firmly makes learning the student's responsibility. Also, the ability to access course information and complete tasks online was a great timesaver for students. Some students found online discussions more stimulating and their use encourages a student to consider carefully what to write in such exchanges, unlike in a physical and verbal communication platform.

However, there are just as many pitfalls in e-learning that students reported on. Some of these include their lack of skills in using ICTs, internet access problems, lack of personal contact and slow feedback from academics, different learning styles and the general feeling that e-courses are not at the same level of standards as traditional courses. Most of the students in these authors' research suggest that perhaps a blended learning approach is more suitable than a course presented completely in an e-learning environment. Such an approach could perhaps mitigate some of the problems associated with e-learning. Sharpe and Benfield (2005) conclude that e-learning developments based on radical changes in traditional pedagogy, particularly those requiring collaboration and/or significant change in the role of the tutor, evoke the most inconsistencies in student perceptions. They then suggest that perhaps individual differences in this case appear as important success factors, particularly in how well students understand the teaching and learning process and the role of their online tasks in it (Sharpe & Benfield, 2005).

In conclusion, a lot of literature on e-learning as it evolves in higher education has been published. The general consensus seems to be that higher education cannot progress without e-learning, it has come to define university policies and mission statements. However, the proponents of e-learning are often accused of forsaking pedagogical

foundations of teaching and learning in favour of passing technologies that on their own lack the ability to provide actual learning and create knowledge in the process. On the other hand, it is understood that e-learning for the sake of it will indeed fail, that any higher education institution that embarks on e-learning needs to critically evaluate the needs and desired learning objectives before taking on such a venture. Tham and Werner (2005) argue that communication in education has most often emphasized a one-way transmission. However, in higher learning, communication should focus on whether the concept or application is reasonable or suitable based on the particular situation. They concede that in an academic setting, there should be interactive transmissions that promote challenges, relevancy and dynamic creative thinking.

According to Govindasamy (2002), for e-learning to be effective, there has to be some underlying pedagogical principles behind its teaching and learning activities. He argues that the same pedagogical principles which apply to traditional classroom delivery methods should also apply to e-learning. The principles are as follows:

- Developing content representation (this role should not be expected to be fulfilled by faculty members as they are content experts not instructional designers, programmers etc.).
- Storing and managing content (learning objects should be assigned a shelf life and a system to manage publishing workflow of content should be in place).
- Packaging content (there should be options between learning objects and 'just-in-time learning' for learners and instructors).
- Student support (constructive and meaningful feedback and ability for students to interact with the learning material).
- Assessment (designing assessments capable of testing higher-order thinking and skills).

2.4 E-Learning and academic libraries

Traditionally, libraries have played the role of custodianship over print and other resources and have gradually moved to electronic resource provision and management. This has been

the result of new technological advancements such as virtual learning or learning management systems being introduced in higher education. Libraries therefore find themselves in a situation where they have to play a bigger role in teaching, learning and research in order to remain relevant to their academic constituencies. Bridging the gap between traditional library services and new technologies such as e-learning systems, is one of the ways libraries are trying to redefine their role within their institutions. According the OCLC Learning Task Force (2003:6) "e-learning integration offers libraries a powerful medium for reaching faculty and students directly as they engage in teaching, learning, research and outreach". Consequently, this integration helps the library to reach both faculty and students who no longer make use of the library by providing a web based and enriched service for their information needs. As libraries adapt to meet the needs of this new generation of users, they need to be technological and multimedia hubs within the university in order serve this end. Sen (2009:177) argues that "academic libraries need to apply appropriate communication technologies in support of e-learning and e-research by providing seamless access to electronic resources and services". These electronic resources would be databases, digital repositories, catalogues, electronic archives, e-books, e-journals, multimedia and other online services.

Markgren, Eastman and Bloom (2010) go further as to assert that libraries and librarians today are no longer guardians of print materials but teachers, innovators, technologists and campus advocates whose focus is satisfying student's academic needs by supporting faculty in the classroom and maintaining a vital presence on campus. "The library, as the newest technology hotspot on campus, and the librarians who work there, are logical intermediaries to bridge the knowledge gap between faculty and students when it comes to emerging technologies and web 2.0 tools because libraries and librarians are already using them" (Markgren, Eastman & Bloom, 2010: 262). Sharifabadi (2006) reports that one of the challenges libraries face is the widespread availability of free information on the web, and this has serious implications for education programs as well as understanding library user's behaviour. One of the solutions to this, as suggested by Lippincott (2002) is that libraries should support e-learning as a learning environment and resources network which is designed to meet the needs of learners, in both individual and collaborative settings. Libraries need to align their strategies with those of their institution's e-learning strategies

in order to become a viable player in the developing e-learning landscape. Indeed, most libraries are already doing so and are becoming viable players in the provision of teaching, learning and research within their institutions.

However, in as much as there are benefits to libraries supporting e-learning, this also has some challenges. Libraries often have to get buy in from faculty who might not necessarily be open to such collaboration. Arp, L. et al., (2006), report that there is still no widespread acceptance of the librarian's role in curriculum planning and course-integrated instruction. Teaching faculties are appreciative of the support given by librarians; however, librarians are not universally recognized as playing an integral role in course planning and teaching.

Eke (2010) recognises some of these challenges by pointing out that decision-making and implementation of e-learning processes in some institutions usually excludes libraries and librarians, thus forcing them to deploy their services in a new learning environment using a technology outside their control. Also issues of metadata and cataloguing standards of these learning objects which librarians have expert knowledge on, are not considered. As Nfila (2008:4) says, "research indicates that e-learning thrives in a collaborative environment which allows integration of resources and services for the benefit of the learner". Therefore it is important that collaboration be emphasized in e-learning processes and especially where the library is concerned. Information and knowledge management is and will remain in the expertise of libraries and librarians, whether in print or electronic format. So it is crucial that academic institutions recognise and use this expertise when embarking on e-learning management systems. Research on e-learning and libraries emphasises the need for collaboration where such collaboration and integration is clearly defined. Ivey (2003) identified four essential elements necessary for successful collaborative teaching partnerships and these are;

- Shared understood goals.
- Mutual respect, tolerance and trust.
- Competence for the task at hand by each of the partners.
- Ongoing communication.

Yates (2010) also argues that empowering library staff to develop e-learning content can save both time and cost, instead of relying on external vendors and multimedia developers. Gruca (2010) supports this by adding that librarians themselves would benefit from e-courses as they can improve their professional skills and support their personal development and self-improvement. “The apparently unstoppable move of information retrieval to virtual space has been accompanied by an excessive increase in the number of digital resources and tools. Thus, librarians, being guides to web information, need permanent re-education and self-instruction to become experts in the relevant knowledge and skills” (Gruca, 2010:18).

The benefits of e-learning to Information Literacy have been highlighted by various researchers on the subject. Hadengue (2004:399) states that “e-learning courses have the potential to break up solid, monolithic courses into varied teaching components: for example, the production of renewable, interactive contents, the student assessment function, and the evaluations and follow-up of student learning”.

Papic and Stricevic (2012) conducted a research study in which they explored the effects of integration of libraries’ e-services into a learning management system. More importantly, the focus of the study was on student’s perceptions of this new learning environment in the improvement of their learning. This research amongst other positive results highlighted the improved relationships between students, faculty and librarians. They list the effects of libraries’ integration of e-services into a learning management system according to the following diagrams;

Figure 2.2: Benefits of integration of libraries' e-services into online courses within learning management system Moodle

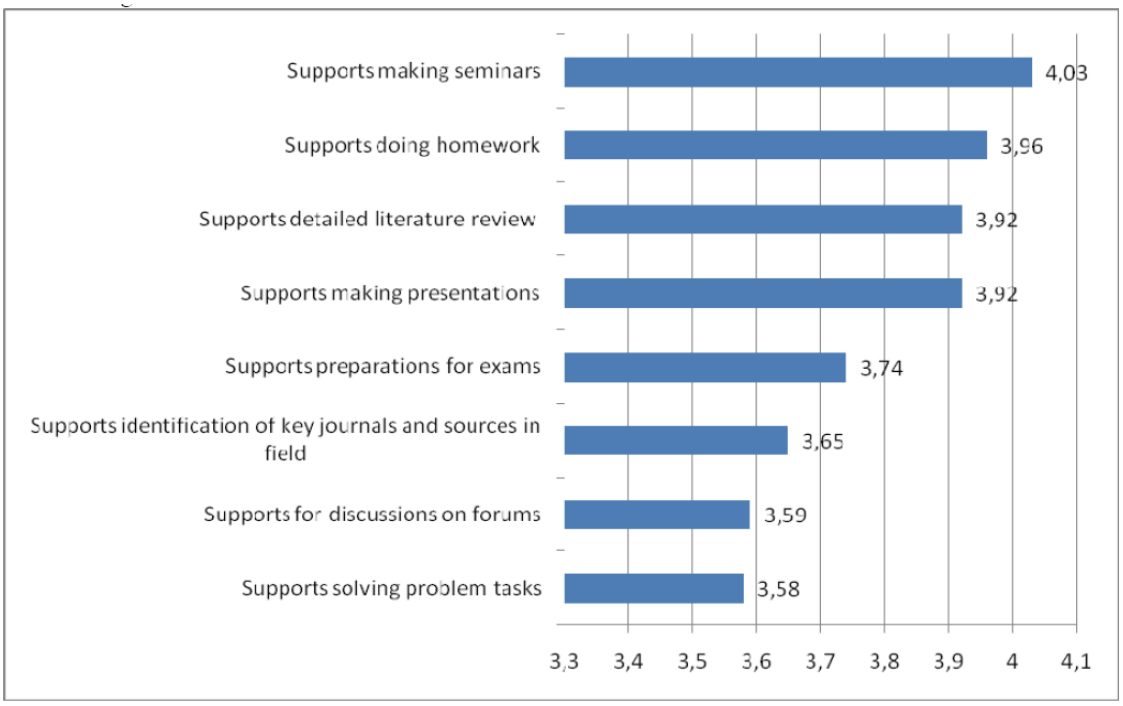
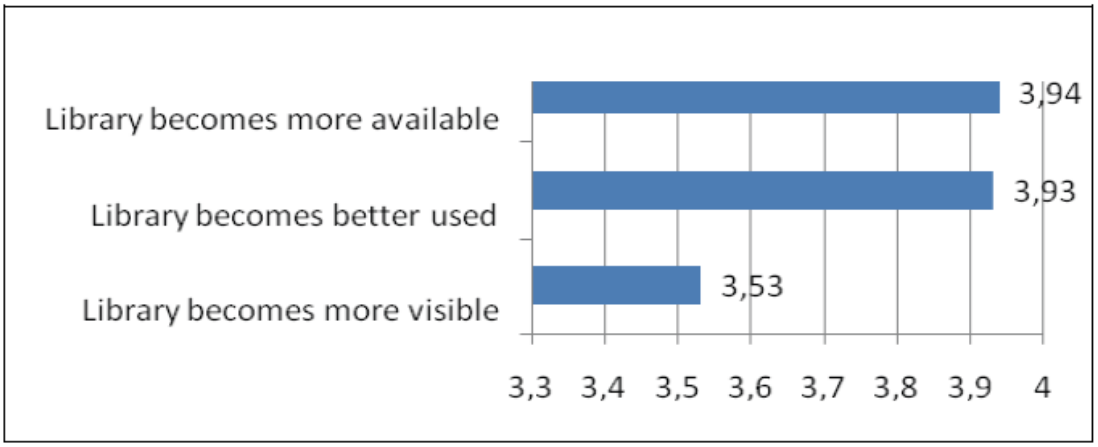


Figure 2.3: Effects of integration of libraries' e-services into online courses within LMS Moodle with regard to the role of academic library in education process at university.



Source: Papic and Stricevic (2012:244)

Arp, L. et al., (2006) argue that such kinds of integration and collaboration achieve the goal of integration of information literacy into academic programs. They go on to say that the depth of librarian involvement is growing and that librarians are moving from teaching information literacy as an add-on to being team members. Wang and Hwang (2004)

highlight the importance for libraries to correlate their e-learning designs to learning theories. They argue that there is a need for “e-learning libraries” to implement theoretically founded interaction models and designs that incorporate learning theories. Both the behaviourist and constructivist based learning theories have been the basis of most e-learning studies and models. The constructivist based learning theory which is based on cognitive psychology believes that learning is conceptualized as an active process in which learners construct new ideas or concepts based upon their own knowledge, both old and new. The constructivist theory of learning has perhaps been the most dominant theory in e-learning. Perhaps this is where collaboration between faculty and librarians is most pertinent as academics are the experts in learning theories and would be able to provide scholarly background in designing e-learning systems.

Sun et al., (2011) maintain that librarians have to find ways to integrate digital technology and print resources with self-directed learning and online guidance with face-to-face mentoring. Coinciding with these developments has been a shift towards a constructivist model of learning, which in many ways fits well with the new technology. There is a tendency to judge teaching plans by the degree to which they are learner-centred and to which the teaching plan has become a personal learning action plan. This certainly accords with contemporary trends in pedagogy (Sun et al., 2011). Academic libraries can only improve their services and strengthen their effort to serve its users better through e-learning. The pervasive use of the internet has provided higher education with innovative ways to deliver education. Academic libraries therefore have to keep up with these technologies and to find ways to integrate their services in such platforms.

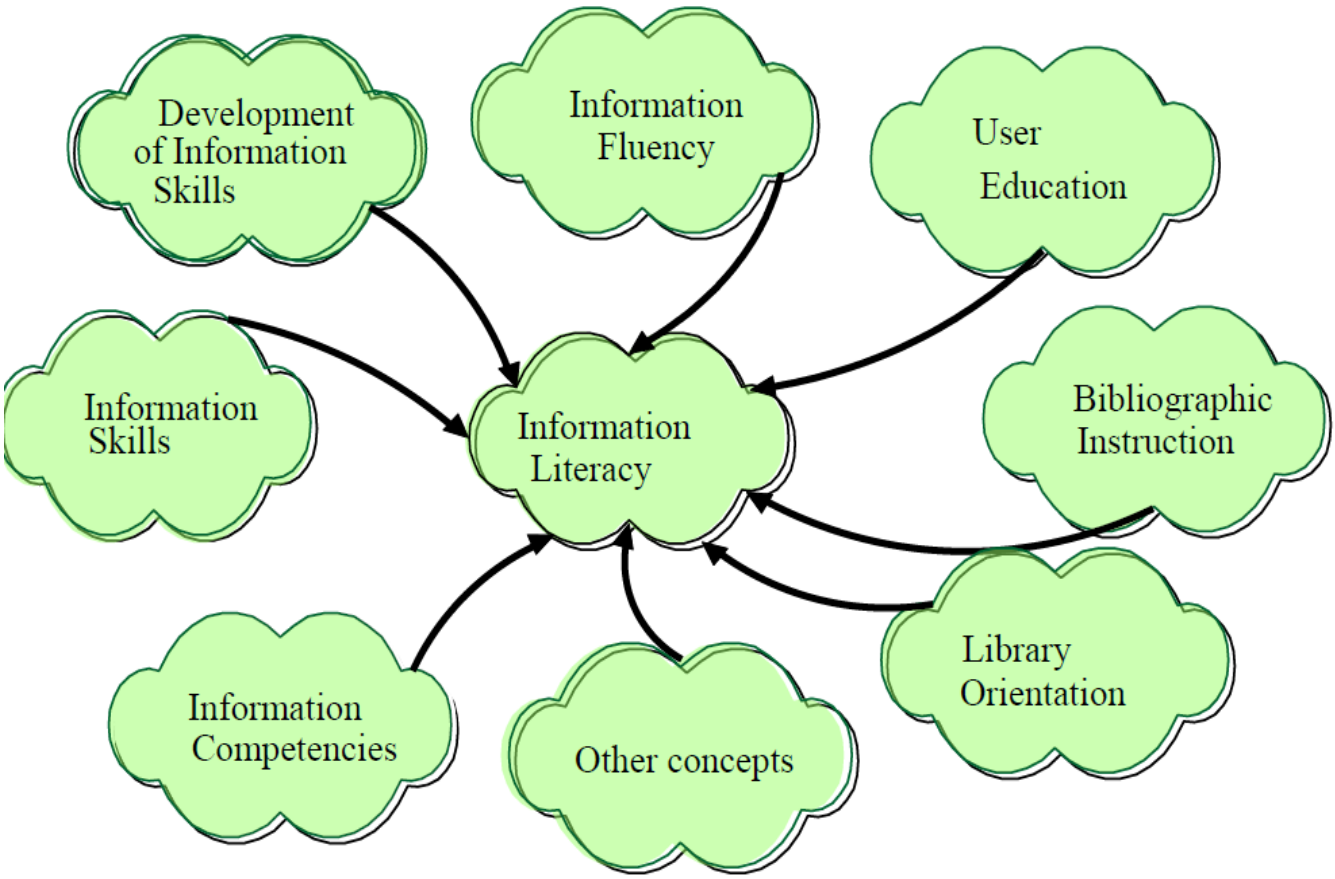
2.5 Applying e-Learning to Information Literacy

The American Library Association (1989) defines Information Literacy (IL) as the ability to recognise when information is needed and have the ability to locate, evaluate, and use effectively the needed information. A person who is information literate is one who has learned how to learn, it is a person who knows how to learn because they know how knowledge is organised, how to find information, how to use information in such a way that others can learn from them. Information Literacy has been linked to the concept of lifelong learning for the simple reason that for someone to be a lifelong learner, one always has to

seek information and knowledge. And to do this, one needs to be information literate. Coupled with the rapid developments and changes in ICTs in the information age, information literacy has never been more pertinent. To keep abreast with what is going on in a period of information overload, we constantly need to re-evaluate and upgrade our knowledge and skills in order to operate in this complex learning environment. This, we can only do through the pursuit of lifelong-learning which is directly linked to information literacy. Hence the American Library Association (ALA) (1989:3) states, "information literacy, therefore, is a means of personal empowerment. It allows people to verify or refute expert opinion, and to become independent seekers of truth. It provides them with the ability to build their own arguments and to experience the excitement of the search of knowledge. It not only prepares them for lifelong-learning; but, by experiencing the excitement of their own successful quests for knowledge, it also creates in young people the motivation for pursuing learning throughout their lives". It can be argued therefore, that Information Literacy can be used as the basis for lifelong-learning.

