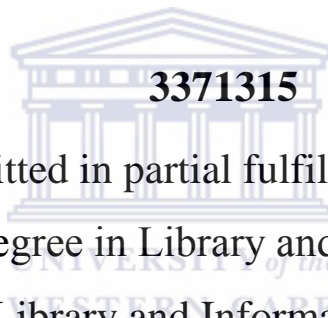


**The use of Web 2.0 technologies by Library and
Information Science students at the University of the
Western Cape in South Africa**

Colin Zinyeredzi



A mini thesis submitted in partial fulfilment of the requirements
for the Master's degree in Library and Information Studies in
the Department of Library and Information Science, University
of the Western Cape

Supervisor: Dr. Sandra Zinn

February 2016

DECLARATION

I Colin Zinyeredzi, declare that the thesis entitled: *The use of Web 2.0 technologies by Library and Information Science students at the University of the Western Cape in South Africa* is my own work and that it has not been submitted for any other degrees or assessment at any university. All the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Signature..... Colin Zinyeredzi.....

Date..... 05 February 2016.....

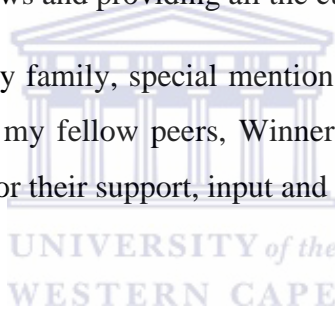


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Lastly, I am grateful to my family, special mention of my wife Talent Bonas for her words of exhortation and my fellow peers, Winner Chawinga, Anwa Adriaanse and my friend Elias Kuriyazi for their support, input and encouragement.



ABSTRACT

The purpose of this research was to investigate the use of Web 2.0 technologies by Library and Information Science (LIS) students at the University of the Western Cape (UWC). This research provided answers to the following questions:

- Which Web 2.0 technologies are used mostly by LIS students?
- What do LIS students use Web 2.0 technologies for?
- How is the LIS curriculum crafted to include training on Web 2.0 technologies?
- What benefits (gratifications) do LIS students derive from the use of Web 2.0 technologies?
- Which Web 2.0 technologies are LIS students being taught?

Blumer and Katz's (1974) Uses and Gratification Theory which explains the reasons behind people's use of Web 2.0 technologies was used to provide meaning to the research findings. A mixed methods case approach was used in this study and as a result, a questionnaire, content analysis and interviews were used to collect data. Findings of this study revealed that, between 72% and 97% of the LIS students do have accounts on the following Web 2.0 technologies: YouTube, Skype, Google Apps, WhatsApp, Twitter and Facebook. It has been highlighted in this research that LIS students use Web 2.0 technologies for both academic and general purposes. Over 80% of the LIS students use Web 2.0 technologies for entertainment, keeping up-to-date, and meeting people as well as for communication with peers and lecturers. Analysis of the LIS Department's curriculum documents, assignments as well as key informant interviews revealed that, while a module entitled "Web 2.0" does not exist, elements of Web 2.0 technologies are embedded in some of the LIS modules.

The research results also showed that, between 89.4% and 96.5% of the LIS students either agreed or strongly agreed that Web 2.0 technologies plays a significant role in improving technology proficiency, extending learning beyond the classroom, providing a platform for entertainment, facilitating collaborative learning, improving knowledge sharing and collaboration, providing cheaper and efficient communication

platforms, providing easier and faster access to information; and that a low level of complexity is needed to use Web 2.0 technologies (ease of use). Ninety five per cent of the LIS students indicated that they support the inclusion of Web 2.0 technologies in the LIS curriculum a sentiment also shared by five of the interviewed key informants. Based on the research findings the researcher has recommended that the LIS curriculum should be regularly renewed to address new trends and technologies.

Keywords: Web 2.0, Library 2.0, Librarianship, LIS curricula, LIS students, South Africa, LIS education, UWC, Library schools.



LIST OF ACRONYM

ALA	:	American Library Association
BLIS	:	Bachelor of Library and Information Science
ICT	:	Information and Communication Technology
IFLA	:	International Federation of Library Associations and Institutions
KM	:	Knowledge Management
LA	:	British Library Association
LIASA	:	Library and Information Association of South Africa
LIS	:	Library and Information Science
MLIS	:	Masters of Library and Information Science
PGDipLIS	:	Postgraduate Diploma in Library and Information Science
RSS	:	Real Simple Syndication
SALA	:	South African Library Association
SAQA	:	South African Qualifications Authority
SPSS	:	Statistical Package for the Social Sciences
UCT	:	University of Cape Town
UGT	:	Uses and Gratifications Theory
UP	:	University of Pretoria
UWC	:	University of the Western Cape

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CHAPTER 1

INTRODUCTION AND CONCEPTUAL BACKGROUND

1.1 Introduction

The purpose of this research was to investigate the use of Web 2.0 technologies by Library and Information Science (LIS) students at the University of the Western Cape (UWC). Web 2.0 as explained by Oberhelman (2007: 5), referenced by Garoufallou and Charitopoulou (2011: 491), refers generally to Web tools that, rather than serve as a forum for authorities to impart information to a passive, receptive audience, actually invite site visitors to comment, collaborate, and edit information, creating a more distributed form of authority in which the boundaries between site creator and visitor are blurred. Web 2.0 encompasses so many new technologies which can be used for a variety of undertakings, among others, social bookmarking, calendaring, collaborative authoring, video sharing, social networking, file and image sharing as well as communication and discussion forums. As new technologies emerge, there is a great need to train Library and Information Science students (LIS) in the use of Web 2.0 technologies owing to the nature of their various work environments hugely characterized by the dissemination of information. The various reasons which attract LIS students to use Web 2.0 technologies as well as their views on whether Web 2.0 technologies should be included in the LIS curriculum are the highlights of this research.

1.2. Background and Motivation

The world continues to change and flatten with the proliferation of information and technology access and integration. Significant questions are being raised in LIS programmes about the optimal focus to take in preparing students for such a rapidly changing future (Chow, Shaw, Gwynn, Martensen, & Howard 2011: 2). Chu (2006: 328), concluded that it is inarguable that development in our society, technological or otherwise has brought significant changes to LIS education all over the world. The

LIS curricula mirror the skills and knowledge of the library and information professionals in the workplace. This research investigated the use of Web 2.0 technologies by LIS students because as future information professionals, they are expected to have full knowledge of using technological devices and applications owing to the nature of their job. The above notion is also supported by Bawden, Robinson, Anderson, Bates, Rutkauskiene and Vilar (2007: 16), who emphasised that LIS students as future information professionals need to be aware of the issues and innovations around Web 2.0 tools, be they technical or otherwise and they need to know more about them than an average student so as to be able to cope in tomorrow's information world.

It is widely recognised that in the unfolding knowledge society, information and knowledge are at the heart of development and economic growth and that the flow of information is critical for innovation, invention and the process of creating new knowledge and ideas (University of Cape Town, 2013). Library and Information Science (LIS) education, through teaching, continuing education and research programmes, is of paramount importance in providing LIS students with the requisite knowledge and skills to achieve the goals of the LIS sector in an evolving and technologically oriented knowledge society.

Hysa and Juznic (2013: 2) are of the opinion that librarians as information professionals in libraries need to update their knowledge, competencies and skills. These attributes are the key factors in enabling the library to perform its role. The shift from a traditional library environment to a digital one has forced LIS education to change their programmes and curricula to provide adequate content and practice that will enable the librarians to match or fulfil the needs of the 21st century patrons. According to Chu (2006: 328), LIS curricula have been a subject of research over the years, especially when quite a few indicators (e.g., the advent of computers and the emergence of the Internet) show that our field is at the centre of an information society and plays a crucial role in the digital age. According to Bawden et al. (2007:

16), LIS curricula around the world are rapidly changing owing to recognition of the importance of Web 2.0; in terms of three main facets in teaching and learning activities namely:

- ❖ Technological developments
- ❖ Social use/impacts
- ❖ Implications for the field and the profession

Apart from market demand, LIS curricula around the world are influenced by internationally recognised library associations, for example, the American Library Association (ALA, 2013), the International Federation of Library Associations and Institutions (IFLA), the British Library Association (LA) and the Library and Information Association of South Africa (LIASA).

1.3 Library and Information Science schools in South Africa

According to Musiker (1986: 91), referenced by Raju (2005: 1), LIS education and training in South Africa had its beginnings in 1933 when the professional body, the South African Library Association (SALA) as it was known, introduced correspondence courses for the training of librarians. According to Ocholla and Bothma (2007: 150), unlike other African countries whose LIS education and training began in 1960, South Africa has a LIS history dating back to 1938. They went on to explain that, in that year, the first education and training programme of librarians began at the University of Pretoria (UP) in 1938, followed by UCT in 1939, and the University of South Africa in 1955. At present, as noted by Ocholla and Bothma (2007: 150) ten LIS departments located within academic universities and universities of technology are operational at the Universities of Cape Town, Pretoria, Western Cape, Zululand, KwaZulu-Natal, Walter Sisulu, Fort Hare, Limpopo, South Africa and the Durban University of Technology. This research is, however, limited to the University of the Western Cape's LIS department only.

The Department of Library and Information Science, UWC, like its parent institution is alert to its African and international context as it strives to be a place of quality, a place to grow from hope to agency through knowledge. Its mission is to contribute significantly towards the development of an information literate South African society. In order to redress the inequalities, the Department lays great emphasis on helping individuals from the educationally and economically disadvantaged communities to acquire professional education and training in LIS. UWC's LIS department aims to help conserve and explore the environmental and cultural resources of the Southern African region, and to encourage a wide awareness of them in the community by making its graduates and diplomats not only literate in the printed and electronic sources of information but also in the vast wealth of information in the oral traditions (University of the Western Cape 2013).

UWC's LIS department offers a four year Bachelor of Library and Information Studies (BLIS) degree, Master's (MLIS), PhD and a Postgraduate Diploma in Library and Information Studies (PGDipLIS). UWC's new structured MLIS is designed for LIS professionals who wish to advance their careers and/or broaden their horizons beyond their library walls. It comprises four modules and a mini-dissertation. The new MLIS curriculum has been tailor made to meet the demands of the market with particular emphasis on Information and Communication Technology (ICTs) and knowledge management. UWC has a niche in public librarianship and school librarianship although it also educates academic librarians (University of the Western Cape, Department of Library and Information Science 2015).

1.4. Conceptual analysis and theoretical background

Web 2.0 encompasses a variety of different meanings that include an increased emphasis on user generated content, data, content sharing and collaborative effort together with the use of various kinds of social software and new ways of interacting with Web-based applications (Harris & Rea, 2010: 137). Most of the emerging Web 2.0 services are relatively easy to use and together constitute the only media that can

simultaneously provide the potential for one-to-many and many-to-many synchronous communications. With the sheer number of media choices available to individuals today, it is important to ascertain the appeal of certain media and why a consumer chooses one medium and disregards the others. This can be easily understood when examined through the lenses of a theoretical framework. One theory that emerged in 1974 from Jay Blumer and Elihu Katz examines media consumption by how it is consumed and what benefits it creates for the consumer. This framework which has come to be known as the Uses and Gratifications Theory (UGT) has been repeatedly tested and improved over the years. According to Blumer and Katz (1974: 76), in its original format, the theory consisted of five key elements namely:

- The audience is assumed to be an active user of mass media;
- Each audience member must discern which medium will best gratify his or her needs for a given use;
- Media outlets compete with other sources of gratification, and cannot satisfy all human needs;
- Empirical data assessment can help determine the goals of mass media consumers since users are self-aware enough to accurately describe their motives; and
- Judgements about the cultural relevance of mass media must be withheld in order to avoid speculation on popular culture.

Uses and Gratifications Theory (UGT) is applied to understand media usage. It is concerned with how and why people turn to the media they do. Eighmey and McCord (1998) found in their study of uses and gratifications in relation to the Internet that factors associated with entertainment, personal relevance, ease of use and information seeking were reported most often. The diagram below, Figure 1, by Huang (2008) articulates the reasons behind people's use of user-generated media.

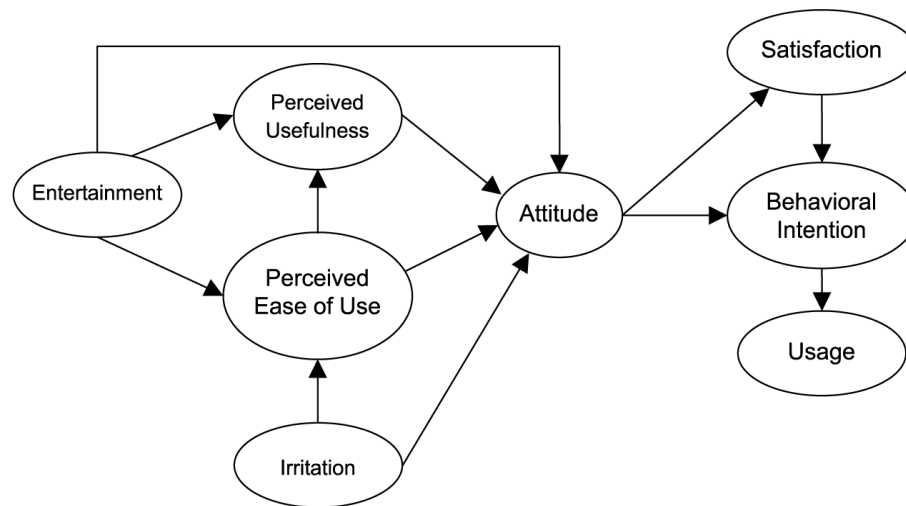


Figure 1: Uses and Gratifications Theory

Uses in this theory can be defined as how people choose and interact with media. Gratifications can be defined as the reasons behind users choosing a particular media and the benefits they derive from the chosen medium. McQuail (1983) referenced by Shao (2009: 9) summarised common reasons for media consumption: “information seeking, pass time, relaxation, communication utility, integration and social interaction as well as entertainment”. It is against this background that the researcher will ascertain if LIS students use Web 2.0 technologies for the above mentioned reasons.

1.4.1 Consumption for information and entertainment

As with traditional media and entertainment, individuals can go to user-generated sites to consume such content as video clips, blogs, pictures and music. The question is why do individuals choose to consume user-generated content and what gratifications do they expect to gain from such consumption. According to Shao (2009: 9) previous UGT research on traditional and new media has revealed two typical motives for media consumption, namely, information seeking and entertainment. This can help to understand people’s media consumption of user-generated media. More importantly, this will help to explain why LIS students use Web 2.0 technologies which are entirely user-generated sites.

Information seeking is driven by people's desire to increase awareness and knowledge of one's self, others and the world. For example, people often visit Wikipedia to obtain some information about subjects that interest them. Shao (2009: 10) points out that people increasingly make use of Facebook, YouTube, and other social media to "learn how to make sense of things from their peers on just about any subject". Compared with information seeking, entertainment may be more important in triggering media use. According to Ruggiero (2000: 35), for most people entertainment and mass media are nearly synonymous. For example, on YouTube, the majority of the most popular channels come from the entertainment-related categories such as sports, music, comedy, film and animation (YouTube Data, 2007). It is important to understand what triggers LIS students to use user-generated media, whether it is information seeking or entertainment as seen through the lenses of UGT. Just as in consuming traditional media such as television and magazines, Shao (2009: 11) notes that, people may use user-generated media for such entertainment ends as escaping from problems, relaxing, deriving aesthetic enjoyment, filling time, seeking emotional release and sexual arousal. There is a great need to ascertain if LIS students use Web 2.0 technologies for the above mentioned reasons.

1.4.2 Participating for social interaction

In addition to consuming content, people may participate through interacting with the content as well as with other users on user-generated sites. According to Shao (2009: 12), user-to-content interaction occurs when people rate the content, save to their favourites, share with others, post comments, and so on. On the other hand, user-to-user interaction occurs when people interact with each other through email, instant messages for example on WhatsApp, chat rooms, message boards, and other Internet avenues. The Internet has become a prime venue for social interaction since its inception. Ruggiero (2000: 29) explains that major Internet websites such as Gmail and Yahoo provide a number of electronic avenues (e.g. e-mail, chat, and message boards) through which people can communicate with others, and share their interests and values. The birth of user-generated sites has accelerated this trend, as shown in

LinkedIn, Facebook, and many other social sites which are rooted in meeting people's social interaction needs. Beyond social interaction, people may also contribute to the formation and maintenance of virtual communities on user-generated sites. This research provides answers to whether LIS students use Web 2.0 technologies for interaction.

1.4.3 Greater Usability, greater gratifications

One important feature is that user-generated media are easy to use (Shao 2009: 16). No matter what people do, such as consuming, participating, or producing, they can do it easily. For example, on YouTube, if people want to upload their videos they simply need to take a few steps and uploading can be finished within a few minutes depending on the internet speed. "Easy to use" enables users to input very little, but the output for users may come in abundance. According to Shao (2009: 17), YouTube is highly successful because it provides its users with a very efficient Internet experience. In other words, it asks very little of its users but in return gratify them a great deal. Such gratification experience is consistent with Wolf's (1999) referenced by Shao (2009: 17) observation that nowadays people have limited time so that if they invest time in entertainment, they tend to demand more intense, more concentrated, and more satisfying returns. In addition to "ease of use", user-generated media allows users to be in control. Users control what they want, when they want it and where they want it. In other words, users are not constrained by the computer systems. As explained by Ruggiero (2000: 28), in cases of user-generated sites, the ability of control can be considered an important factor that enhances people's gratifications.