According to the International Guidelines on Information Literacy compiled by the Information Literacy Section of the International Federation of Library Associations (IFLA), there are several terms that contribute to the concept of information literacy which when broken down, relate to different types of skills, level, categories of learning etc. Lau (2006). In this context, information literacy focuses on information use rather than on bibliographic skills, i.e. students must develop information competencies to become effective learners. The constructivist based approach of learning in information literacy focuses on students engaging with information in order to solve a problem and thereby creating new understanding by active investigation and thought, instead of memorizing facts presented in the class lecture (Lau, 2006).

Figure 2.4: The concept of Information Literacy



Source: Lau, J. (2006:10)

Authors like (Andretta, 2005; Secker, 2004; Ward, 2010; Joint, 2005 & Hadengue, 2005) are some of several authors who have argued for the link between information literacy and e-learning. They maintain that information literacy should play the central role in any e-learning initiative and that in this complex learning environment e-learning should be supported by solid information literacy frameworks. Andretta (2005) specifically, argues that the basic competencies that underpin e-learning come under the umbrella of information literacy. She maintains that information literacy skills should be the focal point of e-learning in order to foster independent learning, predispose students towards a lifelong-learning attitude and to equip them with the ability to make informed decisions to deal effectively

with information overload. Another new term that appears in information literacy dialogue is that of e-literacy which is broadly defined as the converging of IT literacy and information literacy (Secker, 2004). In Secker (2004), Martin describes how e-literacy encompasses aspects of computer literacy, information literacy, thinking and learning skills, and what he terms media and moral literacy. Developing information literacy skills, or e-literacy skills, is essential for academic and other support staff to be able to fully engage and exploit library resources in the e-learning system (Secker, 2004). Hadengue (2005) identifies three competencies needed in formulating a successful e-learning initiative and these are;

- Pedagogical competencies i.e. the ability to transmit knowledge in a distance learning environment.
- Technological competencies i.e. the ability to choose the platform, to integrate content and to work on the interface.
- Information competencies i.e. the ability to search and assess sources and to implement research strategies.

At the heart of such an initiative is the concept of collaboration as most of these skills and competencies are scattered in different professions. As previously mentioned, collaboration is one of the key aspects in successful e-learning projects. The competencies mentioned above would include librarians, subject academicians, educational technologists etc. The growing call to embed information literacy skills into the curriculum requires that librarians adopt the role of being educators and educational technologists. Whether they provide those information literacy skills face-to-face or via the web, the issue remains that librarians now need to be versatile and creative in bringing information literacy to learners. Libraries have always been the centres and repositories of information and knowledge. Librarians, as custodians of that information and knowledge have the enormous task of making information literacy and lifelong-learning a part of their responsibility. However, the challenges generated by the internet and the new digital technologies have led to an enormous amount of information to be available to users. This availability of information also has a downside to it, 'Information overload' and 'misinformation' unfortunately become the by-products of this environment. Information literacy education is the one solutions to this problem. The Association of College & Research Libraries (ACRL) (2000)

Information Literacy Standards Report states that "because of the escalating complexity of this information environment, individuals are faced with diverse, abundant information choices in their academic studies, in the workplace and in their personal lives. Information is available through libraries, community resources, special interest organisations, media and the internet and increasingly, information comes to individuals in unfiltered formats, raising questions about its authenticity, validity, and reliability."

It is therefore evident that this task cannot be the responsibility of librarians only, academics, teachers, students, educationists, educational technologists etc. should all work together to realise the goal of information literacy education for lifelong-learning, especially where e-learning is concerned. This is supported by Buchanan et al., in Andretta (2005) when he says that there is a need for close collaboration between library and faculty staff in order to ensure the integration of information literacy education within this virtual environment. The value of such collaboration becomes evident to students when they are able to effectively use and integrate these skills within their assignments and courses. Improving student learning through the integration of information literacy in academic programs should be the goal of both librarians and faculty. Arp, et al., (2006) still maintain that while librarians continue to be included in the teaching mission of the university on a course-by-course basis, it is still rare that the inclusion of the librarian is integral to the mission of the course or the curriculum in any major way. Perhaps the need for information literacy to be embedded in the curriculum should be made more urgent and should be institutionalised and policy driven.

O'Sullivan (2002:8) alludes to an economy that is characterised by the need for continuous learning of both codified information and the competencies to use this information. As access to information becomes easier and less expensive, the skills and competencies relating to the selection and efficient use of information become more crucial. Capabilities for selecting relevant information, recognising patterns in information, interpreting and decoding information as well as learning new and forgetting old skills are in increasing demand. Andretta (2005) argues that e-learning can be a rewarding and innovative way to equip learners with the necessary skills for lifelong and independent learning to fit in this economy. He maintains that information literacy education is well positioned to develop these skills thanks to its learning-how-to learn framework which is fully articulated in the

information literacy standards devised by the ACRL and Australian and New Zealand Institute for Information Literacy (ANZIIL).

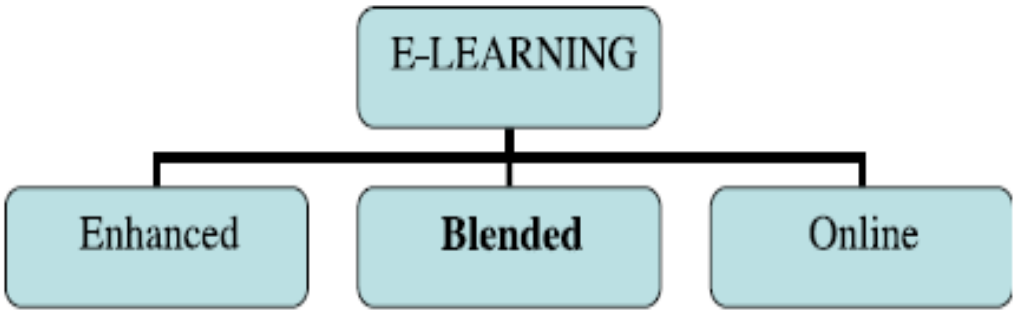
"The convergence of increasing volume of information, a need for librarians to instruct users how to access this information, new practices in the broader teaching world and emerging learning technologies has opened up a very real possibility of repositioning the academic library as central to the education process" (Ward, 2010:241). Information literacy has become the focal point of academic libraries and is driven by a more student centred agenda which is made possible by the convergence of e-learning technologies and information literacy. Opportunities to foster lifelong learning through information literacy have not only become possible but have also become a necessity in endeavouring to produce learners that are fit to join the knowledge economy. Having said all that, it is important to emphasise that the basis of learning is not only information literacy through libraries and librarians, but rather collaboration between students, academics and other university stakeholders who form an integral part of this learning process.

2.6 Blending learning approaches: e-Learning and blended learning

Blended learning is a pedagogical approach to learning which combines online instruction with face-to-face instruction. Other terms that are used synonymously with blended learning are hybrid learning or mixed learning. The pervasiveness of online learning in higher education has compelled educators to confront existing assumptions of teaching and learning, says Garrison and Kanuka (2004). Blended learning is the thoughtful integration of classroom face-to-face learning experiences with online learning experiences (Garrison & Kanuka, 2004). The underlying concept in blended learning is that both synchronous (face-to-face) and asynchronous (text-based internet) have their own strengths and weaknesses but if integrated, have a transformative potential. Sethy (2008) defines blended learning as learning that integrates seemingly opposite approaches, such as formal and informal learning, face-to-face and online experiences, directed paths and reliance on self-direction and digital references and group connection, in order to achieve individual and organisational goals.

Proponents of blended learning argue that e-learning has its own drawbacks and so do traditional forms of learning or classroom instruction. Hence the appeal in blended learning seems to be taking more focus in higher education.

Figure 2.5: A continuum of e-learning



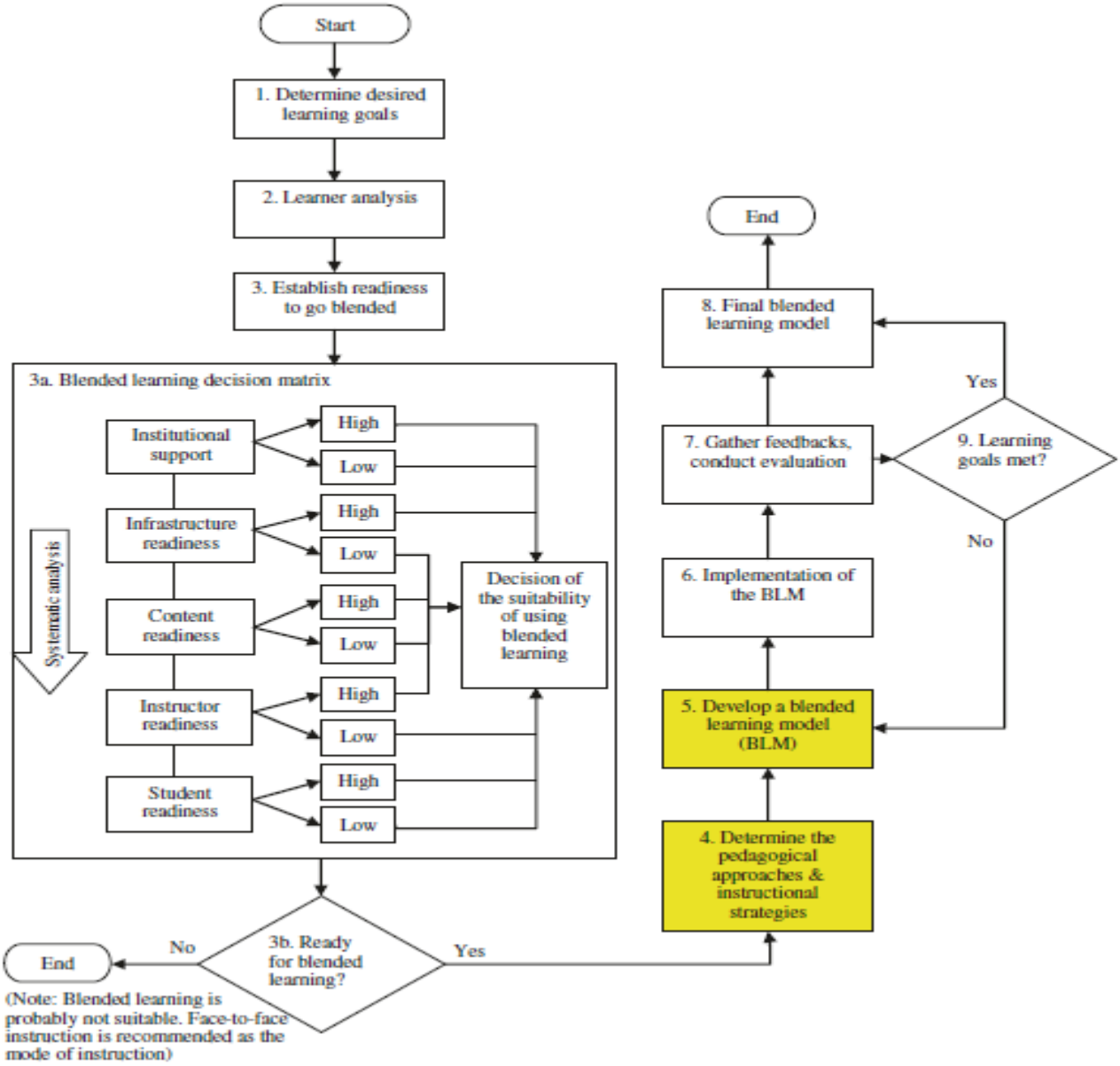
Source: Garrison and Kanuka (2004: 97)

Foremost in blended learning literature is that the advantages of using this form of learning far outweigh those of pure e-learning and traditional teaching and learning methods. The flexibility associated with this model coupled with cost effectiveness and better communication between learners and teachers are some of the advantages associated with blended learning. Critical thinking, student engagement, collaboration are more enhanced in blended learning environments, some argue. However, not much has been reported in terms of disadvantages of blended learning except the issue of cost effectiveness and other technology related issues. Gandolfo (1998) for example, warns that technology use in higher education may be proceeding recklessly without much reflection on the nature of learning that it purports to be addressing. He argues that these technologies present both opportunity and danger and if used effectively can improve and enhance learning but if used incorrectly have no value add. He maintains that "technology applications must be consonant with what is known about the nature of learning and must be assessed to ensure that they are enhancing learners' experiences" (Gandolfo, 1998:24).

Whatever the rationale for or against blended learning, it is evident that emerging and pervasive ICTs will continue to change the academic landscape and it is futile to ignore these trends. Most higher education institutions are now basing their strategic plans and missions

along these concepts of e-learning and blended learning. The key challenge then becomes, what is the right mix between online and face-to-face instruction? Several blended learning frameworks have been developed by different authors and the following proposed framework by Hew and Cheung (2014) tries to articulate the most important elements of blended learning bearing in mind its strengths and limitations.

Figure 2.6 : A blended learning design framework (Adapted from Foo, 2014)



Source: Hew and Cheung (2014:7)

In conclusion, the reality of our time is that ICTs will continue to influence every sphere of our lives and especially in higher education. The rise of mobile, wireless and wearable technologies is making it possible for the reshaping of education in order to reach as many learners and as far and wide as possible. In that light, both e-learning and blended learning are trends that are not likely to disappear from the higher education landscape anytime soon.

The 2013 Horizon report reports on the key trends that are currently affecting teaching, learning and creative inquiry in higher education:

1. Openness – concepts like open content, open data, and open resources, along with notions of transparency and easy access to data and information – is becoming a value.

2. Massively open online courses are being widely explored as alternatives and supplements to traditional university courses.

3. The workforce demands skills from college graduates that are more often acquired from informal learning experiences than universities.

4. There is an increasing interest in using new sources of data for personalizing the learning experience and for performance measurement.

5. The role of educators continues to change due to the vast resources that are accessible to students via the internet.

6. Education paradigms are shifting to include online learning, hybrid learning and collaborative models (Johnson, L., et al., 2013:7).

E-learning and blended learning are likely to become the dominant forms of education in future. Libraries should therefore position themselves in a manner that renders them effective and instrumental in teaching and learning.

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

The aim of this chapter is to explain the methodology and techniques used in this research. The process of collecting, analysing, interpreting data will form the basis of this chapter. The area of study, research design, population, sampling, data collection instruments, data control and quality, ethical considerations are all aspects that fall within the sphere of research methodology and which this chapter seeks to clarify for the purposes of this study.

3.2 Research methodology

Welman, Kruger and Mitchell (2005) define research as a process that involves obtaining scientific knowledge by means of various objective methods and procedures. By 'objective' they refer to methods and procedures which do not rely on personal feelings or opinions, methods which should be used at each stage of the research process. Essentially, what research methodology tries to do is to explain the logic and reasoning behind the methods and procedures chosen by the researcher. Research involves the application of a variety of standardised methods and techniques in pursuit of knowledge. Precisely because scientists aim to generate truthful knowledge, they are committed to the use of objective methods and procedures that increase the likelihood of attaining validity (Mouton, 1996).

3.3 Research design and approaches

Research design essentially gives an overview or a plan of how the researcher intends to arrive at his conclusion and forms the basis for conducting a study. Creswell (2009) defines research designs as plans and procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. According to Babbie (2013) the three most common and useful purposes of research are exploration, description and explanation. Designing research projects has a lot of components and it is important for a researcher to have a well thought out plan before s/he embarks on doing research. Two types of research design paradigms which have dominated research literature are qualitative and quantitative research. Some researchers have found that mixing qualitative

and quantitative research methods is more desirable as the use of multiple methods and techniques improves the quality of research. This is known as the mixed methods approach

3.3.1 Quantitative research

Leedy and Ormrod (2005:95) state that the purpose of quantitative research is to seek explanations and predictions that will generalize to other persons and places. The aim of quantitative research is to establish, confirm or validate relationships and to develop generalizations that contribute to theory. As a result, this method follows carefully structured guidelines which must be clearly defined before the study begins. So concepts, hypotheses, variables and methods of measurements must be clearly defined in order to allow the researcher to objectively measure the variables of interest. This type of research approach is often linked to the positivist theory.

3.3.2 Qualitative design

Qualitative research on the other hand is an attempt to better understand complex situations. This type of research is exploratory in nature and also uses observations to arrive at results. "Qualitative research is typically used to answer questions about the complex nature of phenomena, often with the purpose of describing and understanding the phenomena for the participants' point of view" (Leedy & Ormrod, 2005:94). Qualitative research has its theoretical foundations on the interpretative or constructivist learning approach.

3.3.3 Mixed methods design

Mixed methods research is a combination of both qualitative and quantitative methods. Quoting Johnson and Onwuegbuzie (2004:17), de Vos, et al., (2011:434) describe mixed methods research as "the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study". Within the mixed methods approach, Creswell (2009) reports that procedures have been developed for mixed methods strategies of inquiry and the three general strategies are; sequential mixed methods, concurrent mixed methods and transformative mixed methods. Creswell (2009) summarises the 3 dominant research paradigms according to the following table

Table 3.1: Quantitative, Qualitative and Mixed methods

Quantitative methods ⇨	Mixed Methods ⇦	Qualitative Methods
• Pre-determined • Instrument based questions • Performance data, attitude data, observational data and census data • Statistical analysis • Statistical interpretation	• Both pre-determined and emerging methods • Both open and closed-ended questions • Multiple forms of data drawing on all possibilities • Statistical and text analysis • Across databases interpretation	• Emerging methods • Open-ended questions • Interview data, observation data, document data, and audio-visual data • Text and image analysis • Themes, patterns interpretation

Source: Creswell, John W. (2009:15)

This study will lean more towards the qualitative nature of inquiry for the simple reason that e-learning as a whole is underpinned by constructive pedagogical theories and as such the qualitative approach also takes a constructivist worldview. In qualitative research design, the researcher seeks to establish the meaning of a phenomenon from the views of participants, Creswell (2009). This type of research is characterised by a narrative design approach, participatory worldview and open-ended interviewing.

3.3.4 Case study research

Yin (2012) defines case study research as an empirical inquiry about a contemporary phenomenon (e.g. a 'case'), set within its real-world context especially when the boundaries between phenomenon and context are not clearly evident. He goes on to say that case study research assumes that examining the context and other complex conditions related to the case being studied are integral to understanding the case. Applying the case study as a research method is determined by the type of research question a study is trying to address.

This study aims to address the following main question "**How has the Monash University Library used e-learning to enhance Information Research and Learning Skills?"** and the following sub-questions narrow the research down to specific aspects of Librarians and Learning Skills Advisers e-learning activities especially focusing on Monash University, as the title suggests.

- **What role has Librarians and Learning Skills Advisers played in teaching and learning through e-Learning at MUL?**
- **What measures were used to assess the effectiveness of e-Learning in IRLS?**
- **What challenges do Librarians and Learning Skills Advisers encounter in creating e-Learning content for IRLS?**
- **What are the strengths and limitations of e-Learning in the provision of IRLS?**

To this end, the researcher will touch on Monash University's e-Learning Strategy, the involvement of Librarians and Learning Skills Advisers in e-learning content creation and the challenges faced in this endeavour.

3.4 Scope of the study

The focus of this study will be on Librarians, Learnings Skills Advisors, e-Learning Co-ordinators, Information Research and Learning Skills Managers at both Monash University (MU) in Australia and Monash South Africa (MSA). Monash University is an Australian University with six campuses in Melbourne and two international campuses in South Africa and Malaysia. There are 10 libraries which operate within these campuses and each of these

Libraries is responsible for driving the university's e-learning strategy forward. In terms of curriculum content, policies, strategic directions etc., everything is the same in all countries except where the jurisdiction of the country takes precedence. Thus Monash University and Monash University Libraries (MUL) especially, offer the same resources, facilities, services and a uniform approach to all its students. It is against this background that this study will be conducted.

3.5 Population of the study

A study population is that aggregation of elements from which the sample is actually selected (Babbie, 2013). In simple terms, a population is the group of people that the researcher is interested in generalizing about. In order to make inferences, it is important that the target population of any study share similar qualities or attributes related to questions the researcher seeks to answer. For the purposes of this study, the population comprises of Subject Librarians, Learning Skills Advisers and e-Learning Co-ordinators and Information Research and Learning Skills Managers. These groups were targeted because of their direct involvement in the formulation of policy, content creation and instruction of information research and learning skills using e-learning platforms. MSA Library has town Subject Librarians and two Learning Skills Advisors and they will form part of the study. MUL has more than 200 Librarians and Learning Skills Advisors combined across the campuses. But due to geographical and other constraints, at least 10 of those targeted will be used. The population of all these groups in the entire university is too large to include so the sample chosen here is meant to be representative of the whole population.

3.6 Sampling and sampling strategies

Somekh and Lewin (2005) assert that social science research can focus on a specific population or complete set of units being studied when time, costs and accessibility often prohibit the collection of data from every member or about every item. Thus it becomes necessary to choose a 'representative sample' one in which the same range of characteristics or attributes can be found in similar proportions. A researcher can only generalize the research findings to the whole population only if the population sample is truly representative. The different sampling designs or strategies outlined below are

therefore necessary for researchers to choose from so that the potential limitations and bias are overcome. For this study, at least 15 respondents will form the basis of my conclusions.

3.6.1 Simple random sampling

Somekh and Lewin (2005) define this as a simplest strategy in which each population member has an equal chance of selection through 'pulling names from a hat ' or assigning each member a unique number and using random number generators. Babbie (2013) argues that this method is not always feasible and may not be the most accurate method available. The reason for this is that the mathematics of random sampling is very complex.

3.6.2 Systematic sampling

This sampling method uses a complete unordered list of all members of the population rather than random numbers in the selection process (Somekh and Lewin, 2005). For example, if the population list consists of 1000 elements and the researcher wants a sample of a 100, then every tenth element would be selected. To avoid bias in this method, every first element should be selected at random, according to Babbie (2013).

3.6.3 Stratified sampling

According to Somekh and Lewin (2005) stratified sampling involves ordering the sampling frame by one or more characteristics and then selecting the same percentage of people or items from each subgroup either using simple random or systematic sampling. In other words, the population is divided into homogenous groups which are meant to improve the representativeness of a sample. This ensures the proportionate representation of the characteristics of the population.

3.6.4 Cluster sampling

Babbie (2013) defines this as a multistage sampling in which natural groups (clusters) are sampled initially, with the members of each selected group being sub-sampled afterward. This kind of sampling is used when it's either impossible or impractical to compile an exhaustive list of the elements composing the target population.

3.7 Data collection methods and instruments

Babbie (2013) argues that data collection deals with observation, that data analysis looks for patterns in observations and where appropriate, compares what is logically expected with what is actually observed. Leedy and Ormrod (2005) warn that researchers must always be mindful not to take data as absolute reality or truth of the phenomena they're trying to observe. "Rather, data are manifestations of that reality" (Leedy & Ormrod, 2005:88). It is therefore important to look at data 'analytically' in order to gain new insights. Yin (2012) observes that case study research is not limited to a single source of data, as in the use of questionnaires for carrying out a survey. So, multiple sources of evidence are a good idea in case study research. This study will collect both secondary and primary data.

Secondary data is second hand data, or data that is derived from primary data. This type of data includes documents- published and unpublished, archival records, books, articles etc. Such documents as strategic documents, articles and published and unpublished papers specific to Monash University's e-learning will be used for this study.

Primary data includes interviews, direct observations, surveys etc. A questionnaire with open and closed ended questions and the observation method will be the primary instruments of data collection used for this study.

3.7.1 Questionnaire

The role of a questionnaire is to elicit the information that will enable the researcher to answer the objectives of the survey (Brace, 2013). To this end, it is important that the data collected is not only the data required, but must be as accurate as possible. The researcher has to seek accurate responses by formulating the most appropriate questions. It is therefore important to define or specify the objectives of the study in order to formulate questions that are unambiguous and that the respondents can answer. To make this easier, the questionnaire must always be aligned to the research objectives. Brace (2013:11) identifies some of the problems that a poorly formulated questionnaire can have and these are;

- Ambiguity in the question
- Order effects between questions
- Order effects within a question
- Inadequate response codes
- Wrong questions asked because of poor routeing
- Failure of the questionnaire to record the reply accurately or completely.

3.7.2 Observation

Observation is focusing on actions, the environment around you with a clear purpose of collecting data. Collecting observational data means that the researcher has to use all his senses and be aware and present in his environment. Yin (2012) asserts that the conventional manner of collecting observational data takes the form of using your own five senses, taking field notes and ultimately creating a narrative based on what you might have seen, heard, or otherwise sensed. Yin (2012) also reports that using formal observational instruments such as workplace instruments aimed at defining frequency and interactions can also be a good way to define and code other observed interactions.

3.8 Data analysis and interpretation

The centrepiece of qualitative research is formed by interviewing, observation and documentary analysis. Data analysis, according to de Vos et al., (2011), is the process of bringing order, structure and meaning to the mass of collected data. They go on to say that qualitative data analysis is first and foremost, a process of inductive reasoning, thinking, and theorising which certainly is far removed from structured, mechanical and technical procedures to make inferences from empirical data of social life. Babbie (2013) similarly defines qualitative data analysis as the nonnumerical assessment of observations made through participant observation, content analysis, in-depth interviews, and other qualitative research techniques. Based on the objectives of the study and guided by the nature of data collected, the observation technique will also form part of the analysis.

3.9 Ethical considerations

Research should be based on mutual trust, acceptance, cooperation, promises and well-accepted conventions and expectations between all parties involved in a project (de Vos et al., 2011). Ethical clearance that explains the purpose of the study and requests the participation of the respondents has been obtained from both Monash University and the University of Pretoria. Informed consent and voluntary participation of all those involved in the study has been considered. Matters of confidentiality, privacy have been adhered to.

CHAPTER FOUR:

PRESENTATION AND DISCUSSION OF FINDINGS

4. 1 Introduction

This chapter discusses the findings of the questionnaire which was administered as part of this qualitative study. The questionnaire was distributed to Subject Librarians (SL) and Learning Skills Advisers (LSA). As previously mentioned in preceding chapters, Monash University uses a specific model and framework that combines Research and Learning Skills. This unit is referred to as the Information Research and Learning Skills unit (IRLS). The Subject Librarians are responsible for teaching research skills to students and the Learning Skills Advisers are responsible for imparting Learning Skills. Research Skills include, but are not limited to, information and research literacy, finding resources, evaluating resources. Learning Skills focuses on academic/study skills such as writing, reading, referencing, speaking, listening etc. This model therefore brings together Subject Librarians and Learning Skills Advisers, groups that come from different academic disciplines, under the Library.

Their work is also informed by a framework called the Research Skills Development Framework (RSDF). In collaboration with academic staff, Subject Librarians and Learning Skills Advisers apply the RSDF to embed research skills into student learning. The framework, although not a prescriptive model, aims to conceptualise curriculum and assessment design and makes student research skills explicit and coherent within disciplinary content.

To achieve this objective, e-Learning has also become an integral part of the Library's strategy. Hence this mini dissertation's focus is on the contribution of Monash University Library (MUL) in teaching and learning through the medium of e-learning. For this study, the researcher distributed questionnaires with the hope of getting a response from 30 Library staff members (Subject Librarians and Learning Skills Advisers). However, the response rate was not as satisfactory as the researcher had hoped. First, getting the questionnaire out took some time because all the correct procedures and protocol had to be followed regarding ethical clearance (for both branches of the University in South Africa and Australia). The researcher had intended for the questionnaire to go out in December, when

the University was quiet and everyone was not too busy. But the questionnaire eventually went out in late January. As well, conducting a survey across campuses and countries made it difficult for the researcher to make individual follow-ups. The majority of the staff who would have provided more detail to the study is at the mother institution in Australia. The researcher had to rely on the few staff members she knew in Australia to "encourage" the Australian staff to complete the questionnaire. As the questionnaire was eventually sent out during the beginning of the semester, which is the busiest time for the University, the researcher understands that most staff did not have the time to give it their undivided attention. The researcher also understands that completing questionnaires is voluntary and cannot be forced on anyone, so for the purposes of time, the researcher had to make conclusions based on the sixteen staff who responded to the questionnaire. It would have been ideal if the chosen sample of thirty staff had responded. However, the researcher is satisfied with the rich detail provided in the comments of the respondents to make generalizations in the concluding chapter of this study.

For purposes of clarity and coherence, the findings of this study will be presented and discussed in the logical order of the questionnaire. The findings and discussions are informed by the aim and objectives of the study which were discussed in previous chapters.

4.2 Description of respondents of the study

As indicated in Chapter Three, primary and secondary data was used for the purposes of this study. A questionnaire was used as an instrument to obtain primary data. Observation techniques also form part of these findings. Some documentary sources were also used to obtain secondary data.

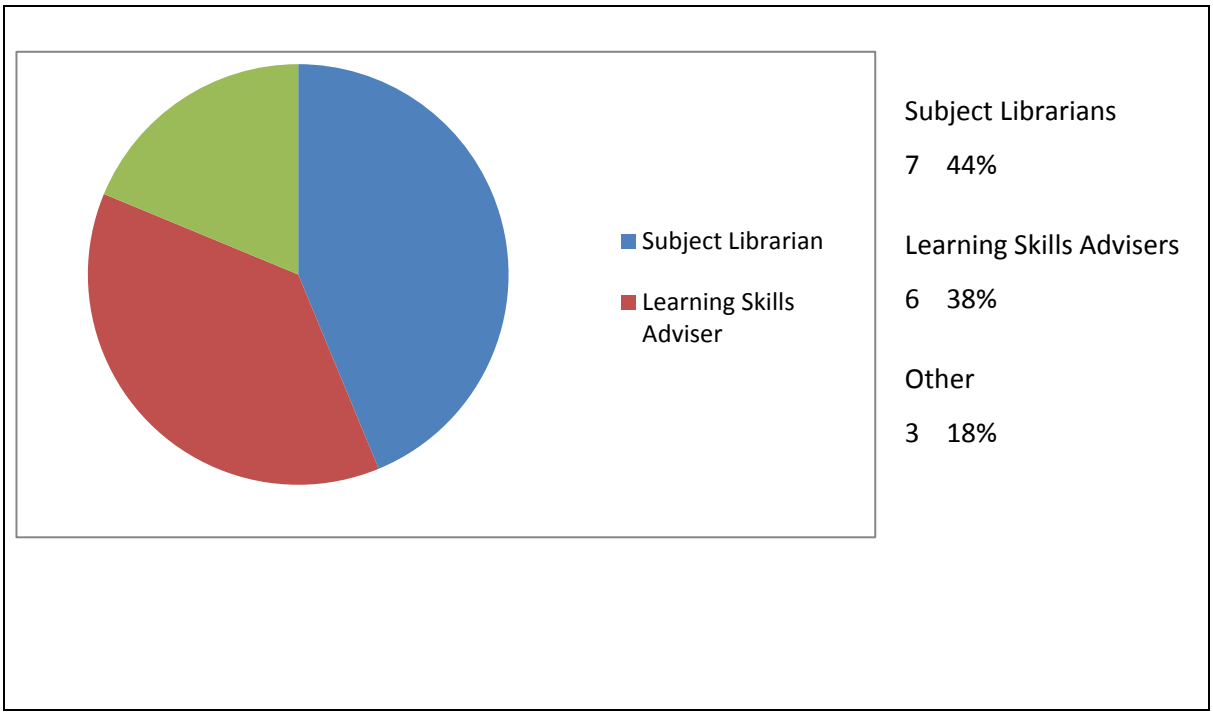
The respondents of this study include Subject Librarians, Learning Skills Advisers, and Information Research Skills Managers. The respondents were selected due to their direct role in creating e-Learning content for teaching and learning purposes.

4.2.1 Designation of respondents

The sample consisted of fifteen Subject Librarians, fifteen Learning Skills Advisers and five Information Research & Learning Skills Managers, and e-Learning Co-ordinators. The latter (Managers and e-Learning Co-ordinators) are represented under the category "other" in the

questionnaire. The reason for this is that the Managers, although they are involved in driving the strategic directions of e-Learning in the Library, do not directly create content. On the other hand, e-Learning Co-ordinators, together with SLs and LSAs, are directly responsible for the creation, editing and teaching of e-Learning. Their expertise therefore lies in content creation and instructional design, while the SLs and LSAs bring the pedagogical, research and learning skills to the table. Seven Subject Librarians responded to the questionnaire. Six Learning Skills Advisers also responded, as well as three Managers.

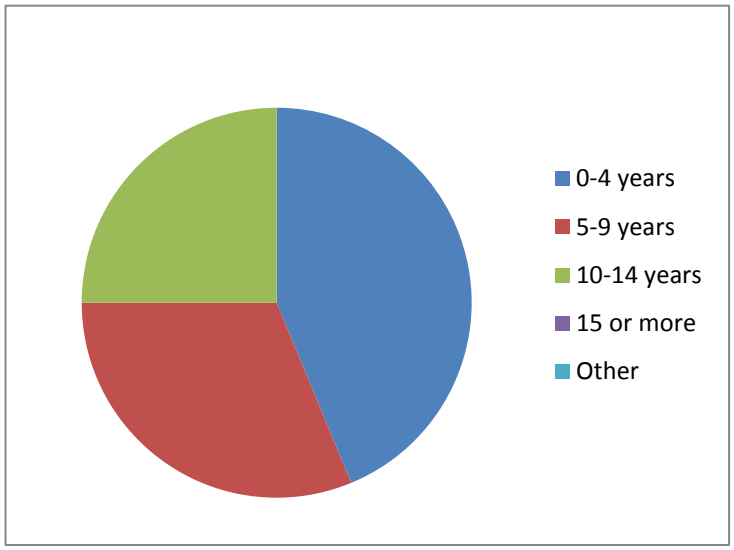
Figure 4.1: Designation of respondents



4.2.2 Period of service at Monash University

A total of seven (44%) respondents said that they have worked at Monash University for a period of less than five years. Five (31%) responded that they have worked for less than ten years and four (25%) said they have worked between ten and fourteen years. By asking this question, the researcher wished to ascertain whether or not the introduction of e-Learning in the Library has had any impact on their role and functions throughout the years. The researcher also wished to find out if there is any relation between years of service at MUL and the ability to understand and create pedagogically effective e-learning content.