Modern communication scholars, such as Ruggiero, highlight the necessity of the Uses and Gratifications Theory in understanding the proliferation and success of computer-mediated communication forms. Ruggiero (2000: 29-33) mentions that UGT provides a cutting-edge theoretical approach in the initial stages of each new mass communication medium: newspapers, radio and television, and now the

Internet. The primary question to ask is, do LIS students use Web 2.0 technologies for information seeking, to pass time, for relaxation, as a communication utility, for integration and social interaction or as a source of entertainment. This can only be better understood when looked at through the lenses of the UGT.

1.5 Definition of key terms

Web 2.0

It is a term coined to describe a variety of websites and applications that allow anyone to create and share online information or material they have created, for example, Facebook, GoogleApps, Wikis and so on.

Library 2.0

Library 2.0 simply means making the library space (virtual and physical) more interactive, collaborative, and driven by community needs.

Librarianship

It is a profession generally considered to be concerned with the principles and practice of selecting, acquiring, organizing, disseminating and providing access to information in accordance with specific needs of groups of people or an individual.

LIS curricula

A list of courses or modules offered in a programme, but it also provides information on content, purpose, method and time/duration.

LIS students

This refers to learners who elect to enrol for Library and Information Science training at various library schools.

LIS education

This refers to the formal training given to students who choose a career in Library and Information Science.

LIS schools

It refers to the academic departments offering formal training whether undergraduate or postgraduate qualifications in Library and Information Science.

1.6 Research problem and questions

This study investigated the use of Web 2.0 technologies by LIS students at the UWC. According to Katz et al. (1974) referenced by Shao (2009: 9) the Uses and Gratifications Theory (UGT) assumes that audiences consciously choose the medium that could fulfil their needs and that they are able to recognise their reasons for making media choices. Results from existing UGT research as explained by Stafford and Schkade (2004: 267) suggest that people use media either for content carried by the medium (e.g. information or entertainment), or for the simple experience of the media usage process (e.g. playing with the technology). The UGT thus provides a broader understanding of the uses and gratifications LIS students derive from the use of Web 2.0 technologies.

The problem and the literature review have led to the following research questions:

- Which Web 2.0 technologies are used mostly by LIS students?
- What do LIS students use Web 2.0 technologies for?
- How is the LIS curriculum crafted to include training on Web 2.0 technologies?
- What benefits (gratifications) do LIS students derive from the use of Web 2.0 technologies?
- Which Web 2.0 technologies are LIS students being taught?

1.7 Ethics statement

For every research, there are ethical issues that need to be taken into consideration. The researcher adhered to the guidelines of the Research Committee of UWC at all times. He respected the rights of participants and also obtained informed consent from his research participants based on adequate information on the study.

Anonymity and confidentiality were guaranteed. Participation in this research project was voluntary hence participants were allowed to withdraw at any stage of the research process. Interviewees were also informed about the use of recorders during interviews. A consent letter is attached as Appendix A.

1.8 Outline of chapters

Chapter one introduced the research topic and explained the rationale behind the study. It provided background description and stated the ethical principles of the study. Chapter two highlights and analyses existing research on LIS education and training in South Africa and around the world with regards to embedding Web 2.0 in the LIS curricula and the actual use of Web 2.0 technologies by students. Chapter three describes the research design and research methodology. It sheds more light on the mixed methods case study. Chapter four presents, analyses, and summarizes the data collected by the online questionnaire. Chapter five presents and analyses data gathered from the content analysis of the LIS department's website and curriculum documents as well as data gathered from key informant interviews. Lastly, Chapter six provides a discussion of the research findings. This is achieved by triangulating results from the questionnaire, key informant interviews and content analysis. Chapter six also provides a conclusion and recommendations.

1.9 Conclusion

This chapter introduced the topic of the study within its context, as well as the main research questions. It also provided a background to the study, and looked at the scope of the study, its benefits and limitations, as well as presenting an outline of the chapters contained in the study. The literature on Web 2.0 technologies and LIS curricula in South Africa is reviewed in the next chapter.



CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Chapter one gave a brief introduction to the research problem as well as the underlying theoretical framework which underpins this study. All research whether basic or applied builds on previous research. This current chapter provides an overview of Web 2.0 technologies which includes but is not limited to social networking, video sharing, file sharing, communication tools, collaborative authoring, and social bookmarking. In a bid to understand the use of Web 2.0 technologies by LIS students, a closer look at LIS education, training and curricula is imperative.

2.2 Web 2.0 technologies

Our information environment is constantly changing. How we access, use and benefit from information, in an increasingly hyper-connected world, becomes a concern. The first generation of Web technologies, known as the read-only Web, appeared as a platform for one way communication between information publishers and information consumers (Sarrafzadeh, Hazeri & Alavi, 2011: 178). From the mid-1990s to the early 2000s, the Internet remained fairly one way with primary offerings including informational and transactional, for example, online shopping and reading news articles, among others. Web 1.0 refers to the first stage in the World Wide Web, which was entirely made up of Web pages connected by hyperlinks. It is a term that also describes the Web when it was a set of static Websites that were not providing interactive content. Mishra (2009) points out that the second generation of the Internet came about in the early 2000s and was called Web 2.0 or the Social Web. Web 2.0, also known as the read-write Web, was developed to provide the possibility of customers' contribution to the creation of Web content (Maloney, 2007: 39).

According to Murugesan (2007: 34), Web 2.0 is also called the wisdom Web, people-centric Web, participative Web, and read/write Web. Web 2.0 harnesses the Web in a more interactive and collaborative manner, emphasizing peer social interaction and collective intelligence, and presents new opportunities for leveraging the Web and engaging its users more effectively. Today's Web users are prolific creators of content, and they upload photographs, audio, and video to the cloud by the billions (NMC Horizon Report, 2014: 8). It becomes safe to conclude that Web 2.0 is the term used to describe a variety of Web sites and applications that allow anyone to create and share online information or material they have created. A key element of the technology is that it allows people to create, share, collaborate and communicate. The above notion was also echoed by Virkus (2008: 263) when he noted that, Web 2.0 tools and services foster new modes of connectivity, communication, collaboration, sharing of information, content development and social organisation.

Web 2.0 technologies and applications have in recent years taken the Web by storm. Web 2.0 and social networks as explained by Garoufallou and Charitopoulou (2011: 490) are so dominant that they now inspire the everyday personal and professional life of millions of users. Web 2.0 generally refers to a perceived second generation of Web-based applications and services and in particular the use of the Web as a platform for user-generated content and Web-based communities, particularly social networking, wikis and folksonomies (O'Reilly, 2005). Social networking sites for example, Facebook, focus on connecting people together. Solomon and Schrum (2009: 52) pointed out that, Web 2.0 is organised differently, it uses words that the authors select and attach to content. These are called folksonomies, which are keywords or "tags" that convey meaning about content. People often adopt terms that others have used to describe similar content, and sites, such as the bookmarking site Delicious, suggest tags to use that are based on what others have identified. According to Anderson (2007) cited by Garoufallou and Charitopoulou (2012: 204), Web 2.0 refers to a group of technologies such as blogs, wikis, RSS, podcasts, and so

on, where users are able to add, share and edit the content, creating a socially networked Web environment.

Oberhelman (2007) cited by Virkus (2008: 262) noted that Web 2.0 refers generally to Web tools that, rather than serve as a forum for authorities to impart information to a passive, receptive audience, actually invite site visitors to comment, collaborate, and edit information. Thus Web 2.0 creates a more distributed form of authority in which the boundaries between site creator and visitor are blurred. In other words, Web 2.0 also refers to a change in the way the Internet is used which facilitates its innovative, collaborative nature. It is all about the users and their contributions to the richness of online content. The Internet, as noted by Garoufallou and Charitopoulou (2011: 491), has become a platform for user participation and interaction, promoting a more active use and the development of digital communities. New technologies, as explained by the IFLA Trend Report (2013), will both expand and limit who has access to information. An ever-expanding digital universe will bring a higher value to information literacy skills such as basic reading and competence with digital tools. People who lack these skills will face barriers to inclusion in a growing range of areas.

The effects of Web 2.0 technologies, as explained by Hicks and Graber (2010), are far-reaching. It connects users to the new information realities. It also allows people to make sense of the thousands of gigabytes of information that are produced every day, making information relevant and meaningful in the world where the dynamics of knowledge have changed. Web 2.0 is therefore not solely a technology but offers many more possibilities. According to Murugesan (2007: 34), Web 2.0 is not just a new version of the same old Web; it is different from Web 1.0 in several ways. For example, Web 2.0:

- facilitates Web design, creative reuse, and updates
- provides a rich, responsive user interface;
- facilitates collaborative content creation and modification;

- enables the creation of new applications by reusing and combining different applications on the Web or by combining data and information from different sources;
- establishes social networks of people with common interests; and
- supports collaboration and helps gather collective intelligence.