Figure 4.2: Period of service

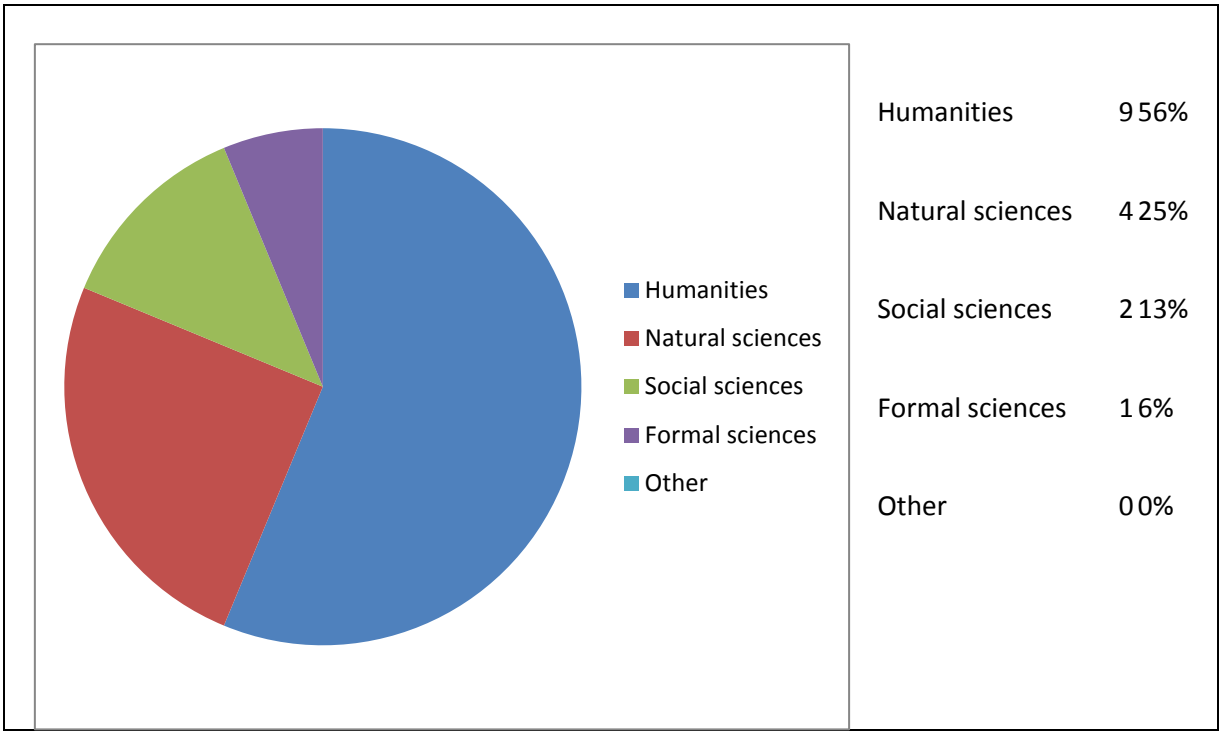


0-4 years	7 44%
5-9 years	5 31%
10-14 years	4 25%
15 or more	0 0%
Other	0 0%

4.2.3 Educational background

The purpose of this question was to find out if there is a link between the educational background of the respondents and their ability or susceptibility to creating e-Learning content. This question is also linked to the following question about the subject specialisation within the Library. Sometimes SLs and SLAs do not specialise in the academic disciplines for which they studied. Thus, the researcher wished to ascertain whether there was a link between study discipline, subject specialisation at MUL and the ability/openness to creating e-Learning content. Humanities was reported by nine (56%) of respondents as being their study discipline, with four (25%) reporting Natural Sciences, two (13%) the Social Sciences and one (6%) Formal Sciences [sic].

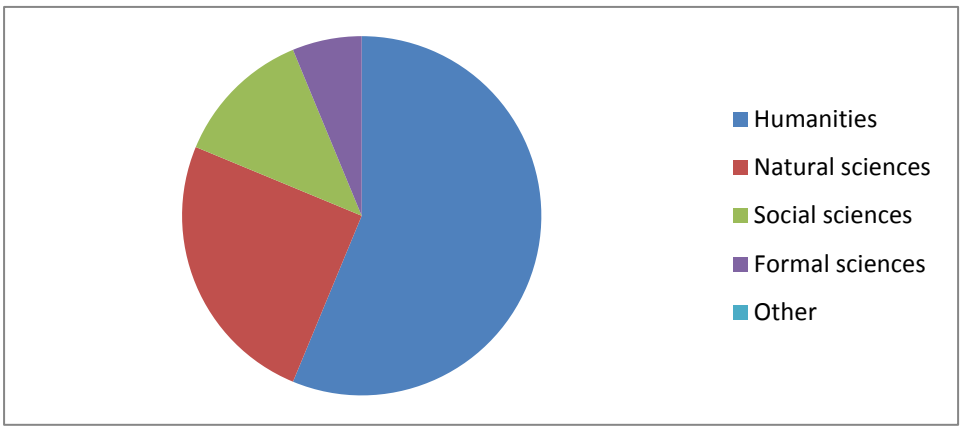
Figure 4.3: Educational background



4.2.4 Subject specialisation at Monash University

Of the sixteen respondents, five (31%) were from Arts, one (6%) Arts, Design & Architecture, three (19%) Business & Economics, one (6%) Engineering, one (6%) Law, one (6%) Medicine, Nursing and Health Sciences, one (6%) Science, three (19%) other. There was no representation from the Pharmacy and Pharmaceutical Sciences, Information Technology and Education.

Figure 4.4: Subject specialisation at MUL



Art, Design and Architecture	1	6%
Arts	5	31%
Business and Economics	3	19%
Education	0	0%
Engineering	1	6%
Information Technology	0	0%
Law	1	6%
Medicine, Nursing and Health Sciences	1	6%
Pharmacy and Pharmaceutical Sciences	0	0%
Science	1	6%
Other	3	19%

4.3 Respondent's definition of e-Learning

The researcher requested a definition of e-Learning as a means of assessing the respondent's understanding of pedagogy and its relation to creating e-Learning content. As well, respondents were asked to differentiate between e-Learning and blended learning. The respondent's definitions of e-Learning showed an understanding of the basic principles of e-Learning.

The responses were as follows:

i. Any activity that allows students or staff to learn new content or skills in an electronic form.

ii. The process of learning in an electronic environment. Either using technology in the face to face classroom or participating in learning in the online space.

iii. Using electronic and online tools to learn.

iv. Blended learning provides an integrated platform for online and face to face learning.

v. E-learning is the delivery of a learning, training or education programs by electronic means. It involves the use of a computer or electronic device in some way to provide training, educational or learning material.

vi. E-Learning encompasses the use of information communication technology to create and deliver learning activities as well as the activity of learning itself through an online environment.

vii. E-learning is the use of technologies in education as an alternative to traditional teaching and learning methods.

viii. Using online resources to facilitate development of knowledge and understanding about new content.

ix. The use of online technologies to enhance the learning process and student outcomes.

x. E-learning is the provision of materials for learning online.

xi. E-Leaning is the electronic delivery of a learning, training or education program for distance learning purposes.

xii. I would define e-learning as the process of learning a skill or acquisition of knowledge via an online tool. So it is the effective use of technology, in an online setting, to allow students to develop this knowledge or these skills. E-learning would allow students to read/view information, practice or interact with the new information, and be allowed to demonstrate their understanding.

xiii. Learning programs or courses that are delivered via the internet using interactive content and learning resources and assessments.

xiv. Acquiring knowledge and skills using material delivered electronically. Learning with ICTs.

xv. Any situation in which the learning materials are provided to the learner electronically. This includes contexts where the learner learns alone or in collaboration with others, with or without access to a 'teacher' for questions and feedback. The materials can range from electronically provided readings through to highly interactive learning activities. However, my main impression of e-learning is interactive.

4.4 Expertise needed to create pedagogically effective e-Learning content

The purpose of this question was to find out if the educational background, technical skills, pedagogical theories of learning and teaching of the respondents played a role in their understanding of what constitutes pedagogically-effective e-Learning content. The comments of respondents were:

i. I think we need greater skills than we already have. Personally, the more I delve into the development of e-learning objects, the more I realise I don't know. Sometimes I think I need a teaching degree in order to be able to apply sound pedagogical strategies in the e-learning objects I develop. I feel I need to know more about how people learn. I know a lot about the resources, research strategies, collection and

software in my area - but the challenge for me is how to effectively teach in an online setting, all this information.

ii. Sound educational theory, a nuanced view of the benefits and limitations of e-learning, and expertise in the software.

iii. You must be tech savvy, understand the pedagogical principles of teaching and learning.

iv. A sound understanding of pedagogy and andragogy in both online and offline teaching spaces * An understanding of different software, including strengths, weaknesses and capabilities of each. * Knowledge of where to find information about new software and uses of existing materials (e.g. knowing of appropriate blogs, twitter accounts etc. where online learning is discussed) * Confidence to try new things! * Recognition that the content isn't as important as the process, and that online learning is different to offline learning, and resources should be constructed with that in mind. * Understanding of 21st century learners and how the 'Google generation' thinks.

v. Curriculum design skills, technical skills, interpretation, knowledge of pedagogy, understanding student learning and understanding of curriculum design.

vi. You need to understand electronic platforms (you need the skills to use the software), and which platform would be best for which activity. You also need expertise in educational design, in order to create resources that add value to learning, not just an online version of your class.

vii. Instructional design skills, social media skills and basic IT background.

viii. Sound knowledge of pedagogy: how learning takes place, curriculum/materials design; practical ability in using the media chosen; knowledge of how people interact with and respond to the features or application of various media - the usability do's and don'ts.

ix. Sound pedagogical underpinnings and strong technology skills and flexibility.

x. An understanding of theory underpinning e-learning. An awareness of tools available for e-learning. A capacity to use these tools.

xi. In law, you need a knowledge of the legal research cycle/process which enables a practitioner or researcher to go from a legal problem to a solution based on the primary sources of law (and hopefully but not necessarily) reinforced by secondary sources. You also need a sound knowledge of databases: not only how to search them, but the contents in them (i.e. where to go for a specific resource). Not all legal problems are solved through using the steps in the research process in a certain order. You need to make it very clear to the students which steps you are planning to take and the reasoning behind this choice. I believe you need to be able to describe exactly what a student will see if they do certain actions. Nothing annoys me more than being told to expect to see certain information and it isn't on my screen. Another annoying thing to avoid is skipping through what seems to be "self-evident" steps to the designer but may not be to the student.

xii. Experience and expertise teaching face to face; an understanding of the fundamental principles of teaching and learning, creativity and imagination to be able to engagingly create/re-create a learning experience for the student in an electronic environment; a clear understanding of the learning goals; opportunity for the student to review how their learning is progressive, empathy with the students' experience of an online learning environment, feedback that includes a human element.

xiii. Some educational knowledge and fundamentals backed up by technical expertise or capacity to follow instructions by someone who is a technological wizard!

xiv. You need to have a background in education, and to understand that there are stages that a student goes through when encountering an activity online (whether a person is mediating this experience or not). You need to understand how people learn, and also how people teach.

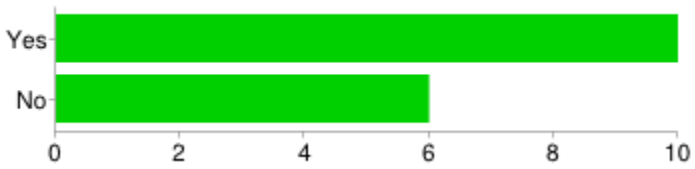
xv. 1. Good foundation in didactics, learning theory and motivation theory 2. Subject knowledge 3. Creativity 4. Software skills in designing e-learning material.

xvi. A good knowledge of best practice learning pedagogy and how that can be interpreted into an online environment while maintaining academic integrity. Sound IT skills - to be able to design and deliver content and resources online.

4.5 Attendance of e-learning/educational/instructional design courses.

Ten (63%) of the respondents said they have attended an e-learning/educational/instructional design course while 6 (37%) reported that they have never attended one.

Figure 4.5 e-Learning/educational/instructional design courses



Yes	10	63%
No	6	37%

4.5.1 Purpose and usefulness of the course.

Most respondents found the courses they attended useful and some wished that such courses should be available on a regular basis.

i. I studied for my Graduate Diploma of Education in 2002, and learned about how to teach in the face to face environment. I have attended the Monash University Library e-learning course, and found it to be a useful reminder about educational theory and instructional design.

ii. No, I did not attend any courses.

iii. It was a Captivate training course intended to teach us to create e-learning modules.

iv. I have not attended any specific courses, but have attended numerous conferences, workshops, showcases and seminars, many of which I find useful. Mostly I learn through trial-and-error. I find that most e-Learning courses are often behind-the-times and far too basic for my needs.

v. I completed an online course from the University of New South Wales designed to explain various electronic platforms and how these can be used effectively in teaching. I found this a very useful tool, particularly in regards to the use of social media in teaching, as I had not utilised that platform before in my teaching.

vi. No I did not attend a course.

vii. Not at Monash University but has previous experience outside the University.

viii. A Library run Captivate course. The best part of the course was learning about storyboarding and preparation before using the software. This is fundamental. Expertise with software does not equate to good educational practice.

ix. Not attended.

x. Attended a captivate training course to learn skills and techniques to build eLearning content, learning how to create learning content using different media formats, text, images, animation, audio and video. The course was useful because it was hands on and I actually acquired practical skills.

xi. To create an online learning module. Very useful.

xii. It was a Moodle course and although there was too much to absorb, I understand what it was trying to achieve.

xiii. I began using computer managed learning back in 2002 (at another university) when it was VERY new. A lot of the early training was learning how to use the CML system (Blackboard). In the early days, the CML often couldn't do exactly what you wanted so you needed to be shown workarounds by people who had more system knowledge than yourself. Loading files used to be tricky and I needed training on zipping and unzipping and moving around large files. As CMLs became more

sophisticated and offered more functions I attended training on updated versions of the system - learning the new features and exploring how they could be used in student learning. So to start with, the capabilities of the system drove what could be achieved. I have done training on Moodle which showed me how to do basic functions like loading files and quiz construction. The last training I went to was on constructing multiple choice questions and how to write them to truly test student learning. It was very helpful and I would like to go to more such sessions but I don't see many advertised that I can get to.

xiv. Moodle to supplement lectures.

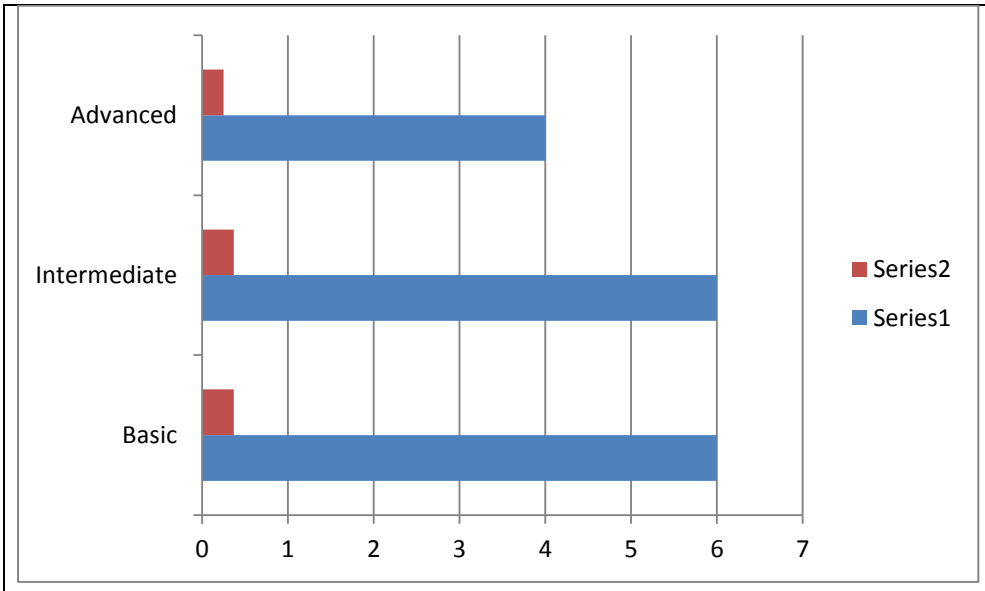
xv. I have attended many training sessions, probably too numerous to mention. But for example, Moodle training, TechDating workshops that showcase a variety of new e-learning tools like Explain Everything, Powtoon, iMovie, Captivate training. As to usefulness; many of the sessions are very brief and are more like demonstrations. The most useful sessions have been the formal Moodle training workshops. I have used Moodle more than the others, as I find the functions like Moodle quizzes, Moodle books etc. are easy to use and are integrated into the student learning space. I found the Captivate training served to scare me off, in a way. It is quite complex and very time consuming, and I don't have time to spend on developing one small e-learning object at the expense of other important work. So I have fallen back on simple things like SnagIt video captures to quickly demonstrate how to search for a particular thing.

xvi. No I have not attended any courses.

4.6 Skills and knowledge in creating e-Learning content.

The issue of skills has been a contentious one as many library staff feel that they neither have the skills nor the expertise (especially technical skills) needed for creating effective e-learning content. Only 25% of the respondents said they have advanced skills in this area. Most responded that they have basic and intermediate skills.

Figure 4:6 Skills in e-Learning content creation

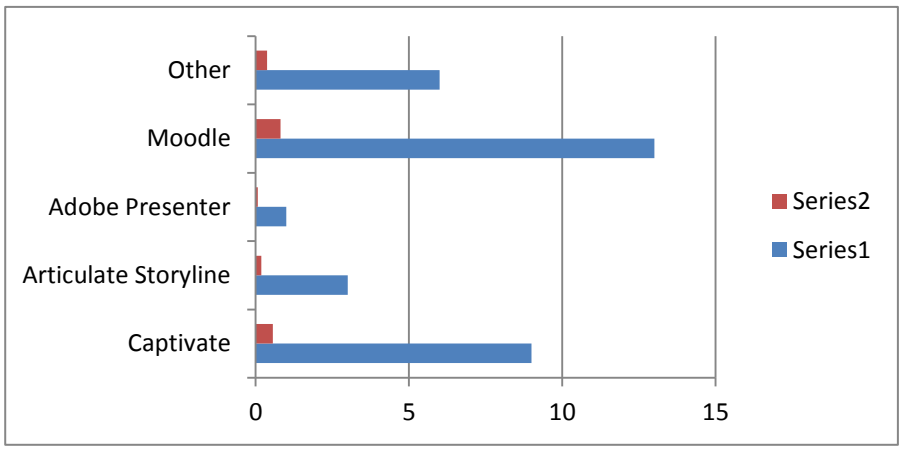


Basic	6	37%
Intermediate	6	37%
Advanced	4	25%

4.7 Platforms and tools used to create e-learning content at MUL

Instead of relying on costly and time consuming external vendors, MUL decided to invest in e-Learning technologies by purchasing different platforms and tools to create and deliver e-Learning content. The aim was to empower staff and develop their skills in this area.

4.7 e-Learning tools and platforms



Moodle	13	81%
Adobe Presenter	1	6%
Articulate Storyline	3	18%
Captivate	9	56%
Other	6	36%

4.8 Use of e-Learning in Information Research and Learning Skills

One of the functions of the Library, and specifically the IRLS unit, is to teach information research and learning skills to students. The crux of this study was to find out how the Library has used e-Learning to enhance and impart these skills. It addresses one of the research questions which asks "**How has the Library used e-Learning to enhance Information Research and Learning Skills**". The respondent's answers were as follows:

i. Referred students to available resources on the library website. Attempted to develop a Learning skills Moodle platform, this has not been used widely by students. Use of share drive to make information available to students.

ii. I have used quizzes to impart and test knowledge. I am developing an online module to enable clients to complete a task.

iii. I haven't created any e-learning content yet.

iv. Moodle quizzes to test learning.

v. Create awareness on Moodle about Learning Skills through simulations etc.

vi. Adapting existing resources to suit an online environment. Creating interactive resources / instructional videos for incorporation into new or existing Moodle sites.

vii. Created presentation for students as guide to using a database and is available within the Moodle site for Business Law Unit.

viii. I collaboratively worked on a Moodle course, ILearn, for English Language bridging students which effectively replaced face to face classes which could no longer be delivered due to the increased numbers of students. I have developed online videos that have been embedded in a Moodle unit associated with quizzes to test knowledge (international studies). Developed small SnagIt videos embedded in library guides to help students find things quickly (French, international studies). I mentioned Library guides because this is where we can place small e-learning objects, if we do not already have access to a Moodle unit. This benefits IR&LS because students and information point staff can go to one place for their subject area and find useful and instructional information.

ix. Mainly in creating online tutorial versions of learning skills workshops so that students can review content in their own time as needed, and for students who are unable to attend in person.

x. Law has created Captivate clips for the Law Library Guide as well as for Moodle units.

xi. To vary the format and to take the place of pages of words! Some software enables the creation of bright and engaging presentations.

xii. Some of the things I have made have allowed me to share a learning experience with my students, rather than providing them with 'answers', which is the usual outcome of a reference transaction.

xiii. Online lessons (in Moodle), short Explain Everything videos to help students with specific assignments, using Turnitin etc.

xiv. I suggest the creation of e-learning resources to subject librarians and learning skills advisers for activities that are repeated in classes many times over the year that would lend them to an electronic environment. This can be for either staff sustainability reasons or to chance the student learning experience. These activities are usually broad IRLS skills and not disciplinary specific - although they can be! Availability 24/7 to students of these resources enhances opportunities for students to develop IR skills at the point of need.

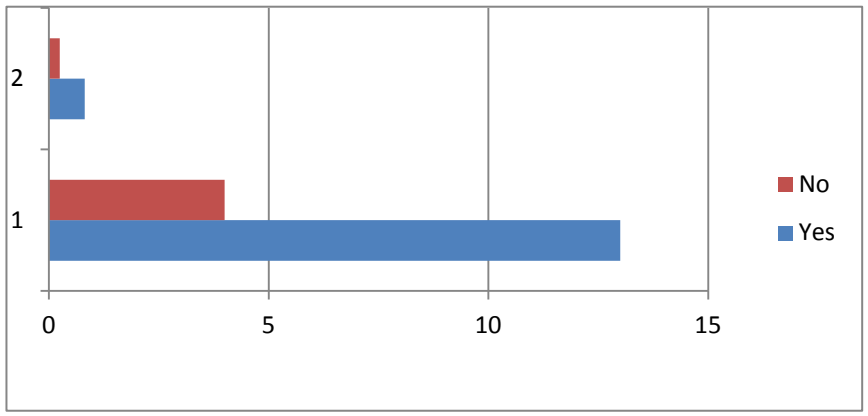
xv. My online resources are used in two ways. Firstly, I use pre-class videos to convey basic information so that more in-depth discussion and practice can occur in class. I also have an entirely online course that students work through on demand when they feel they need more information about a particular skill. I can use this online resource to direct students to when I see them at the Research and Learning Point as well.

xvi. E-learning increases the flexibility, accessibility of the library resources.

4.8.1 Creation of e-learning modules/simulations or tutorials for Information Research and Learning Skills

Most respondents to the study reported that they have created e-learning modules, simulations or tutorials for IRLS. A total of twelve (75%) reported that they have created an e-learning resource while four (25%) reported that they have never created any.

Figure 4.8 E-learning modules for IRLS



Yes 12 75%

No 4 25%

4.8.2 Purpose and processes followed in creating the resource/s.

The purpose to this question was to find out if there was any collaboration between the Academics, SLs, LSAs, e-Learning Co-ordinators and any other stakeholders in creating these resources. Most responded that they collaborated with other stakeholders as creation of such resources needed input from different experts, especially subject experts.

i. I have participated in the creation of modules for Law and Pharmacy. The purpose was to offer resources where time might be an issue for students, and to create a kind of "back up" for students who need extra help. The process was: decide on learning outcomes, design activities to transfer learning. Test, re-test, release as pilot, update after a specified period of time.

ii. I have created a range of e-learning tools, for example a module on how to place a hold in Search, Moodle books and quizzes for units. The processes I have followed have been discussion with stakeholders, planning of the elements needed and then use of software to make this happen.

iii. N/A

iv. Just contributed content, did not do any formatting or design of delivery.

v. To develop better resources for students to be used online.

vi. As stated in my answer to the question above, I have adapted existing resources to suit an online environment. I used a Moodle Course ILearn for Monash College students (collaborative project). The purpose was to deliver content and develop skills that used to be given in face to face workshops. Moodle unit was developed in close liaison with the College and involved a number of library staff. It was a complex process, required access to an external Moodle site. Moodle was the platform but we created a range of objects within that: captivate clips, readme, show me: Prezi slideshows, etc. French studies video clips. A colleague and I made some very quick engaging video clips using Powtoon and SnagIt for students looking for materials in French. These were embedded into the revamped Library guide: http://guides.lib.monash.edu/french-studies International Studies, Contemporary Worlds. First year students had to view three YouTube clips created using Explain Everything then do a quiz in Moodle. They got 5% for doing this and it was developed in liaison with the academic staff and learning skills advisers.

vii. Mainly to reach students who are unable to come to Learning Skills classes. Collaboration with academics is always crucial in creating such modules in order to blend content and make these relevant to students.

viii. Law is creating an Advanced Legal Research Skills module for use with honours students (in process). Semester 1, 2015 will see us use a new module for the first semester law subject, Foundations of Law. This will replace 30 odd workshops to cover the 550 new law students. We will still lecture to the students twice in the unit, but in lectures. This will replace the many workshops of the past which were unsustainable for us. To create this resource we adapted the old face to face workshop to the digital environment. There are video clips of us speaking as well as activities and quizzes.

ix. Documentation created by the e-Learning Co-ordinator, like - Guide me and Show me (which are templates that can be used for creating interactive simulations of software or interactive presentations)

x. N/A

xi. Academic integrity modules. A small team used Google Sites to storyboard the modules in an open, evolving process (i.e. we didn't spend a lot of time planning - we spent a lot of time creating and modifying).

xii. The purpose was to create a series of modules to teach all aspects of academic integrity which could be used by students for private or by teaching staff. A team of learning skills advisers and librarians brainstormed the topics and worked with technical experts to devise a structure. The subject experts wrote the text and designed the learning activities, which the technical experts created the modules. They were then reviewed by a number of subject experts and further refined before student testing. Further changes were made, then the final editing and proof-reading before release.

xiii. The purpose was to reach students who may have no opportunity to attend training sessions. There are standard templates and format created by the E-Learning Co-ordinator.

xiv. I was involved in the creation of the Academic Integrity tutorial and the Turnitin Library guide. The tutorial was a long process involving storyboarding, electronic and face-to-face communication, focus groups etc. The library guide was created quickly and involved electronic communication and face-to-face meetings, and staff and student testing.

xv. To make the process of teaching clients to do the task more sustainable than face to face one on one consultations. To enable clients to learn about and complete the task remotely. I worked through the Library's e-learning course so the approach was very comprehensive involving consultation with stakeholders, completion of storyboards etc.

4.8.3 Type of content and tools used when creating these modules/tutorials

Here, the researcher wished to understand if there is a relation between the type of content and the tools used in creating e-learning content. For example, would a SL or LSA use different software in creating a Turnitin tutorial as opposed to a Referencing one? Some respondents felt that it was more about the learning outcomes than it was about the tools. Also, others thought that student's needs, subject content and learning objectives were the deciding factor in choosing the type of tools suitable.

i. Sometimes I create something because I want to try out a particular piece of software. However, usually I try to match the learning outcomes with the functionality of the software. Frequently the content is a response to a request from a lecturer.

ii. Trial and error, as well as desire for variety.

iii. N/A

iv. See Q. 10's response [Moodle quizzes]

v. Tools were decided by what was available. The modules were designed to be open access, which informed some decisions. Content was informed by common student queries and misconceptions, as well as a white paper and the experience of the team members.

vi. Tools were suggested to me - Moodle and Captivate, but someone else coded the Captivate to my relief!

vii. N/A

viii. That is decided between the academic and the learning skills adviser. Modules that do not address what the lecturer is trying to assess or expose students to, are useless.

ix. We thought about how students would approach the learning topics and tried to create content that would work sequentially or independently.

x. This was based on the learning objectives of the module, our knowledge of the process and how clients learn/engage with the process.

xi. Content was decided by subject experts through a process of brainstorming, discussion and collaboration with academics. Tools were chosen from those available to the Library on advice from technical experts.

xii. Moodle unit ILearn. We decided Moodle would be the best way for students and teachers to access and interact with the information. Teachers would be able to go through the content in class with students (in theory, in some cases, this didn't happen). We would be able to see who and how many students had completed the unit, the statistics in Moodle are very good and allow us to track which units were 'difficult' for students based on answers to the quiz questions and number of attempts. Moving from face to face classes for an entire cohort of students required a very effective alternative. Other e-learning objects developed for use in lectures or library classes, and embedded in library guides or Moodle units. If the purpose is to provide an engaging clip in a lecture, I would select something like Powtoon or Prezi. If the content needs to be more instructional, you could use SnagIt and iMovie, Captivate and Articulate. Access is becoming very important via mobile platforms, phones and iPads etc. Some software do not display on mobile devices so this is a big consideration.

xiii. There are certain things students need to know to successfully complete their first Foundations of Law (FOL) assignment. All of these things e.g. how to find an Act of parliament, which we covered in the workshops were adapted to online. There is a 5% research quiz for this unit, so we need to make sure they have been shown everything they will need to successfully attempt the quiz as well.

xiv. It is the university Library's choice.

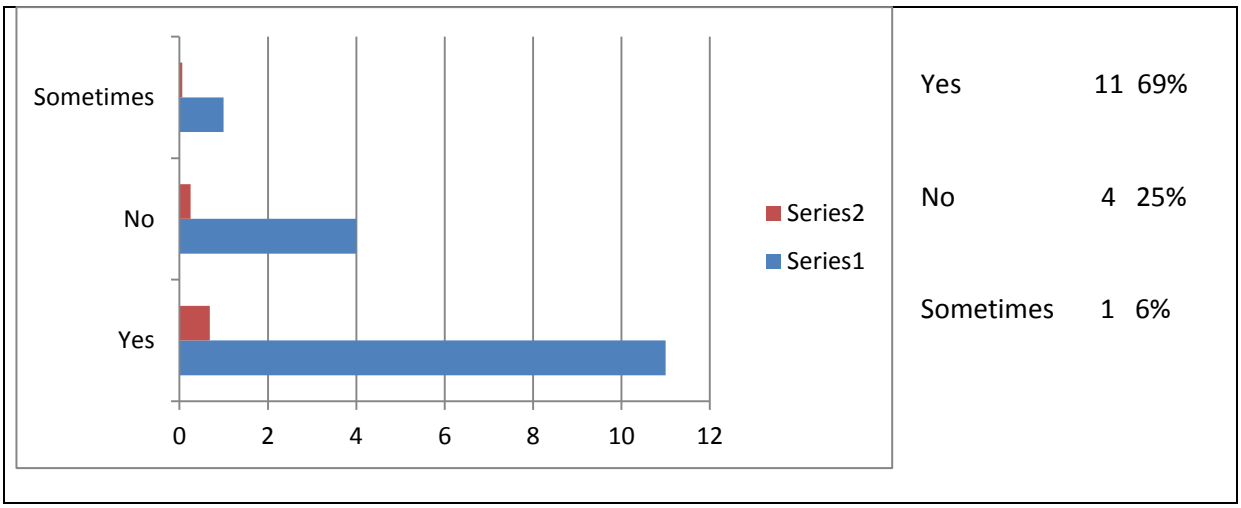
xv. By examining the content and determining how it could be best developed to suit an online environment. Using different software programs to develop learning activities / tutorials.

xvi. I design the content according to the needs of the students and align them with the subject content. With tools, it depends on the platform to be used for e-learning. Moodle for example you can add video, URL, presentation, chapters, articles and add assessment

4.9 Collaboration with academic staff for the purposes of embedding curricula and unit specific programs when creating e-learning modules

Embedding curricula and unit specific programs is at the core of all IRLS activities. This also applies to the creation of e-learning content. This function therefore cannot be performed without some collaboration with academic staff as they are the subject specialists and better suited to advise on the desired learning outcomes they want from students. To this end, eleven (69%) reported that they work in collaboration with academic staff to achieve this objective, four (25%) said no, they don't and only one (6%) said they do occasionally.

Figure 4.9: Embedded e-Learning modules



4.10 Promotion of e-learning modules and tutorials to students

This is an important question because the researcher was trying to find out if all these efforts towards delivering information services through e-Learning actually achieved their purpose. The availability of all these e-Learning resources on the library website is wonderful but the researcher was curious to know how students actually get to see and use them. Most respondents seem to favour Moodle as a great platform for promoting these.

Others mentioned Library orientation and workshops, asking lecturers to promote them and similar strategies.

i. The Foundations of Law (FOL) tutorial is explained in the unit guide and all the lecturers mention it. We go into the lectures in week 1 and introduce it and explain why doing it will make writing their first assignment so much easier. This unit has a tab on the Law Library Guide, where the tutorial is mentioned again. If students come to the desk with a query we will ask them if they've done the tutorial. The tutorial is within Moodle: there is a section in the unit for Library materials.

ii. During orientation and class training session students are guided to the tutorials and encouraged to use them for their academic work.

iii. Through course specific Moodle sites, Library orientation, presenting at workshops and orientations.

iv. Moodle - my own site and individual unit sites where relevant.

v. N/A

vi. In class contact sessions (tutorials etc. as arranged by lecturers, in individual sessions, via email queries, make links available on the share drive.

vii. Through Moodle mainly. In class and when we have individual face to face sessions with students.

viii. For unit specific e-learning modules/objects - it is always in conjunction with the academic staff. So if we develop something for a unit, in general we would be given an opportunity to introduce ourselves at a week 1 lecture for example, and place the e-learning modules on Moodle (ideally) or on the Library guide. If we run library classes for a unit, we would obviously promote the resources in those classes.

ix. Promoted via email from some Course Coordinators and Unit Coordinators. Embedding links on the Library Guide.

x. Website, links in emails answering questions, at seminars and meetings.

xi. Mainly through Moodle.

xii. Placing the materials in Moodle is a form of promotion that is hard to beat! It's an endorsement from the lecturer that this material is important. We promote via the website and if a student emails me I sometimes send a link to a useful tutorial or module.

xiii. Library website and Moodle during orientation Library blog and various social media platforms. During Information research and learning skills training sessions.

xiv. All of the above.

xv. I encourage staff to use faculty and Library connections (personal connections with academics, through faculty meetings, library meetings such as IRLS through presentations to members) to promote these materials as well as the library's formal communication channels - blogs, website and the Marketing and Communications Team.

xvi. Moodle, Facebook and email.