There are various categories of Web 2.0 technologies, for example; social bookmarking, calendaring, collaborative authoring, video sharing, social networking, file sharing and communication tools (Sawant, 2012: 13).

2.2.1 Social bookmarking

In a social bookmarking system, users store lists of Internet resources that they find useful (Mason & Rennie, 2008: 80). These lists are accessible either to the public or to a specific group, and other people with similar interests can view the links by category, tags, or even randomly. Tags, as explained by Mason and Rennie (2008: 81), are one-word descriptors that one can assign to a bookmark. One can assign as many tags to a bookmark as one likes and can easily rename or delete them without an obstacle. StumbleUpon, Delicious and CiteULike are examples of social bookmarks.

2.2.2 Calendaring

Strategic planning is a key function in any organization. The Google calendar plays a pivotal role in as far as planning is concerned because important dates, venues and events can be created on a calendar and can be shared with everyone involved. According to Covili (2012: 25), Google has developed a calendar tool that is easy to use. It does not require any knowledge of Web design hence there are no special programmes needed. The calendar is dynamic and can be updated instantly.

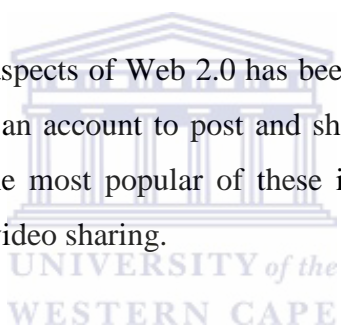
2.2.3 Collaborative authoring

One of the biggest affordances brought about by the social Web is the ability for collaboration regardless of geographical location of participants. According to

Richardson (2010: 23), although collaborative learning has been a buzzword in American education for some time, the read/write Web opened up all sorts of new possibilities for students to learn from each other or from authors and other professionals who can now work side by side in digital space even though they may be far away from one another physically. According to the IFLA Trend Report (2013), hyper-connected societies will listen to and empower new voices and groups. More opportunities for collective action are realised in hyper-connected societies-enabling the rise of new voices and sharing of ideas. Hyper-connected societies can also collaborate on particular projects. Wikis and Google docs are examples of platforms that allow collaborative authoring.

2.2.4 Video sharing

One of the most popular aspects of Web 2.0 has been the rise of video-sharing sites, which allow anyone with an account to post and share digitized videos of any kind (Theimer, 2010: 101). The most popular of these is YouTube, which has become almost synonymous with video sharing.



2.2.5 Social networking

A social network service according to Theimer (2010: 159), focuses on building online communities of people who share interests and/or activities, or who are interested in exploring the interests and activities of others. Most social network services as further explained by Theimer (2010: 159), are Web based and provide a variety of ways for users to interact, such as e-mail and instant messaging services. According to the NMC Horizon Report (2014: 8), social media is changing the way people interact, present ideas and information, and judge the quality of content and contributions. More than 1.2 billion people use Facebook regularly according to numbers released in October 2013; a recent report by Business Insider reported 2.7 billion people — almost 40% of the world population— regularly use social media. Sites such as Facebook, Twitter, Pinterest, Flickr, YouTube, Tumblr, Instagram, and many others make it easy to share and find stories and media. In addition to

interacting with the content, social media makes it easy to interact with friends and institutions that produce the content. Relationships are ultimately the lifeblood of social media as people share information about themselves, find out what their peers and favourite organizations think about topics of interest, and exchange messages (NMC Horizon Report, 2014: 8).

2.2.6 File and image sharing

Sharing resources online has been made easy with the birth of Web 2.0 technologies. Google Docs, according to Covili (2012: 14), allow students and teachers to create and upload documents as well as sharing them with others. Students are no longer bound by geographical location when working on a project. Napster and 4shared are platforms that can also be used for file sharing among others. Flickr and Webshots are examples of tools that can be used for sharing images.

2.2.7 Communication and discussion forums

Organizations can make use of Web 2.0 technologies for communication. Skype, Viber and G-talk are all examples of tools that can be used for communication. According to Covili (2012), blogs can be used for discussions, for example, personal or educational blogs.

2.3 Web 2.0 technologies for Library and Information Science education

As the librarian's profession evolves to meet the needs of its era, using Web 2.0 technologies have become an indispensable tool in the work of the professional. There is no doubt that Web 2.0 technologies have changed and transformed access to information and communication. According to Al-Daihani (2009: 39), Web 2.0 technologies provide user-created content platform applications allowing users to contribute their knowledge in different formats like text, data, video and audio. The creation of the term "Web 2.0" generated other related terms, such as Library 2.0, and Learning 2.0 (Garoufallou & Charitopoulou, 2011: 492). These terms reflect the implementation of Web 2.0 technologies in different domains (Sawant, 2012: 11; AI-

Daihani, 2009: 39). In other words, the term Library 2.0 generally refers to the introduction of Web 2.0 technology tools in library services.

Libraries can use Web 2.0 technologies for information dissemination and to enhance their services. The development of Web 2.0 technologies has presented new opportunities and challenges to education and educational systems of different disciplines including Library and Information Science (Garoufallou & Charitopoulou, 2011: 491; Sarrafzadeh, Hazeri & Alavi, 2011: 179 and Al-Daihani, 2009: 40). Many higher education institutions have a history of using ICTs in teaching and learning. For educational institutions, according to the NMC Horizon Report (2014: 8), social media enables two way dialogues between students, prospective students, educators, and the institution that are less formal than with other media. As social networks continue to flourish, educators are using them as professional communities of practice, as learning communities, and as a platform to share interesting stories about topics students are studying in class. Understanding how social media can be leveraged for social learning is a key skill for teachers, and teacher training programmes are increasingly being expected to include this skill. It is however important to note that technology alone does not mean success in any context. Virkus (2008: 272); makes it clear that technology only becomes valuable in education if learners and teachers can do something useful with it.

According to Sarrafzadeh, Hazeri and Alavi (2011: 178), the need for LIS students to familiarise themselves with Web 2.0 technologies has been reinforced in recent years. Preparing LIS graduates for the emerging Library 2.0 environment, reaping the educational benefits that Web 2.0 tools offer and meeting the needs of the so-called net generation are some reasons for supporting the idea of using Web 2.0 technologies in LIS education and incorporating its related themes into the LIS curriculum. According to Al-Daihani (2009: 42), the increasing use of Web 2.0 technologies in the field of LIS makes it incumbent upon the educational programmes to respond to the challenges and demands of this technology. Ways of integrating

Web 2.0 technologies into LIS education have been proposed in the literature but there remains the question of whether LIS academics themselves have acquired Web 2.0 technology knowledge and skills, and whether their work environment is ready for employing these technologies. However, the integration of Web 2.0 tools has to proceed alongside a re-examination of the library's role in different learning communities, which are undergoing a dramatic shift in how they create knowledge and use information (Hicks & Graber, 2010).

According to Al-Daihani (2009: 40), Web 2.0 technologies have posed social and academic challenges for LIS schools and educators since its inception because the information market is demanding new competencies and skills from LIS graduates. Libraries, as explained by Al-Daihani (2009: 40), also expect professionals on their workforce to be equipped with appropriate competencies in the use of Web 2.0 technologies. This means that students enrolled for LIS programmes need to have a fresh orientation directed towards developing Web 2.0 technology skills and LIS educators need to introduce changes in the content and substance of the curriculum.

Virkus (2008: 272) pointed out that the use of Web 2.0 technologies is more beneficial for LIS education than any other discipline because LIS students will utilise Web 2.0 tools in their day to day work. For LIS trainees and professionals, as explained by Virkus (2008: 270), Web 2.0 is not only about technology, it also means significant attitudinal shifts in the profession. Today's society is built on a digital environment of work, hence it is imperative for LIS students to be trained in the use of Web 2.0 technologies as this will better place them to meet the challenges of the work environment. Web 2.0 technologies have been adopted by librarians to facilitate access to information, to help information transfer and to promote knowledge sharing among library staff and clients. According to Patridge, Lee and Munro (2010) cited by Sarrafzadeh, Hazeri and Alavi (2011: 179), with the influence of Web 2.0 technologies on all aspects of librarians' professional life, new roles have been considered for librarians that are reflected in the studies of new market demands.