4.11 Assessment of the effectiveness of e-learning tutorials/modules

This question follows from the previous one. Here the researcher wanted to find out how exactly does the Library assess or measure the effectiveness of these e-Learning modules. It addresses one of the research questions which asks "**What measures were used to assess the effectiveness of e-Learning in IRLS"**

Generally, the effectiveness of information literacy as a whole is hard to measure. Eisenberg (2008) says that there are three essential skills for effective information literacy and these are the information process itself, technology in context and real needs (personal, education or work needs). The researcher had Eisenberg's essential contexts for IL in mind when asking this question. Most respondents said usage statistics from the modules, lecturer feedback re: student performance, stats from quizzes etc. However, there was one interesting answer that said "That is the missing link".

i. Usage, lecturer feedback.

ii. That's a difficult one! I suppose if lecturers report an improvement in student's assessment tasks? Some of the modules do collect usage stats as well but that doesn't always mean effectiveness right?

iii. We ask the lecturers about the research the students did when completing the first assignment. Over the years the research has got better and the writing is more of a problem. We have a look at the answers to the quiz questions to see if there is a particular type of question that the students are having trouble with and revise the material accordingly. There are heaps of statistics you can get from Moodle on what the students looked at, how long they spent on a particular section etc. so we run those see if they can tell us anything.

iv. N/A

v. This is reflected in their performance in class assignments as well as group presentations.

vi. Student feedback (informal), staff feedback about assignments, quiz scores.

vii. Student enrolment in Moodle courses. Stats generated from participation in Quizzes / online tutorials.

viii. Evaluation form, direct feedback.

ix. That is the missing link!

x. Feedback forms and verbal feedback.

xi. None.

xii. Personally I don't evaluate these resources; however I provide guidance as to how to obtain evaluations of the resources created. I rely on subject Librarians, LSAs and E-Learning coordinator to organise evaluation and to provide me with the evaluation feedback. Usually, staff undertake focus group sessions for qualitative feedback and review. However, I do remind staff of tools like analytics and web usage statistics to obtain quantitative data.

xiii. Number of students accessing the tutorial and response from students/academics.

xiv. That's a good question. With the Contemporary Worlds Moodle quizzes - we looked at the overall responses for an idea of how well students answered the questions. From memory it was pretty good. For the ILearn Moodle unit, it was possible to look at student responses to quiz questions, but anecdotally, we still receive a lot of queries at the research and learning point from these students needing help with research basics. This is where a better pedagogical knowledge is needed in library staff in order to measure and evaluate learning more effectively.

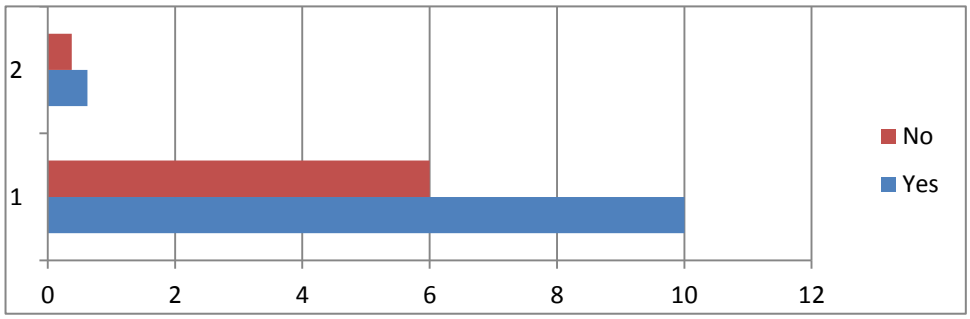
xv. Library survey, students and staff feedback.

xvi. None to date.

4.12 Moodle units or e-learning content embedded into a Moodle unit(s)

A total of ten (63%) respondents said they have created Moodle units or have embedded e-learning content into a Moodle unit. The rest of the six respondents (37%) said no, they have not created Moodle units.

Figure 4.10: e-Learning Moodle units /e-Learning modules in Moodle



Yes 10 63%

No 6 37%

4.12.1 1 if yes, please elaborate.

i. Moodle unit for learning skills.

ii. See answers to 10 and 11 above.

iii. Last year I created three Moodle books. One took the place of a lecture (the lecture fell on Good Friday). I work intensively with the lecturer to create this and we wrote it together. The quiz for the module was worth 19%. Another module was assessed by a hurdle quiz. From discussions with the lecturer, this year I am adding some interactive activities about referencing to help the students. The other module was just added to Moodle with no assessment.

iv. See above. The Research and writing unit in semester 2 ceased with the 2014 offering. The teaching from that unit is now to be spread through Foundations of Law and the second semester compulsory unit. We also create content for the postgraduate law students.

v. Restricted access to the university Leaning Management System-Moodle also lack of access to the Units and schools Moodle sites. Access is assigned by the unit heads who are sometimes at a different campus.

vi. I created an academic integrity 'quiz' and video as part of the online orientation Moodle site in my faculty. Also, I am in the process of writing some brief e-learning modules for a new unit.

vii. Developing and adapting resources for MARS (Mastering Academic Research Skills for Post-graduate students) Moodle site. Developing supporting resources for Bus Eco courses / units.

viii. All the e-learning content I've created has been embedded in Moodle.

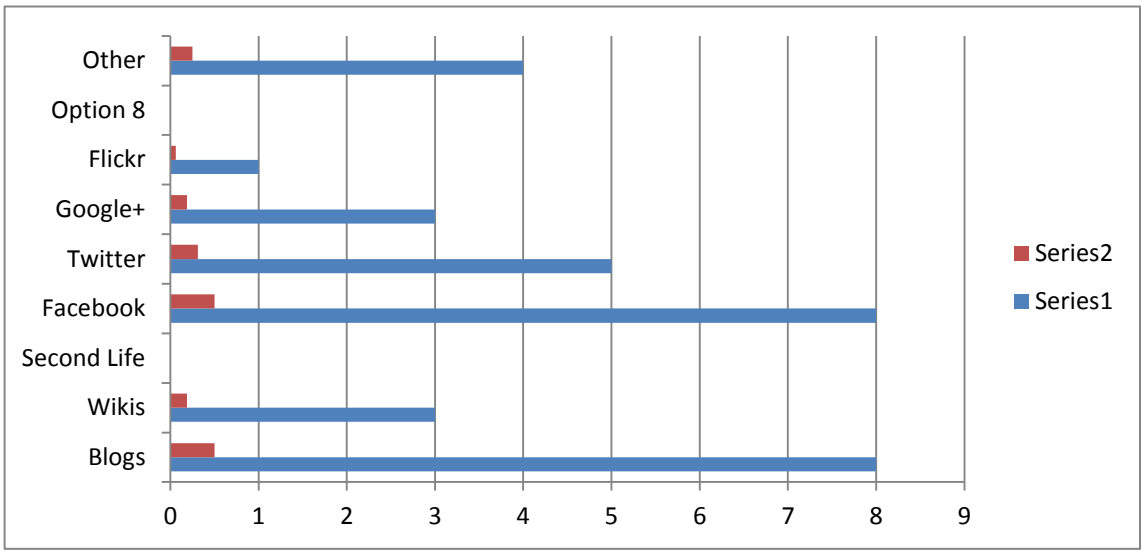
ix. Videos explaining the effectiveness of the RSD.

x. Too many to list!

4.13 Participation in social networking initiatives

Social networking has become an integral part of library services worldwide. It is used as a form of marketing tool for library services and is sometimes effective in communicating to library users. The researcher wanted to ascertain whether the Library staff used any of these platforms. The following chart represents the results;

Figure 4.11 Participation in social networks



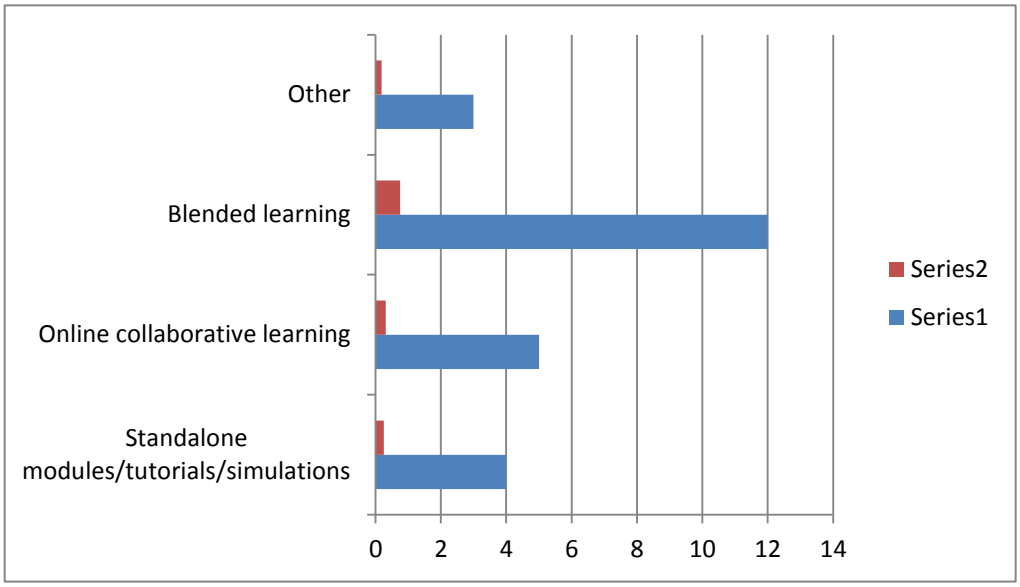
Blogs	8	50%
Wikis	3	18%
Second Life	0	0%
Facebook	8	50%
Twitter	5	31%
Google+	3	18%
Flickr	1	6%
Other	4	25%

4.14 Preference of e-learning models

This and the following question were posed to better understand which e-learning models the Library staff themselves preferred and why. In this instance, the researcher wanted the respondents to put themselves in the situation of a student, and in so doing, to think about

the needs of the students when creating e-learning content. Surprisingly, 75% of the respondents prefer the blended learning model, as indicated in the chart below. The general consensus is that blended learning provides for both teaching and learning styles. Human interaction the respondents felt, was still very important. A mix of the traditional method and online learning is therefore desirable.

Figure 4.12 Preference of e-Learning models



Standalone modules/tutorials/simulations	4	25%
Online collaborative learning	5	31%
Blended learning	12	75%
Other	3	18%

4.14.1 Reasons for choice of preferences e-learning models

Following from the previous question, where respondents were asked to say which type of e-learning models they preferred, these were the reasons they gave for their preferences.

i. For me, blended learning is the only thing that makes sense. Students learn through interacting with peers more than through didactic knowledge transfer, and they have more fun. University should be a social experience. Standalone modules get boring because there is no humanity in there. Having two people in a room doing a module is a lot better.

ii. Blended learning is good because it mixes human interaction with technology. I think balance is important for these two learning models and they suit different learning styles and therefore accommodate students from different learning backgrounds.

iii. I think blended learning is the best form of teaching and learning in the 21st century. We can't totally do away with traditional teaching and learning methods and on the other hand we can't ignore technology. A blending of the two makes for perfect teaching and learning.

iv. The best way to go is to look at the learning outcome you are after and then look at the model that will get you there. So the question is better asked as "With the learning outcomes being equal, which of these learning models would you prefer to try?" Then I would answer "blended learning". Best of both worlds.

v. Not so keen on so called 'discussion forums' that take place over weeks with large number of students (60+). My experience has been that these forums are not very well moderated and that the discussion tends to be dominated and therefore directed by the same people. If the moderator does not pick up on this and bring in people from the fringe, a true 'discussion' does not take place. Also, a discussion that takes weeks is not a discussion either, it is disjointed and does not have immediacy. Students tend to think too long about their answer and take time to respond so it is not a conversation 'on the fly'. This can be very frustrating (and I have had this experience!). In a face to face session in real time the teacher would bring in people who had not contributed (hopefully) and the discussion would be made up of people's thoughts as they occur.

vi. Prefer a combination of learning opportunities. I still feel that face to face contact with teachers is important.

vii. I like the idea of being able to learn part of what I need online, but also of having the opportunity to interact with others in a physical environment and ask questions, discuss and engage with colleagues and other learners.

viii. Provided the method is suitable for the task and learning objectives I'm open to it.

ix. Combination of face-to-face and online learning seems to be a good model for better teaching and learning and possibly leads to better outcomes for students in terms of offering differentiated learning.

x. I have no preference of one over the others.

xi. Blended learning. It allows for collaboration and information sharing with other students.

xii. Blended learning is mostly preferable in this case because the content is integrated within the curriculum. Students learn and acquire skills while working on their subject. Online collaborative learning develops higher level thinking skills. Increases student retention. Builds self-esteem in students. Enhances student satisfaction with the learning experience. Promotes a positive attitude toward the subject matter. Creates an environment of active, involved, exploratory learning.

xiii. I have selected all the options as it would depend on what I was learning. Some materials lend themselves more readily to standalone modules and others require human interaction. For example, I would not like to study a university unit which had no human interaction.

xiv. I regularly participate in MOOCs, where the courses are designed to be exclusively online. In these situations I prefer to be able to work at my own pace, choosing the content I want to work through when I want to look at it. I also recently completed a copyright course online, where participants were grouped and collaborated by email and Google docs. This was a very productive experience, but we were learning theory and the course was specifically designed to be online. If I was learning something more hands-on or for credit, I might well prefer an exclusively in-person or blended course, where specific time is allocated to the activity, other students are

around in person to talk to, and there is someone available to query. My hobby is dance - it would be nearly impossible to learn much through blended or online modes in this case!

xv. Standalone modules are useful when you would like to learn only one or a few particular skills. Blended learning adds value to classroom time, making learning more effective. I have found online collaborative learning cumbersome and difficult to manage. As such I would prefer not to participate in that form of learning.

xvi. Mix of different modes of learning so suits me at different times and gives flexibility. Also allows for preparation before the class.

4.17 Challenges encountered in creating e-learning content

Considering that e-Learning, especially in the context of libraries, is a relatively new trend in education, the researcher wanted to find out what challenges these Library staff experienced in relation to this. This was directed to one of the research questions "**What challenges do Librarians and Learning Skills Advisers encounter in creating e-Learning content for IRLS".** Most reported lack of skills, proper training and time.

i. As a Learning Skills Adviser I often have very little time to create this type of content.

ii. Lack of training and skills.

iii. Time to learn how to use the technologies is the big challenge.

iv. I want to make quality items, but I am not an educational designer. I can jump in and have a go, but what I produce will never be as good as a Pearson branded e-learning course with millions of dollars spent in graphic design.

v. N/A

vi. Learning how to use the programs necessary to modify / deliver the learning resources online.

vii. Lack of access to suitable software. Lack of suitable online spaces to host content. Bureaucracy and a lack of understanding of effective e-learning at some levels of the organisation. Time.

viii. Time! I don't always have time to learn the software. At present I am creating material and a Reference Librarian is using Articulate to create the modules. This works well. However I think this type of partnership works well if the content creator has knowledge of the software as well.

ix. The hardest thing is to find the legal examples which will interest the students AND teach them the required skills. So I am always looking for "weird cases" etc.

x. Limited by having to use specific software. Need to develop resources that suit all electronic devices. Accessibility.

xi. Bandwidth speed. Technology support. Lack of training in online teaching and delivery no buy-in from academics. Lack of skills in curriculum design. Restricted access to the university Leaning Management System-Moodle.

xii. The pace of technology. Just as you get to grips with one style or method of content delivery, another comes along. Hard to keep up!

xiii. Time to develop e-learning content and continue to deliver existing teaching.

xiv. I believe in social interaction, I enjoy interacting with students in a class or face to face setting. It’s not always easy to create online content for the reason that you can't put a face to what you're trying to communicate. Students also cannot ask questions or ask you to clarify something they don't understand, as they would in a class setting. I'm still old school that way, we are physical beings and technology takes away a lot of physical interaction.

xv. So many challenges that sometimes I think I am more of a content creator than a librarian! Challenges: Keeping up with the technology. Learning a tool and grappling with technicalities, getting it to work. Time consuming x 10. Updating the learning modules, lot of work. Feeling that it eats into the time for other responsibilities: collection development, responding to complex research queries, learning more about data management etc.

xvi. Time. Lack of training. Content design format or standards. Work load.