The need for a holistic approach to embed Web 2.0 applications in LIS education is emphasised in the literature. Issues around Web 2.0 technologies as explained by Sarrafzadeh, Hazeri and Alavi (2011: 179), are not only required to be an integral part of the LIS curriculum but should also be applied in the structure of the educational context to support both LIS teaching and learning. As a result, it is imperative for the LIS education system to foster the actual engagement of learners with the new environment in the learning process. The integration of Web 2.0 technologies with LIS teaching and learning environments also offers a great chance for LIS students to be prepared for lifelong learning (Sarrafzadeh, Hazeri & Alavi, 2011: 180).

According to Godwin and Parker (2008:47), it cannot be assumed that LIS students will just ‘pick up’ skills in making videos, managing blogs, convening meetings in a virtual world, or embedding current awareness applications in Facebook. Using blended learning techniques and facilitating learning between peers are obviously in the spirit of Web 2.0 technologies, but need careful planning and facilitation. Beyond that, the way in which LIS students’ Web 2.0 technology skills are developed will depend on the structure and specific focus of a particular LIS course; For example, in a knowledge management module it is possible to embedded Web 2.0 technologies in activities dealing with, “communities of practice, knowledge sharing and knowledge elicitation” (Godwin & Parker, 2008: 47). In courses where library management and marketing are core elements, different tools might be used (for example) to compile a wiki on management practices observed in library visits, or create a Facebook or Second Life presence for the library, or produce a video about customers’ perceptions of service delivery.

Virkus (2008: 271) pointed out that LIS is about information and/or knowledge creation, and by using Web 2.0 technologies, LIS students practise collaborative knowledge building. LIS is a multidisciplinary field and there is no doubt that its education can be richer with the collaboration of people from different disciplines.

This might happen more easily by using Web 2.0 technologies. While the above issues strongly suggest the necessity of changes both in the educational methods and content of LIS curricula, evidence shows that schools and educators have been slow in responding to the needs of Web 2.0 education (Aharony, 2008; Virkus, 2008: 272).

Web 2.0 technologies have been used for teaching and online learning including:

- Reading Weblogs of LIS professionals
- Using RSS-based services to obtain filtered information
- Integrating audio and video podcasts on certain topics, and
- Assignments including aspects of Second Life (Virkus, 2008: 270).

2.4 Library and Information Science (LIS) education and curricula around the world

The information world in which LIS students study and are being educated is in a state of constant change (Aharony, 2009: 227). Library and Information Science, according to Tumuhairwe (2013: 2), is dedicated to understanding the nature of information, the interaction between information and communication technologies. It is also dedicated to understanding the relationship between information and knowledge, the cognitive and affective aspects of knowledge acquisition, and the interface between people and information. LIS education, according to Combes, Hanisch, Carroll, Hughes, & Millington (2011: 1), faces considerable opportunities and challenges in the 21st century. LIS schools must produce information professionals who are better placed to respond flexibly to rapidly evolving social, economic and technological change (Combes et al., 2011: 1).

Wolske (2013) is of the opinion that LIS education is faced with an array of issues, among others, preparing LIS students for new roles in a rapidly changing job market; increasing student-centred educational opportunities through well-crafted service learning; developing concepts surrounding information technology that not only help students to understand today's technology but to be able to assess, adapt, and utilize whatever emerges tomorrow; and adapting curricula to reflect the more diverse

populations served by libraries. The academic curriculum has been a matter of interest worldwide, as library schools have embraced information studies and have sought to determine the appropriate changes useful to the profession (Nagatsuka, Tsunoda & Harada, 2013).

The changing patterns of socio-economic interaction in society, as noted by Minishi-Majanja (2009: 1), often mean that professions need to re-examine their premise and re-align themselves with current trends and perspectives. Regardless of focus or alignment, the acquisition of skills most valued by employers continues to be of paramount importance to most students enrolled for LIS programmes (Chow et al., 2011: 2). It is Minishi-Majanja's (2009) view that the education and training of LIS professionals has to be such that it empowers them to unleash their potential as they endeavour to offer relevant and efficient services within the current levels of technological sophistication. A curriculum, as noted by Ocholla (2000), is a fundamental part of any education or training programme largely because it provides not only a list of courses or modules offered in a programme, but it also gives information on content, purpose, method, time/duration, trainers and location or situation of a programme or course all of which are essential in a successful dispensation of manpower training and education. Curriculum and methods of LIS education evolve to meet new expectations.

According to Chow et al. (2011: 2), the world continues to flatten with the proliferation of information and technology access and integration. Significant questions are being raised in LIS programmes, as explained by Chow et al. (2011: 2) about optimal focus to take in preparing students for such a rapidly changing future. According to Okello-Obura and Kigongo-Bukenya (2011: 2), the issue of what constitutes or should constitute the "core" in LIS education and training is one that is frequently debated in different circles by LIS professionals. It is Aharony's (2008) view that expanding the curriculum and integrating a course which focuses on Web 2.0 technologies may improve the image of LIS, and more importantly, may enable

learners to acquire a broader perspective in their attitude towards information studies, and to cope with rapid changes in the information landscape. IFLA is the leading international body representing the interests of library and information services and their users (IFLA, 2014). It is the global voice of the library and information profession and, as a result, many LIS schools adhere to their guidelines in as far as the curriculum is concerned.

IFLA (2012: 4-5) outlined the core elements of the LIS curriculum thus:

- The Information Environment, Societal impacts of the information society, Information Policy and Ethics, the History of the field.
- Information Generation, Communication and Use.
- Assessing Information Needs and Designing Responsive Services.
- The Information Transfer Process.
- Information Resources Management to include Organization, Processing, Retrieval, Preservation and Conservation of Information in its various presentations and formats.
- Research, Analysis and Interpretation of Information.
- Applications of Information and Communication Technologies to all facets of Library and Information Products and Services.
- Knowledge Management
- Management of Information Agencies.
- Quantitative and Qualitative Evaluation of Outcomes of Information and Library Use.
- Awareness of Indigenous Knowledge Paradigms.

According to the ALA (2013: 10-11), the curriculum is concerned with recorded information and knowledge, and the services and technologies to facilitate their management. The curriculum of Library and Information Studies, as further explained by ALA (2013: 10-11), encompasses issues around information and

knowledge creation, communication, identification, selection, acquisition, organization and description, storage and retrieval, preservation, analysis, interpretation, evaluation, synthesis, dissemination, and management. The LIS curriculum according to ALA (2013: 10-11):

- fosters development of library and information professionals who will assume an assertive role in providing services;
- emphasizes an evolving body of knowledge that reflects the findings of basic and applied research from relevant fields;
- Integrates the theory, application, and use of technology;
- Responds to the needs of a rapidly changing technological and global society;
- Provides direction for future development of the field; and
- Promotes commitment to continuous professional growth.

Curriculum content according to Tumuhairwe (2013: 1), is the core of the reform, and in many instances LIS schools and departments revise or re-design their curricula in such a way that some traditional courses disappear as new ones come in to cater for the emerging issues and trends. In most cases, LIS education has been re-conceptualised and repositioned to supply graduates with the appropriate attributes to develop and maintain high quality professional practice in the rapidly changing 21st century. Bawden et al. (2007: 18), compared LIS curricula in five countries: Australia, Ireland, Lithuania, Slovenia and the United Kingdom (UK). They reported changes in the curriculum content as well as methods of teaching and learning. Their thematic analysis showed an increasing proportion of e-content and the impact of the communication and social networking features of Web 2.0 and Library 2.0 technologies.

Aharony (2009: 227-242); investigated the use and implementation of Web 2.0 in the United States' accredited LIS schools and concluded that only a few schools taught and use Web 2.0 in their curriculum. Aharony (2009: 239), investigated 160 Israeli LIS students and found that there is a moderate tendency to use Web 2.0 technologies

and that the students' personality characteristics and learning facilitators influenced Israeli students' perceptions of the use of Web 2.0. It is worth noting that it is too early to draw conclusions about the impact of Web 2.0 and social media on teaching and learning in LIS, however, there are many benefits for LIS trainees to master and comprehend the use Web 2.0 technologies in a bid to meet the challenges of the work environment.

Raju (2003), cited by Minish-Majanja (2009: 7), observed that the core of LIS education is elusive because of the continuous evolution of the profession. Library and Information Science education and training in Africa, which bears the weight of providing qualified staff to the library and information profession, is currently challenged to ensure that graduates have competencies that align the profession with current trends and perspectives (Minish-Majanja, 2009: 2). It is Minish-Majanja's (2009: 2) view that many LIS educators acknowledge that it is their responsibility to steer the profession towards new directions in response to the globally and locally changing information environment while simultaneously maintaining relevance. It is imperative that the type and quality of LIS education graduates should both reflect and be a reflection of the types of services provided in libraries and other information centres.

Jain, Harvinder and Babbar (2011: 3) pointed out that, with the growth of ICTs, "LIS schools around the world have understood the need for periodic examination and analysis leading to necessary changes and improvements in curricula, for the interpolation of new and fast developing areas of information technology and computer science". Most of the LIS schools and departments, according to Jain, Harvinder and Babbar (2011), have revised or are in the process of re-designing their curricula. In most LIS curricula, courses relating to traditional library science with names such as, "History of books" have vanished. Instead, many computer-related courses were introduced. Examples of some the topics included are:

- An introduction to Computers

- Programming Design
- Database Management
- Computerised Information Networks
- Design and Analysis of Computer Application Systems
- Computerised Information Retrieval
- Information Communication Technology (ICT)

According to Bawden et al. (2007: 17-18), of the modules offered by the University College Dublin School of Information and Library Studies, three in particular include aspects of Web 2.0 technologies in their curriculum. Of these, two are offered at level three (and taken by mainly students in the third and final year of a primary degree, and also by a small number of postgraduate students in the Graduate Diploma and Masters in LIS). The two level 3 modules, as explained by Bawden et al. (2007: 17-18), IS30070: Weaving the Web: The Internet and Society, and IS30070: Cyber-society Technology, Culture, and Communication, examine current developments in Web 2.0 technologies and students taking these modules develop an understanding of the transition from the Web 1.0 to Web 2.0. Weaving the Web focuses more on the technological changes that are enabling greater interconnectivity, and the Cyber-society module is more concerned with the social impact of online communities and use of social technologies.

In the level four module IS40080: Information and Society, the emphasis is more towards Web 2.0 from the perspective of library and information professionals (Bawden et al., 2007: 18). The impact of Web 2.0 technologies on information provision is examined in a critical way hence students are encouraged to explore and debate the implications of Web 2.0 technologies in relation to library and information work. At City University London as noted by Bawden et al. (2007: 18), Web 2.0 technology issues are appearing in many, if not most, modules of the library/information courses. The main issues covered are new forms of communication (blogs, RSS, wikis, podcasting and so on), social networking (Facebook, YouTube and so on), media sharing (YouTube, Flickr and so on), and

social tagging and folksonomy. The emphasis is on those aspects which affect the creation and communication of recorded information and the work of the library/information specialist.

2.5 LIS schools, training and curricular in South Africa

LIS Schools in South Africa, according to Raju (2013: 250), like in many other parts of the world, are part of a triangular relationship involving LIS teaching departments, universities and the library and information services profession. Education and training for LIS professionals, as explained by both the Library and Information Services Transformation Charter (2014) and Raju (2013: 255), is offered by the following universities:

- Durban University of Technology
- University of Fort Hare
- University of Cape Town
- University of Kwa-Zulu Natal
- University of Limpopo
- University of Pretoria
- University of South Africa
- University of the Western Cape
- University of Zululand

In general, LIS schools in South Africa offer three levels of undergraduate programmes and four levels of postgraduate programmes (Minishi-Majanja, 2012: 149). Undergraduate qualifications include certificates, diplomas, and bachelors' degrees, while postgraduate levels include the postgraduate diploma, the honours degree, the master's degree and the doctoral degree. Technological imperatives in South Africa, as in other parts of the world, have called for and led to curricula revisions in LIS education and training. For example, in 2013 UWC introduced a new master's programme (MLIS) which retains the Knowledge Management characteristic of the previous MBibl (Information Studies) and ICTs. On the other hand, having faced closure in 2011, in 2012 UCT re-affirmed its commitment to the

continuation of Library and Information Studies at UCT and took a radical review of their curriculum. There seems to be a general fear, as explained by Raju (2005: 7), among LIS departments or schools (locally and internationally) that if they do not respond to technological change by making appropriate innovations to the curriculum, other bodies or academic departments, for example, Computer Science, will meet the challenge.

For library and information services to respond appropriately to the needs of communities served, and to contribute effectively to the goals of the national agenda, the Library and Information Services Transformation Charter (2014) clearly states that it is essential that the education and training provision be suitable with respect to capacity and skills required in a field that has changed dramatically in the last decade. Driving the change are socio-political factors and the technological revolution that has given birth to a knowledge society, where the use of information in all domains is critical for development and success. Ocholla (2000: 37-38), in a comparative overview of LIS education and training in Africa, concluded that, in this new millennium, disregard for technological and market place forces is suicidal and cited South Africa as an example of where most LIS education and training curricula have undergone revision to keep abreast with new developments or programmes.

Minishi-Majanja (2009: 15) also observed that LIS schools in South Africa regularly revamp and rationalise their offerings to keep up with students' and market demands. It has become necessary, as pointed out by Minishi-Majanja (2009: 15), for LIS departments to shift focus to more marketable specialisations or to merge and /or jointly offer academic programmes with other departments. In South Africa, a number of LIS schools have drastically changed course, veering off from mainstream Library and Information Science. According to Dick (2012), survival techniques employed by LIS departments include name changes, shifting focus, re-invention, downscaling, and migration to other faculties. For example, UP's Department of Information Science is located under the Faculty of Engineering. Some LIS schools,

for example, Stellenbosch University are now rather offering courses in Knowledge Management (KM). According to Minishi-Majanja's (2012: 149) observation, the name changes and nature of LIS education programmes in South Africa have not been uniform because each and every higher education institution determines its own programmes, albeit, with the approval from the Higher Education Qualifications Framework.

Most LIS schools in South Africa according to Ocholla and Bothma (2007: 149), are located in universities which ensure that their curriculum development and quality control are adequately monitored and evaluated. This is despite and in addition to the presence of the national qualification authorities such as the South African Qualifications Authority. However, an agreement seems to exist amongst various authors that LIS curricula need to be tailor-made to include the broader concept of Web 2.0 technologies and all its facets and that LIS students as future information professionals need to be aware of the issues and innovations around Web 2.0 technologies more than a student from a different department (Bawden et al., 2007: 16). According to the Library and Information Services Transformation Charter (2014), librarians need to be thoroughly versed in the application of ICTs in library operations and for the use of clients.

2.6 Conclusion

In a changing and dynamic ICT context, the information market has demonstrated an increasing demand for those who have the relevant competencies and skills. Web 2.0 technologies and services are an integral part of this new information environment. It is not a pre-requisite for every LIS student to become a Web 2.0 guru. However, all LIS professionals have to be able to engage critically with the new online tools in order to identify their potential in their own LIS specialism. Web 2.0 is influencing the way in which people learn, access information and communicate with each other. LIS schools and departments are constantly developing courses; as a result, having to make changes to the curriculum every year is fashionable. Change is not only

required of the subject content but, most importantly, of the way in which the curriculum is delivered.

Students should be equipped with 21st century skills which will empower them to meet the needs of the 21st century patrons. The literature has advocated that Web 2.0 technologies should be implemented taking into account pedagogical perspectives. Educational research has confirmed that technology alone does not deliver educational success. It only becomes valuable in education if learners and teachers can do something useful with it. Preparing LIS graduates for the emerging Library 2.0 environment, reaping the educational benefits that Web 2.0 tools offer, and meeting the needs of the Net generation are some reasons for supporting the idea of using Web 2.0 tools in LIS education and incorporating its related themes into LIS curricula.



CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

While Chapter two interrogated the existing literature with regards to the use of Web 2.0 technologies by LIS students as well as LIS education, training and curricula, Chapter three describes the research methodology and techniques applied to this study. The chapter provides insight and justification for the research design and methodology used. This study is premised upon Blumer and Katz's (1974) Uses and Gratification Theory (UGT) and uses a mixed methods design to answer the research questions. UGT is applied to understand media usage. It is important to note that; the crafting of the research questions, as well as the questionnaire, was done based on the UGT. The data collected was also analyzed through the lenses of the UGT. The main objective of this research is to provide a deep understanding of Web 2.0 technology use by LIS students and to ascertain if the curriculum is designed to include Web 2.0 aspects.

3.2 Research problem and questions

This study investigated the use of Web 2.0 technologies by LIS students at UWC. According to Katz et al. (1974) cited by Shao (2009: 9), the UGT assumes that audiences consciously choose the medium that could fulfil their needs and that they are able to recognise their reason for making media choices. Results from existing UGT research, as explained by Stafford and Schkade (2004: 267), suggest that people use media either for content carried by the medium (e.g. information or entertainment), or for the simple experience of the media usage process (e.g. playing with the technology). The UGT provided a deeper insight into why LIS students use Web 2.0 technologies in general and in the academic context.

The research sought to answer the following research questions:

- Which Web 2.0 technologies are used mostly by LIS students?

- What do LIS students use Web 2.0 technologies for?
- How is the LIS curriculum crafted to include training on Web 2.0 technologies?
- What benefits (gratifications) do LIS students derive from the use of Web 2.0 technologies?
- Which Web 2.0 technologies are LIS students being taught?