4.18 Strengths and limitations of e-learning for Information Research and Learning Skills

As the creators of the content, the researcher wished to see if the respondents were performing this function because it was part of MUL's strategic priorities or because they believed in what it was trying to achieve. It also addressed the last research question "**What are the strengths and limitations of e-Learning in the provision of IRLS".** The first respondent articulated it extremely well.

i. Access: Making training more available to learners. Cost: Reducing training costs. Content: Increasing the scope of offerings. Relevance: Making training more meaningful to people's work. Speed: Responding to constant change and rapid product innovations. Efficiency: Avoiding scheduling of classroom training and booking instructors. Empowerment: Putting the responsibility for learning in the hands of learners. Convenience: Letting time-pressured students learn at the best time and place. Disadvantages: Loss of contact with the Librarian. Impersonal tools and environments require specialised tools and specialist technological skills.

ii. Strengths: Students can access resources when they need/want to; good for very general information, or very specific (e.g. targeted at a specific assignment), but not so good for in-between (especially database searching which appears simple but is actually very complex) Weaknesses: Students have no clue most resources exist, one size does not fit all - each student has their own context and needs, and no resource can work for everyone. Students who have limited computer skills or access struggle to use online resources. Badly designed resources can mean students don't trust online materials (especially true for international students).

iii. Limitations: Students who lack computer skills need attention and struggle in their academic work if this area has been neglected. The e-learning content does not cater for all students learning styles, behaviour and this is often neglected or overlooked. There is always a need for face to face consultation. Strengths: Enhances students' previous experience of learning through using online mode. Encourages student independent critical thinking. Enhances student online research skills.

iv. Strengths: can be used anywhere anytime as needed by students, students can work at their own pace, learners can focus on the content they need and skip content they already know. Limitations: danger of using technology for its own sake, learners can't ask questions as they go, learners can skip learning activities and consolidation tasks.

v. Strengths are its flexibility, potentially allowing students to learn when it suits them. E-learning can be of benefit to learners who need more time to complete tasks. If e-learning provides a variety of learning types (aural, visual) then this can be a plus also. Disadvantages are the loss of human contact, which is an important factor in learning. Risk of library staff being seen as redundant 'because it is all online'. Once you have created the resource people don't recognise the fact it has to be kept updated and maintained - can't use the online resource and sack the staff member.

vi. Its strength lies in the fact that it transcends issues of time and place but it also accommodates those who are prone or enjoy technology.

vii. E-learning can add value to the students' learning experiences, ensuring that they are able to better understand complex concepts and practice these in class time. In terms of limitations it is possible to create e-learning content purely for the sake of creating something online, which does not add educational value. Also, time-constraints make creating this type of content difficult. In particular, resources created in Captivate can take a very long time to create and as a Learning Skills Adviser I do not have that sort of time available.

viii. E-learning is a tool. Its weaknesses and strengths come from the way in which people use it. An uncritical approach to e-learning creates false expectations. E-learning in itself is not a solution.

ix. E-learning has the potential to reach more students (more accessible). Students can also opt to study the material in their own time or when it suits them. Limitations are that some students may need more contact with tutors / lecturers in order to increase motivation to learn. E-learning does not necessarily suit the needs of all types of learners.

x. I think strengths lie in that they are easily accessible and content is always there whenever students need it. Information Research and Learning Skills are lifelong learning subjects and cannot always be taught in a class format. Therefore e-learning works best to impart these skills. Limitations are that you can't always measure their effectiveness.

xi. We don't evaluate what we create enough.

xii. Limitation: We're not graphic designers. Some of the things we make will look decidedly lo-fi. Strength: The more we learn about e-learning, the closer we are to understanding how to simply and efficiently explain the process of learning and research.

xiii. Limitation - not getting direct feedback from client - verbally, body language. Strength - less work once it's developed - not repeating same information, only those motivated will complete - (no-shows to F2F [face-to-face] classes).

xiv. Strengths: Allows students to access the content at their own time and pace, and revisit information if they need to. Allows students to independently practice and test knowledge and skills. Limitations: Not always cross platform friendly, i.e. mobile devices. Sometimes you just need to talk to someone. If the e-learning module isn't pedagogically well designed, might not give all the information needed. Some students like to learn in a collaborative environment.

xv. Strengths - reach large numbers of students. Save staff time repeating some learning activities that could be standalone activities. Sustainability. Availability any time anywhere (hopefully!). Limitations - Time it takes to develop the resource and to develop your expertise! Reviewing and updating content.

xvi. Strengths: *Allows self-motivated students to find information on their own and also extend their skills *Makes information available even off campus *Reach a much wider group of students *Supplements face to face contact as students can follow up after classes Weaknesses *Quality of the material - needs to be good to interest and motivate students *needs to be easily traceable and accessible

4.19 Conclusion

This chapter presented the findings based on the questionnaire which was administered for the purposes of this study. The concluding Chapter Five will be based on these findings as well as some literature sources that were consulted by the researcher. Recommendations will also be made based on these findings.

CHAPTER FIVE:

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter aims to summarise the findings of the study as well as to make recommendations related to the main research questions the study aimed to address.

E-Learning has become one of the dominant forms of teaching and learning in higher education. Libraries too are under pressure to engage with technology in areas which traditionally have not been in their domain of information provision. As Ward (2010) argues, methods of accessing and engaging with information are in a constant flux. The librarian's instructional role has been broadened; hence libraries are now exploring the possibility of using e-learning technologies to offer their services. This study endeavoured to explore the role and contribution of the Monash University Library (MUL) in e-learning, especially pertaining to the provision of Information Research and Learning Skills. This initiative of bringing e-learning to the Library was necessitated first, by Monash University's plans to exploit technology to improve learning outcomes using blended and online learning. Secondly, the availability of a vast array of information resources and services in the library made e-learning another viable option in diversifying these resources and services as widely as possible. Also, MUL has 10 libraries spread across different campuses and countries (Australia, South Africa and Malaysia), therefore information literacy instruction and provision by means of Librarian & Learning Skills Adviser-only interaction became an insurmountable task. Bringing to students the vast amount of resources (which includes over 1 300 databases, 80 000 e-journals and 480 000 e-books, past exam papers, lectures online, online reading lists) and services and making sure that they are aligned with the university's learning outcomes became a challenge. E-Learning was adopted by the Library as a way to facilitate student's ability to learn effectively from any place and anytime. As stated in the MUL e-Learning Strategy 2013-15 (2013) " these modes of learning offer new opportunities to access, manipulate and disseminate information; to construct knowledge in ways that are immediate, collaborative and decentralised and to improve learning".

This study's aim was to explore how Monash University Library used e-learning to enhance Information Research and Learning Skills. This main research question is informed by the principal aspect that concerned the researcher: the effectiveness of e-learning in IRLS. Additionally, the researcher wished to document the challenges encountered by Librarians and Learning Skills Advisers in the creation of e-learning content for IRLS; and the strengths and limitations of e-learning in the provision of IRLS.

This was a qualitative research study and the researcher employed the case study method. For data collection purposes, an online questionnaire was the most suitable instrument given the geography and diversity of the population group.

5.2 Summary of findings

Below is the summary of the findings as discussed in the previous chapter. The findings are arranged in line with the focus areas of the study.

5.2.1 Expertise in creating pedagogically effective e-Learning content

The definitions of e-learning supplied by respondents showed a clear understanding of the pedagogical principles that underlie e-learning in the educational context. Therefore, staff is cognisant of the link between e-learning content creation and how it fits within the broader educational objectives of Monash University. However, the findings also reveal that the knowledge and expertise considered necessary in e-learning content creation was quite diverse. Most respondents also felt that they didn't possess enough of the skills necessary to create such content. Linking e-learning to sound pedagogy is the basis of creating effective content but that is not quite enough. A sound knowledge of the fundamental principles of teaching and learning, educational theories, a teaching qualification, IT skills, instructional/educational design, and curriculum design are some of the skills and expertise the respondents felt they needed.

Although some respondents had some experience or had attended a course in e-learning content creation, there was a need to continue skilling in this area. Only 25% of the population group felt that they had advanced skills in e-learning content creation. This indicates a clear need for continuous training in this area as it evolves, as the curriculum changes and student needs change. As one respondent commented, "I learn through trial-

and-error. I find that most e-Learning courses are often behind-the-times and far too basic for my needs". This is an indication that e-learning technologies change rapidly and staff have to keep abreast with these new developments if they are to deliver effective e-learning teaching and learning content.

5.2.2 e-Learning in/for Information Research and Learning Skills

The main aim of e-learning initiatives at MUL is to enhance Information Research and Learning Skills. The research question asked in relation to this is "how has MUL used e-learning to enhance Information Research and Learning Skills"? The findings revealed that the Librarians and Learning Skills Advisers have actively and successfully created a substantial number of e-learning objects using different platforms and for different tasks with differing learning objectives. Some of these objects included Moodle quizzes and courses, instructional videos embedded on Moodle, online tutorials for differing tasks, among others. As well, the researcher observed that the development of the Monash Library E-Learning Objects Repository indicates that there is an active engagement with e-learning in the library. The vast array of e-learning objects in the repository is a clear indication of how involved Librarians and Learning Skills Advisers are in content creation.

The need for the creation of the different types of content was attributed to various reasons ranging from lack of contact time with students, requests from academics for such resources and minimising the number of contact workshops for teaching such skills. One of the respondents mentioned that these resources can be used as 'backup' by students who need extra help. Another respondent also highlighted the importance of collaborating with academics when creating these modules in order to blend content that is relevant to students.

The types of e-learning software that were used to create these IRLS modules were Moodle, Adobe Presenter, Articulate Storyline and Captivate. Moodle came out as the most preferred platform as 81% of the respondents reported that they have used it most. As well, Captivate came out as another preferred platform for creating e-learning content. This is one of the platforms on which MUL conducted focused training of staff. In 2012, MUL undertook a wide training programme of staff on new e-learning technologies and Captivate was the main focus of this training. The main aim of the course was to empower staff with

the knowledge and skills to create e-learning tutorials that are aligned with the learning objectives of Monash University. In their paper titled "Online learning: eM-powering eFutures through developing staff capability at Monash University Library" Smith and Yates (2012:25) report that staff evaluation and feedback after the course indicated that there was a need for "further investigation into how other libraries in Australia and around the world address staff training of complex subject matter and skills and in geographically dispersed working communities". Furthermore "the course should be about much more than using a piece of software but also about the e-learning development process".

5.2.3 Effectiveness of e-learning in IRLS

Evaluating the effectiveness of IRLS or Information Literacy is perhaps the most difficult part of library and information instruction. Now, e-learning in IRLS provides an even more complex dilemma for librarians as there is no face-to-face interaction and one cannot always measure the student's response. Even in a workshop or face-to-face interaction, there is no certainty that the skills that students have learned will translate into better academic performance. First, the study revealed that the Library uses a lot of platforms and initiatives to promote e-learning objects. They mention Moodle (course-specific Moodle sites) as the most effective platform to promote them especially if embedded with a specific task or objective that the students are working towards. Orientation, class contact sessions, embedding in subject guides and individual consultations are some of the platforms respondents said they used. Also, academic staff are seen to be the best people to advertise these as students have more contact time with them and generally take what their lecturers say more seriously.

Now, all these initiatives still do not translate into how effective they are in teaching and learning. Usage statistics of the e-learning objects, lecturer feedback (in terms of student performance in assignments), informal student feedback and evaluation forms are some of the assessment measures used by the respondents. However, some respondents gave an indication that this is one area that is difficult to answer. One respondent articulated it this way: "that's a difficult one! I suppose if lecturers report an improvement in student's assessment tasks? Some of the modules do collect usage stats as well but that doesn't always mean effectiveness right?" Judging from this response, the researcher might

conclude that this is perhaps one area where a concerted effort needs to be made with regards to assessing the effectiveness of e-learning in IRLS.

5. 3 Challenges in e-learning content creation

The study indicates that most of the challenges encountered in e-learning content creation had to do with time constraints, lack of skills and the rapid developments in e-learning technologies, which the respondents felt they had no time to keep up with. The balance between being a Librarian/Learning Skills Adviser and a content creator was seen as one of the challenges. Respondents felt that content creation took them away from their main responsibilities. Others felt that they were 'old school' and preferred interacting physically with students. As one respondent puts it: "it's not always easy to create online content for the reason that you can't put a face to what you're trying to communicate. Students also cannot ask questions or ask you to clarify something they don't understand, as they would in a class setting".

E-learning content creation requires dedicated time and respondents felt that this was time they didn't have as they had more pressing responsibilities. Time pressures and lack of skills therefore came up as the biggest challenge in e-learning content creation.

5. 4 Strengths and limitations of e-learning in the provision of IRLS

As reported in the previous chapter, the researcher wished to establish whether MUL staff embarked on e-learning initiatives because it was part of the Library's strategic priorities or if they actually believed in what it was trying to achieve. As creators of the content, the researcher felt it was important for the respondents to put themselves in the student's shoes and assess these as a student would. That way, they could look objectively at e-learning for IRLS, not as creators but as receivers of the content. It is important to address these challenges in order to improve on best practices and to address issues that might otherwise not be evident to Library management. And where there are strengths, it is also important to take note of these and use these to improve in other areas.

5.4.1 Reported strengths of e-learning in IRLS

The research reports on some of the strengths of e-learning in IRLS such as that e-learning allows for a wider reach of services to students, anytime, anywhere. There is no limit to how many times a student can interact with a module, all content is repeatable. E-learning also accommodates independent learning styles. It saves Librarians and Learning Skills Advisers time as there is no repetition in tasks done in class for example. One respondent articulated the learning process involved in e-learning quite well when she said “the more we learn about e-learning, the closer we are to understanding how to simply and efficiently explain the process of learning and research”.

E-learning also encourages independent critical thinking in learners by putting the responsibility for learning in the hands of learners. It also reduces training costs and increases the scope of offerings. And lastly, e-learning allows for a quick response to constant change and rapid product innovations.

5.4.2 Reported limitations of e-learning in IRLS

These were some of the reported limitations of e-learning in IRLS. E-learning does not cater for all learning styles. Some students lack the computer/IT learning skills needed for effective interaction with e-learning content. There is not enough awareness of the existence of e-learning resources; most students don’t know that they exist. Also, some respondents felt that the lack of human interaction with Librarians and Learning Skills Advisers made staff to feel redundant. It was also reported that the effectiveness of e-learning in IRLS was quite difficult to measure. Although usage statistics and student feedback were seen as measures, some respondents felt that these cannot be used to determine effectiveness. Another limitation that came out often was the lack of instructional design skills by staff. The respondents felt that lack of skills culminated in poor quality content. One respondent also mentioned that e-learning modules were not cross platform friendly, they could not be used on mobile devices for example. This is a big limitation in an environment where learners use a variety of devices, especially mobile devices. The idea behind e-learning is that resources and services must be available anytime, anywhere. Therefore e-learning technologies should be compatible with varying types of ICTs.

5.4.3 Conclusion

One of the questions the researcher asked the respondents was which type of e-learning models they preferred between standalone modules/tutorials/simulations, online collaborative learning and blended learning. Surprisingly, 75% of the respondents said they preferred the blended learning model. Some of the reasons cited for this preference were that blended learning caters for both learning styles. A mix of traditional and online teaching and learning methods was more ideal than either one of these learning models. Others felt that the type of e-learning model used should always be dictated by the desired learning outcomes of the task or activity at hand. There's no 'one size fits all' in the e-learning context and therefore content creators should well understand the learning objectives of the tasks they create content for. One respondent articulated it quite well when she remarked "E-learning is a tool. Its weaknesses and strengths come from the way in which people use it. An uncritical approach to e-learning creates false expectations. E-learning in itself is not a solution".

The findings of this study reveal that e-learning in Information Research and Learning Skills is changing the way the Library provides its services to the University. There has been considerable success in this endeavour but there are still challenges. What is evident from the research is that there has not been a thorough evaluation of the effectiveness of e-learning in IRLS. There is no clear indication of how these activities translate to better learning outcomes. Again, usage statistics or student enrolment on e-learning Moodle units cannot be used as a measure of the effectiveness of e-learning in IRLS. As with Information Literacy training, the important measure lies in the assessment of student academic performance and the consequent determination of its effectiveness, not in the number of students who attend IL training sessions. This kind of assessment becomes even more complex in an e-learning environment.

E-learning will continue to shape the academic landscape and academic libraries have to play a pivotal role in delivering their services in this medium. What is pertinent is that e-learning must not happen for its own sake, an effort needs to be made to ensure that there is a real value add to academic teaching and learning. The study concludes by making recommendations based on the findings of the research.

5. 5 Recommendations

Based on the conclusions of this study, the researcher would like to make the following recommendations;

I. A conceptual model to measure the effectiveness of e-learning.

The effectiveness of e-learning in teaching and learning still remains debatable in e-learning research and literature. Leung (2003:124) says that "the important goal of e-learning is that it should be equivalent to or better than learning provided through other delivery modes, such as the traditional face-to-face and classroom-based methods of instruction". The difficult task of evaluating learning is even more compounded in e-learning. As the study shows, a lot of the respondents couldn't exactly provide a satisfactory account of the effectiveness of e-learning in IRLS.

MacGregor and Turner (2009) argue that while some studies support the view that there is no evidence to support the contention that e-learning is more effective than traditional teaching methods: others actually found e-learning to be more effective. They go on to say that there is a need for greater emphasis on empirical research and researchers in this field need to be more cognisant of the multifarious variables that influence e-learning effectiveness. They list these variables as "level of learner control; social interactivity; learning styles; e-learning system design; properties of learning objects used; system or interface usability; ICT and information literacy skills; and the manner of degree to which information is managed with the e-learning environment" (MacGregor & Turner 2009:163).

What is evident in this study is that there is a theoretical understanding of e-learning based on sound pedagogical foundations. The focus seems to have been biased towards content creation and up to the date this research was concluded there does not appear to have been a focus on evaluating these efforts. The researcher would therefore suggest that a thorough assessment into the effectiveness of e-learning in IRLS be conducted. There are many proposed models for evaluating e-learning effectiveness but very few fit within the context of academic libraries and information literacy. Therefore, MUL should develop its own assessment model that is aligned with the curriculum and the Research Skills Development Framework. That way, when Librarians and Learning Skills Advisers create e-

learning content, they have a conceptual framework that guides them. Macgregor and Turner's variables mentioned above could be used as a guide into what to include in such a model.

II. Introduction of e-Learning Librarians

One of the major issues Librarians and Learning Skills Advisers mentioned in the study is that they hardly had the time to create e-learning content. They had many other responsibilities and content creation requires a considerable amount of time if it is produce quality. Coupled with expertise, which many felt they did not have, the researcher would suggest that the Library introduces the new role of e-Learning Librarian. This role would work closely with the e-Learning Co-ordinator/Instructional Designer, but would bring the IRLS expertise needed to create this type of content. In that way, only Librarians who are passionate about this field would apply and they would then be responsible for training, content creation and most of the duties related to e-learning in IRLS. Perhaps the e-Learning Librarian can also investigate the role Librarians can play in course-integrated instruction and curriculum planning, as these are areas which require first hand involvement by the Library better to produce effective e-learning content for improved teaching and learning. This role would also foster a much more collaborative relationship between academics and the Library.

III. Continuous training and skilling of staff

The rapid changes in ICTs in Higher Education require an intense focus on skilling and re-skilling of staff. Libraries especially have become hubs of information and technology and many librarians are not fully equipped to deal with these new developments. New fields like Data Management, E-learning, Blended learning, E-resources etc. have emerged and these require that librarians engage in teaching and learning in ways that previously were not in their domain of expertise. Therefore, there is a need to constantly make training an integral part of their functions. Technologies change rapidly, and as one respondent remarked, your knowledge can get outdated very easily in this field. As Ward (2010) argues, the convergence of e-learning technologies, new practices in the broader teaching world and increasing volume of information and information literacy, have all reaffirmed the academic library as central to teaching and learning. If the Library is to continue to exploit technology

to improve learning outcomes and remain central in the education process, they have to put a concerted effort into staff training and skilling.