3.3 Research site

The research was conducted at UWC's Library and Information Science department. It is one of the LIS schools in the Western Cape Province offering LIS training. The Department of Library and Information Science at UWC, like its parent institution, "is alert to its African and international context as it strives to be a place of quality, a place to grow from hope to agency through knowledge" (University of the Western Cape 2013). UWC's LIS department offers a four year Bachelor of Library and Information studies (BLIS) degree, the Master's, PhD and a Postgraduate Diploma in LIS.



3.4 Research design and methodology

Welman, Kruger and Mitchell (2005: 52) defined a research design as a plan according to which researchers obtain participants from whom they collect information. In other words, the research design describes the research structure and stipulates everything that needs to be done in a bid to complete the research. This study investigated the use of Web 2.0 technologies by LIS students. Answers to the research questions were explored through the use of a mixed methods case study. A case study, as explained by Creswell (2003: 15), is a study in which the researcher explores in depth a programme, an event, an activity, a process, or one or more individuals.

According to Swanborn (2010: 17), case studies allow a lot of detail to be collected that would not normally be easily obtained by other research designs. One of the main criticisms of case study research, however, is that the data collected cannot necessarily be generalised to the wider population. This leads to data being collected over longitudinal case studies not always being relevant or particularly useful (Hancock & Algozzine, 2011: 32). Despite the disadvantages, the researcher chose to conduct a case study research because of the need for in-depth understanding of Web 2.0 technology use by LIS students. Creswell (2003: 15) pointed out that case study research lends itself particularly well to mixed methods research, as several approaches to research design, analysis, and interpretation are possible.

According to Creswell (2012: 87), a mixed methods research design is a procedure for collecting, analysing, and mixing both qualitative and quantitative research and methods in a single study to understand a research problem. It is used when both quantitative and qualitative data, together, provide a better understanding of the research problem than either type by itself (Creswell, 2012: 113). In mixed methods research, as noted by Plowright (2011: 121), researchers simultaneously conduct both qualitative and quantitative research to achieve the advantages of each and mitigate their weaknesses. Quantitative approaches, according to Hulme (2007: 6), are characterised by studies that, apply mainly statistical analysis to data collected by standardised questionnaire(s) through survey methods that have been numerically transformed and that come from a sampling frame that indicates it is representative of a broader population.

The key differences between quantitative and qualitative methods, as noted by Newby (2010: 243-244), is their flexibility. Generally, quantitative methods are fairly inflexible. Quantitative research is highly formalised and controlled. With quantitative methodology the response categories from questionnaires are closed or fixed, and answered with either a YES or NO (Guthrie 2010: 87). The major advantage of inflexibility, according to Wiersma and Jurs (2009: 339) is that it allows

for a meaningful comparison of responses across participants and study sites. Ngulube (2009: 30) notes that, the greatest weakness of quantitative research lies in its artificiality; social processes observed within laboratory settings may not necessarily occur within more natural social settings.

On the other hand, qualitative research, as noted by Neuman (2006: 58), is used to answer questions about the complex nature of phenomena, often with the purpose of describing and understanding the phenomena from the participants' point of view. Qualitative research methods according to Hulme (2007: 8) are typically more flexible. In other words, they allow greater spontaneity and adaptation of the interaction between the researcher and the study participant. For example, qualitative methods in most cases ask open ended questions allowing participants to respond in their own words and not confined to YES or NO as in quantitative research.

The process of looking at different data sources, called triangulation, is often cited as the main advantage of mixed methods approach. According to Creswell (2003: 218), triangulation refers to the use of more than one approach to investigate a research question in order to enhance confidence in the ensuing findings. Much of the social research is based on the use of a single research method and as such may suffer from limitations associated with that research method or from the specific application of it; triangulation offers the prospect of enhanced confidence. One of the pitfalls in mixing methods is the temptation to downplay the contribution of other paradigms, traditions, and methods (Barbour, 2008: 159).

The researcher used mixed methods because it provides the most complete or insightful understanding of a particular phenomenon. A combination of both approaches allowed the researcher to conduct semi-structured interviews with key informants, design a questionnaire characterised by both open-ended and closed-ended questions. The researcher also went on to do content analysis which included looking at the departmental websites and curriculum documents. Key informants

possess specialist knowledge about other people or processes and are therefore particularly valuable sources of information.

3.4.1 Data collection procedure

According to Bernard et al. (1986) cited by Tongco (2007: 147), it is imperative that selecting the manner of obtaining data and from whom the data will be acquired be done with sound judgment, especially since no amount of analysis can make up for improperly collected data. This research used a purposive sample. Purposive sampling technique, also called judgment sampling, is the deliberate choice of an informant due to the qualities the informant possesses (Tongco, 2007: 147). According to Tashakkori and Teddlie (2010: 713), purposive sampling techniques involve selecting certain units or cases based on a specific purpose rather than randomly.

In this research, 144 LIS students, of whom 112 were in the BLIS programme, 18 were in the MLIS programme, 11 were in the PGDipLIS programme and three were in the PhD programme, were the participants. Six academics in the LIS department were chosen as key informants. Of the six interviewed academics, two are senior lecturers, one is an Associate Professor and the others are lecturers. They were chosen primarily on the basis that they teach LIS students and also possess in-depth knowledge about the LIS curriculum. Data was collected from LIS students using an online questionnaire, from key informant interviews and the content analysis of curriculum documents and the departmental Website.

3.4.2 Pre-testing of instruments

A pre-test of the questionnaire was carried out to check if the questionnaire had any deficiencies. According to Powell (1999: 105), a pre-test gives a researcher an opportunity to identify questions from the questionnaire that tend to be misunderstood by participants, or that do not obtain the needed information. He further states that there should be an interview with the people that participated in the

pre-test so that they recommend any worthwhile changes aimed at improving the questionnaire. A pre-test of the questionnaire was carried out at Parklands College with two members of staff namely the Information Technology and the Information and Communication Technology teacher. The researcher chose these two persons because of their knowledge of Web 2.0 technologies since they teach the same concepts to their learners. A pre-test for the semi-structured interview with the key informants was conducted with a part-time lecturer in the Department of Library and Information Science at UWC. The lecturer was chosen because she teaches the Knowledge Management Tools and Processes course which includes elements of Web 2.0 technologies.

3.4.3 Questionnaire design

The questionnaire which is included in Appendix E, is made up of five sections. The questionnaire is designed to gather data that throws light on many of the research questions identified earlier in this chapter. A questionnaire, according to Trobia (2008: 653-656), is a set of standardized questions, often called items, which follow a fixed scheme in order to collect individual data about one or more specific topics. Leedy and Ormold (2005: 87) note that a questionnaire is the most common research tool used in the social sciences. This is due to its advantage as a simple, versatile and cost effective method of data collection. In other words, a questionnaire is a set of carefully designed questions given in exactly the same form to a group of people in order to collect data about some topic(s) in which the researcher is interested. Questionnaires can be distributed by post, email or via the Web.

A questionnaire has several advantages, chief among others, it is easy to obtain information from a large group of people fairly quickly. Questionnaires cost much less in as far as time and money are concerned. Respondents can complete the questionnaire when it suits them, there is less pressure for an immediate response, respondents remain anonymous and the lack of interviewer bias are some of the advantages of a questionnaire (Gillham, 2007: 6). Despite the great advantages,

sometimes questionnaires are not returned and the respondents do not have a chance to ask for clarity on questions which are unclear. The researcher chose to use a questionnaire for a variety of reasons, most importantly because an online questionnaire costs less while at the same time, it is fairly easy to distribute to participants in different geographical locations just with the click of a button.

The questionnaire was made up of both open-ended and closed-ended questions. Powell (1999:95) argues that; there are a number of advantages and disadvantages of fixed response questions as compared to open-ended questions. He warns that among the disadvantages of closed questions is the possibility that respondents could select an inexact answer. Powell (1999: 95) suggested that; offering an alternative category like “other” will help the respondents to be as exact as possible. The questionnaire was distributed online to all 112 students enrolled for the BLIS at UWC of whom 50 were in the first year, 25 in the second year, 20 in the third year and 17 in their fourth year. The same online questionnaire distributed to the BLIS students was also distributed to a total of 11 PGDipLIS students, and a total of 18 MLIS students. Lastly, a questionnaire was distributed to three PhD students.

The questionnaire was divided into sections that covered issues to do with the use of Web 2.0 technologies by LIS students. Section A gathered data about background information of the respondents and the programme (level) the respondent is enrolled for.

Section B gathered data about the familiarity of the respondents with Web 2.0 technologies. It also collected data about where they normally use Web 2.0 tools from as well as the devices they use to access Web 2.0 technologies.

Section C gathered data about the use of Web 2.0 technologies, firstly looking at what they use Web 2.0 technologies for in general, and secondly, what they use Web 2.0 technologies for in the academic spheres, and lastly how often they use Web 2.0 technologies.