REFERENCES

Association of College & Research Libraries (ACRL) 2000. Information literacy competency standards for higher education. http://www.ala.org/acrl/standards/informationliteracycompetency [Accessed 18 January 2015].

American Library Association. 1989**.** *American Library Association Presidential Committee on Information Literacy. Final report*. Chicago: ALA. http://www.ala.org/acrl/publications/whitepapers/presidential [Accessed 18 January 2015]

Andretta, S. 2005. From prescribed reading to the excitement or the burden of choice: information literacy: foundation of e-learning. *Aslib Proceedings*, 57 (2) 181-190.

Arp, L., Woodard, B. S., Lindstrom, J. & Shonrock, D. D. 2006. Faculty-librarian collaboration to achieve integration of information literacy. *Reference & User Services Quarterly,* 46 (1) 18-23.

Babbie, E. 2013. *The practice of social research.* 13th ed. Melbourne: Wadsworth.Bird, D. & Nicholson, B. 1998. A critique of the drive towards the globalization of higher education. *Research in Learning Technology,* 6 (1) 1-7.

Brace, I. 2013. *Questionnaire design: how to plan, structure and write survey material for effective market research*. London: Kogan Page.

Catherall, P. 2005. *Delivering e-learning for information services in higher education.* Oxford: Chandos.

Chickering, A. W., & Gamson, Z. F. 1987. Seven principles for good practice in undergraduate education. *AAHE Bulletin*, 39 (1) 3-7.

Clegg, S., Hudson, A. & Steel, J. 2003. The emperor's new clothes: globalisation and e-learning in higher education. *British Journal of Sociology of Education,* 24 (1) 39-53.

Creswell, J. W. 2009. *Research design: qualitative, quantitative, and mixed methods approach.* Los Angeles: Sage.

De Vos, A. S., Strydom, H., Fouche, C. B. & Delport, C. S. L. 2011. *Research at grass roots: for the social sciences and human service professions*. Pretoria: Van Schaik.

Eisenberg, M. B. 2008. Information literacy: essential skills for the Information Age. *Journal of Library and Information Technology*, 28 (2) 39-47.

Eke, H. N. 2010. The perspective of e-learning and libraries in Africa: challenges and opportunities. *Library Review,* 59 (4) 274-290.

Felix, U. 2005. E-learning pedagogy in the third millennium: the need for combining social and cognitive constructivist approaches. *ReCALL,* 17 (1) 85-100.

Free, Libre and Open Source Software in Education. 2005. (Critical) history of ICT in education – and where are we going? *FLOSSE posse*, weblog post, 23 June, http://flosse.blogging.fi/2005/06/ [Accessed 26 June 2014].

Freeman, G. T. 2007. *The library as place: changes in learning patterns, collections, technology and use.* Washington: Council on Library and Information Resources. (CLIR series: 129)

Gandolfo, A. 1998. Brave new world? The challenge of technology to time-honoured pedagogies and traditional structures. *New Directions for Teaching and Learning,* 76 23-38.

Garrison, D. R. & Kanuka, H. 2004. Blended learning: uncovering its transformative potential in higher education. *The Internet and Higher Education,* 7 (2) 95-105.

Garrison, D. R. & Vaughan, N. D. 2008. *Blended learning in higher education: framework, principles, and guidelines*. San Francisco: Wiley.

Gay, G.R., Salomoni, P., Mirri, S. 2008. E-Learning. In Freire, M., & Pereira, M. (eds). *Encyclopaedia of Internet Technologies and Applications.* Hershey, PA: Information Science Reference, 179-184.

Gilbert, J., Morton, S. & Rowley, J. 2007. e-Learning: the student experience. *British Journal of Educational Technology,* 38 (4) 560-573.

Govindasamy, T. 2002. Successful implementation of e-learning: pedagogical considerations. *The Internet and Higher Education,* 4 (3) 287-299.

Gruca, A. N. 2010. E-learning in academic libraries. *New Review of Information Networking,* 15 (1) 16-28.

Guri-Rosenblit, S. 2005. Eight paradoxes in the implementation process of e-learning in higher education. *Higher Education Policy,* 18 (1) 5-29.

Hadengue, V. 2004. What can e-learning do for university libraries? *Library Review,* 53 (8) 396-400.

Hadengue, V. 2005. E-learning for information literacy: A case study. *Library Review,* 54 (1) 36-46.

Harasim, L. 2006. A history of e-learning: shift happened. In Weiss, J. and others (eds). *The international handbook of virtual learning environments*. Dordrecht: Springer, 59-94.

Herrington, J. 2006. Authentic e-learning in higher education: design principles for authentic learning environments and tasks. In Reeves, T. & Yamashita, S. (eds). *World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*, Honolulu, Hawaii, October 2006. 3164-3173.

Herrington, J., Reeves, T. C. & Oliver, R. 2010. *A practical guide to authentic e-learning.* New York: Routledge.

Herrington, J. & Oliver, R. 2000. An instructional design framework for authentic learning environments. *Educational Technology Research and Development,* 48 (3) 23-48.

Hew, K. F., & Cheung, W. S. 2014 *Using blended learning evidence-based practices.* New York: Springer.

Holmes, B., & Gardner, J. 2006. *E-learning: concepts and practice*. London: Sage.

Honebein, P. C. 1996. Seven goals for the design of constructivist learning environments. In Wilson, B. G. (ed). *Constructivist learning environments: Case studies in instructional design*. Englewood Cliffs, NJ: Educational Technology, 11-24.

Ivey, R. 2003. Information literacy: how do librarians and academics work in partnership to deliver effective learning programs?. *Australian Academic & Research Libraries*, *34* (2) 100-113.

Johnson, L., Adams Becker, S., Cummins, M., Estrada, V., Freeman, A., and Ludgate, H. 2013. *NMC Horizon Report: 2013 Higher Education Edition*. Austin, Texas: The New Media Consortium.

Joint, N. 2005. eLiteracy or information literacy: which concept should we prefer? *Library Review,* 54 (9) 505-507.

Lau, J. 2006. *Guidelines on information literacy for lifelong learning*. Final draft. The Hague: IFLA. Available: http://www.ifla.org/publications/guidelines-on-information-literacy-for-lifelong-learning [Accessed 14 October 2014]

Laurillard, D. 2002. Rethinking teaching for the knowledge society. *Educause Review,* 37 (1) 16-24.

Laurillard, D. 2006. E-learning in higher education. *Changing higher education: the development of learning and teaching*, 71-84.

Leedy, P. D. & Ormrod, J. E. 2005. *Practical research: planning and design,* 8th ed. Harlow: Pearson.

Leedy, P. D. & Ormrod, J. E. 2010. *Practical research: planning and design*, 9th ed. Harlow: Pearson.

Leung, H. K. 2003. Evaluating the effectiveness of e-learning. *Computer Science Education,* 13 (2) 123-136.

Lippincott, J. K. 2002. Developing collaborative relationships: librarians, students, and faculty creating learning communities. *College & Research Libraries News,* 63 (3) 190-192.

Lombardi, M. M. 2007. Authentic learning for the 21st century: an overview. *Educause Learning Initiative,* 1, 1-12.

MacGregor, G. & Turner, J. 2009. Revisiting e-learning effectiveness: proposing a conceptual model. *Interactive Technology and Smart Education,* 6 (3) 156-172.

Manjon, B. F. 2007. *Computers and Education: E-learning, from Theory to Practice*. Dordrecht: Springer.

Markgren, S., Eastman, C. & Bloom, L. M. 2010. Librarian as collaborator: bringing e-learning 2.0 into the classroom by way of the library. In Hao, H. & Yuen, S.C. (eds). *Handbook of research on practices and outcomes in e-learning: issues and trends.* Hershey, PA: Information Science Reference**,** 260-77.

Mason, R. & Rennie, F. 2006. *E-learning: the key concepts.* New York: Routledge.

Mayes, T., de Freitas, S. 2007. *Learning and e-learning*: the role of theory. In Beetham, H. & Sharpe, R. (eds). R*ethinking pedagogy for a digital age: designing and delivering e-learning.* New York: Routledge, 13-25.

Meredith, S. & Burkle, M. 2006. E-learning: encouraging international perspectives. a Mexican-UK comparative case study analysis. *International Journal on E-learning*, *5* (4) 469-491.

Mihhailova, G. 2006. E-learning as internationalization strategy in higher education: lecturer's and student's perspective. *Baltic Journal of Management,* 1 (3) 270-284.

Monash University. Library. 2013. *Strengthening scholarship: annual plan 2013*. Victoria: Monash University.

Monash University. Library. 2013. *Monash University Library 2013-15 e-Learning Strategy*. Victoria: Monash University.

Mouton, J. 1996. *Understanding social research.* Pretoria: Van Schaik.

Murphy, E. 1997. Constructivism: from philosophy to practice. [Report] Available: http://files.eric.ed.gov/fulltext/ED444966.pdf [Accessed 6 January 2015].

Nfila, R. B. 2008. Academic libraries support for e-learning: initiatives and opportunities-the case of University of Botswana Library. Paper presented at the Digital Scholarship Conference, CSIR Conference Centre, Pretoria, 12-14 May 2009. Available: http://www.library.up.ac.za/digi/docs/nfila_paper.pdf [Accessed 19 April 2015].

Nicholson, P. 2007. A history of e-learning: echoes of the pioneers. In Fernández-Manjón, B. and others (eds). *Computers and education: e-learning from theory to practice*. Dordrecht, The Netherlands: Springer, 1-11.

Njenga, J. K. & Fourie, L. C. H. 2010. The myths about e-learning in higher education. *British Journal of Educational Technology,* 41 (2) 199-212.

OCLC E-learning Task Force 2003. *Libraries and the enhancement of e-learning*. Dublin, Ohio: OCLC Available: http://www5.oclc.org/downloads/community/elearning.pdf [Accessed 14 October 2014].

O'Leary, Z. 2004. *The essential guide to doing research.* London: Sage.

O'Sullivan, C. 2002. Is information literacy relevant in the real world? *Reference Services Review,* 30 (1) 7-14.

Papic, A. & Stricevic, I. 2012. Integration of academic libraries' e-services into learning management system: students' perception. In Papic, A. & Stricevic, I. (eds). *Proceedings of the Management, Knowledge and Learning International Conference 2012.* Celje, Slovenia: International School for Social and Business Studies, 239-246. (Knowledge and Learning: Global Empowerment series).

Punch, K. 2006. *Developing effective research proposals*. London: Sage.

Rajasingham, L. 2007. Perspectives on 21st century e-learning in higher education. In Tomei, L. (ed). *Integrating Information and Communications Technologies into the classroom.* Hershey, PA: IGI Global.

Scott, P. 2000. Globalisation and higher education: challenges for the 21st century. *Journal of Studies in International Education,* 4 (1) 3-10.

Secker, J. 2004. E-learning and information literacy. In *Electronic Resources in the Virtual Learning Environment: a Guide for Librarians*. Oxford: Chandos, 53-74. Available: http://eprints.lse.ac.uk/4884/1/E-learning_and_information_literacy_%28LSERO%29.pdf [Accessed 24 October 2014].

Secker, J. 2005. DELIVERing library resources to the virtual learning environment. *Program: Electronic Library and Information Systems,* 39 (1) 39-49.

Sen, S. 2009. Academic libraries in e-teaching and e-learning. Paper presented at the International Conference on Academic Libraries (ICAL) 5-8 October 2009, Delhi University,

India, 176-179. Available http://crl.du.ac.in/ical09/papers/index_files/ical-29_46_135_1_LE.pdf [Accessed 20 April 2015]

Sethy, S. S. 2008. Distance education in the age of globalization: an overwhelming desire towards blended learning. *Online Submission,* 9 (3) 29-44.

Sharifabadi, S. R. 2006. How digital libraries can support e-learning. *Electronic Library,* 24 (3) 389-401.

Sharpe, R. & Benfield, G. 2005. The student experience of e-learning in higher education. *Brookes eJournal of Learning and Teaching,* 1 (3) 1-10.

Smith, L. & Yates, S. 2012. Online learning: eM-powering eFutures through developing staff capability at Monash University Library. Paper presented at *VALA2012 16th Biennial Conference*, 6-9 February, Melbourne. Available http://www.vala.org.au/direct-download/vala2012-proceedings/436-vala2012-session-13-smith-paper/file. [Accessed 19 April 2015].

Somekh, B. & Lewin, C. 2005. *Research methods in the social science*. London: Sage.

Sun, H. C., Chen, K. N., Tseng, C. & Tsai, W.H. 2011. Role changing for librarians in the new information technology era. *New Library World,* 112 (7/8) 321-333.

Sweeting, A. 1996. The globalization of learning: paradigm or paradox? *International Journal of Educational Development,* 16 (4) 379-391.

Tham, C. M. & Werner, J. M. 2005. Designing and evaluating e-learning in higher education: a review and recommendations. *Journal of Leadership & Organizational Studies,* 11 (2) 15-25.

Tucker, J. P. & Gentry, G. R. 2009. Developing an e-learning strategy in higher education. F*oresight,* 11 (2) 43-49.

Walker, A., Huddlestone, B. & Pullen, D. L. 2010. *An overview of technology in society*. Hershey, PA: IGI Global.

Wang, M. Y. & Hwang, M.J. 2004. The e-learning library: only a warehouse of learning resources? *Electronic Library,* 22 (5) 408-415.

Ward, J. 2010. Applying e-learning technologies to library information literacy Instruction. In: Donnelly, R., Harvey, J., & O'Rourke, K. (eds) *Critical design and effective tools for e-learning in higher education: theory into practice*. Hershey, PA: Information Science Reference, 693-709.

Welman, C., Kruger, F. & Mitchell, B. 2005. *Research methodology*. Cape Town: OUP.

Wooley, D. R. 1994. PLATO: The emergence of online community. *Computer-Mediated Communication Magazine,* 1, 5.

Yates, S. 2010. Adopting e-learning technologies at Monash University Library. *Incite,* 31 (1/2) 27.

Yin, R. K. 2012. *Applications of case study research*. Los Angeles: Sage.

APPENDIX A

Library as a collaborative partner in teaching and learning: the role and contribution of the Library in e-Learning at Monash University.

Dear Sir/Madam

I am a colleague at Monash South Africa Library studying towards a Master of Information Technology (MIT) degree at the Department of Information Science, University of Pretoria. I am conducting a research study on the role and contribution of Librarians and Learning Skills Advisers in e-learning at Monash University, with specific reference to the use of e-learning tools in Information Research and Learning Skills. I would appreciate it if you can give your time and participate in this research study. The results could provide insight to improving the use and efficiency of e-learning in the Library as well as for sharing best practices with staff in South Africa.

All information that you provide through your participation in this study will be kept confidential. I would also like to assure you that the questionnaires will be destroyed after the research is concluded. No names will be mentioned in the mini-dissertation, and the results of this study will be used for academic purposes.

I would appreciate it if you could complete the questionnaire fully by 5 February 2015. If you have any questions about this study, or would like additional information regarding the questionnaire or this study, please feel free to contact me at sibusisiwe.mgquba@monash.edu or my supervisor Prof Peter Underwood at pgunderwood@wol.co.za

Yours sincerely,
Sibusisiwe Mgquba

1. Please state your position title.

- Subject Librarian
- Learning Skills Adviser
- Other:

2. How long have you been working at Monash University?

- 0-4 years
- 5-9 years
- 10-14 years
- 15 or more
- Other:

3. What is your educational background? *

- Humanities
- Natural sciences
- Social sciences
- Formal sciences
- Other:

4. Which subject discipline do you work in at Monash University Library (MUL)?

- Art, Design and Architecture
- Arts

- Business and Economics
- Education
- Engineering
- Information Technology
- Law
- Medicine, Nursing and Health Sciences
- Pharmacy and Pharmaceutical Sciences
- Science
- Other:

5. In your own words, how would you define e-learning?

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6. In your opinion, what expertise do you need to create pedagogically effective e-learning content?

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…….

7. Have you ever attended an e-learning/educational/instructional design course?

- Yes

- No

If yes, please elaborate. What was the purpose and how useful did you find the course to be?

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8. Please rate your skills and knowledge in creating e-learning content.

- Basic
- Intermediate
- Advanced
- Other:

9. What platforms and tools (if any), have you used to create e-learning content at MUL?

- Captivate
- Articulate Storyline
- Adobe Presenter
- Moodle
- Other:

10. How have you used e-learning to enhance Information Research and Learning Skills?

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11. Have you created or contributed to the creation of e-learning modules/simulations or tutorials for Information Research and Learning Skills?

- Yes
- No

If yes, please elaborate. What was the purpose and what processes did you follow to create the resource/s?

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12. How did you decide on the type of content and tools to use when creating these modules/tutorials?

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13. Do you collaborate with academic staff for the purposes of embedding curricula and unit specific programs when creating e-learning modules?

- Yes
- No
- Sometimes

14. How do you promote these modules and tutorials to your students, e.g. Library website, Moodle etc.?

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15. What measures do you use to assess the effectiveness of the tutorials/modules?

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16. Have you created any Moodle units or e-learning content to be embedded into a Moodle unit(s)?

- Yes
- No

If yes, please elaborate.

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17. Have you participated in any social networking initiatives and if so which ones?

- Blogs
- Wikis
- Second Life
- Facebook
- Twitter

- Google+
- Flickr
- Other:

18. If you were a learner, which of these e-learning models would you prefer and why?

- Standalone modules/tutorials/simulations
- Online collaborative learning
- Blended learning
- Other:

Please elaborate on your preference of e-learning models and state your reasons why?

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19. As a Librarian or Learning Skills Adviser, what challenges have you encountered in creating e-learning content, specifically related to your job?

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20. What, in your opinion, are the strengths and limitations of e-learning for Information Research and Learning Skills?

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Thank you for your participation.