Section D probed the benefits associated with the use of Web 2.0 technologies. Respondents had to choose from a list what they perceived to be the benefits derived from using Web 2.0 technologies in general and for academic purposes.

Finally, Section E gathered data about Web 2.0 technology training. Question 12 is closed asking whether they received Web 2.0 technology training or not. Question 13 is an open-ended question probing if the respondent is of the view that Web 2.0 technology training should be part and parcel of the curriculum or not. For either choice there had to be an explanation provided in their own words in the follow-up question.

3.4.4 Key informant interviews

Interviews, according to Wiersma and Jurs (2009: 286), can be open-ended and casual or it might be structured. Open-ended questions are unrestricted, broad and encourage the interviewee to respond in his/her own words. According to Creswell (2012: 189), a structured interview has a rigorous set of questions which does not allow one to divert; a semi structured interview is open allowing new ideas to be brought up during the interview as a result of what the interviewee says. Semi-structured interviews, as pointed out by Leedy and Ormrod (2005: 102), are conducted with a fairly open framework which allows for focused conversational two-way communication. The researcher conducted semi-structured interviews with key informants. A key informant interview, refers to obtaining information from an individual who is considered to be particularly knowledgeable about the topic of interest. This person is called a key informant (Fetterman, 2008: 478-479).

There are several drawbacks when using key informants, as noted by Fatten (2008: 478-479), which include, bias and memory failure among others. Key informants in this research were interviewed face to face and it allowed the researcher to obtain clarity on many issues. The key informants were chosen based on their knowledge and expertise to provide the needed information. Included were lecturers and the

acting head of UWC's LIS School because they have in-depth knowledge about the curriculum.

There was no set of questions to be asked just a framework to provide a guideline. Section A gathered information about the position held by the interviewee within the department.

Section B was guided by the following framework of questions about Web 2.0 technology training and use:

- What do you understand by Web 2.0 technologies?
- What do you personally use Web 2.0 technologies for?
- Which Web 2.0 tools have you used in general?
- How often do you use Web 2.0 technologies?
- Do you teach students the use of Web 2.0 technologies?
- At what level do you introduce students to the concept of Web 2.0 technologies?
- Do you have the resources to teach Web 2.0 technologies, i.e enough computers and skilled staff (question for the acting chairperson).
- As per your observation, what do you think LIS students use Web 2.0 technologies for, in general?
- For what academic purposes are LIS students using Web 2.0 technologies for?

Section C was guided by the following framework of questions, probing how lecturers are incorporating Web 2.0 technologies in their courses:

- How important is it for Web 2.0 technology aspects to be incorporated in the curriculum?
- How have you incorporated Web 2.0 in your teaching?
- Which Web 2.0 technologies are being taught to students and why?
- How many modules include Web 2.0 technologies in the curriculum?
- Which Web 2.0 technologies are being taught to students and why?

Lastly, Section D gathered data about the benefits of Web 2.0 technologies. The following framework provided a guide:

- In the academic context, what do you think are some of the benefits associated with the use of Web 2.0 technologies for LIS students?

3.4.5 Content analysis

Content analysis is a research strategy that examines the presence of concepts in texts, such as interviews, discussions, newspaper headlines and articles, historical documents, speeches, conversations, advertisements, informal conversations, performances, drawings, or images (Mathison, 2005: 8). Researchers, as explained by Mathison (2005: 8), analyse the presence, meanings, and relationships of words and concepts and make inferences about the messages within the texts, the writers, the audience, the programme, the organization, and even the larger culture. Content analysis may be qualitative or quantitative and involves breaking the text into manageable categories. According to Prasad (2008: 8), content analysis is a safe method for data collection in the sense that, if the researcher discovers that a portion of the necessary information is missing or incorrectly coded, it is possible to return to the text and supplement the missing data. It allows for both qualitative and quantitative approaches. Content is an unobtrusive means of collecting data because it does not involve people (Prasad, 2008: 9). Despite the advantages, content analysis can be time consuming due to huge amounts of documents that need to be analysed. The researcher analysed the departmental Websites, course outlines, assignment topics and curriculum documents to identify modules that include Web 2.0 aspects.

The researcher used a guideline of questions to analyse and extract data from the curriculum documents, course outline and departmental Websites. The researcher probed the following issues from the content:

- Which courses offered by the LIS departments include Web 2.0 technology aspects?

- At what level are LIS students introduced to Web 2.0 technologies?
- Which Web 2.0 technologies are predominantly found in the LIS curriculum?
- Which academic tasks are LIS students required to perform using Web 2.0 technologies?
- Is there a separate module for Web 2.0 technologies in the curriculum?

3.4.6 Data analysis

One of the most important steps in the research process is data analysis. The Statistical Package for Social Sciences (SPSS) was used to summarize and analyse the quantitative data. Qualitative data was analysed by grouping interview and questionnaire responses into various themes and conducting some comparisons. The questionnaire questions are grouped into different sections. Section A deals with background information and the questions are closed. Section B; addresses familiarity with Web 2.0 technologies by LIS students. Section C deals with the use of Web 2.0 technologies, and Section D deals with the benefits of Web 2.0 technologies for LIS students. Lastly, Section E addresses Web 2.0 technology skills and training. The broad themes used for data analysis evolved from key informant interviews, content analysis and questionnaire results. Data collected from key informant interviews and content analysis was also grouped into categories and analysed.

3.4.7 Triangulation

The data collected from the questionnaire, interviews and content analysis was triangulated. Triangulation is part of data collection that cuts across two or more techniques or sources (Wiersma & Jurs, 2009: 287). Triangulation, as noted by Wiersma and Jurs (2009: 287), can take many forms but its basic feature will be the combination of two or more different research strategies in the same study. Basically, triangulation is a comparison of information to determine whether or not there is corroboration. In this research, the researcher triangulated the outcome of the questionnaire survey, key informant's semi-structured interviews and results from

content analysis (curriculum documents and departmental Websites) and made conclusions based on the data collected from all the instruments.

3.5 Summary of chapter

This chapter discussed the research design and outlined the tools and steps taken to collect the data. The use of mixed methods (quantitative and qualitative) in research increases validity of findings by allowing the researcher to examine the same phenomenon in different ways. In this research, LIS students from UWC's LIS School answered an online questionnaire, and semi-structured interviews were conducted with key informants (lecturers) from the UWC LIS School. Lastly, content from the departmental Website and curriculum documents was analysed. The next chapter will present the evidence of the content analysis and data gathered from the questionnaire and interviews.



CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The previous chapter outlined the research methodology and data collection methods used for the study. Chapter four presents the data collected through the online questionnaire. The questionnaire is attached in Appendix E. Alreck and Settle (1995: 267) made it clear that data analysis entails categorizing and summarizing data in order to answer the research questions. Quantitative data analysis involves the use of statistical tools in order to reduce the amount of details in the data, summarising it and making the most important facts and relationships apparent.

The presentation of data should involve a discussion of themes and categories as well as figures and tables which present various themes. Qualitative software programmes facilitate data storage, coding, retrieval, comparing and linking, but researchers do the analysis (Cohen, Manion & Morrison, 2007: 468). The Statistical Package for Social Sciences (SPSS) software programme is widely used to analyse quantitative data. According to Blaxter, Hughes and Tight (2006), SPSS enables the input of raw data, and modification and reorganisation of data to carry out a wide range of simple statistical and multivariate analyses.

To interpret the results of this study, the Uses and Gratifications theory (UGT) of Blumer and Katz (1974: 76) is used. UGT is concerned with how and why people turn to the media they do.

4.2 Background and biographical information

The first section of the online questionnaire required the respondents to provide basic information relating to their gender and the different programmes they are enrolled for.

4.2.1 Gender indication

The online questionnaire was emailed to a total of 158 LIS students and of the 158, 85 (53.79%) responded. According to Babbie (1998), a response rate of 50% is adequate while a response rate greater than 70% is very good. If administered via email: 40% is average, 50% is good, and 60% is very good (Instructional Assessment Resources, 2015). Of the respondents, 67 (78.8 %) indicated that they were female while only 18 (21.2 %) pointed out that they were male. In a similar study entitled, “*Web 2.0 in library and information science education: the Greek case*”, Garoufallou and Charitopoulou (2012: 209) discovered that, 85.9% of the respondents were females and 14.1% males; this reflects similar proportions of male and female students in the LIS Department. The researcher observed that there seems to be more females enrolled for LIS courses than males.

4.2.2 Programme enrolled for

The respondents’ programmes are shown in Figure 2. Fifty eight (68.4%) indicated that they are undergraduate students, studying towards their BLIS degree. Fifteen (17.6%) indicated that they are studying towards their MLIS degree, while nine (10.5%) pointed out that they are enrolled for the PGDipLIS. Three (3.5 %) of the respondents indicated that they are studying towards their PhD.

N=85

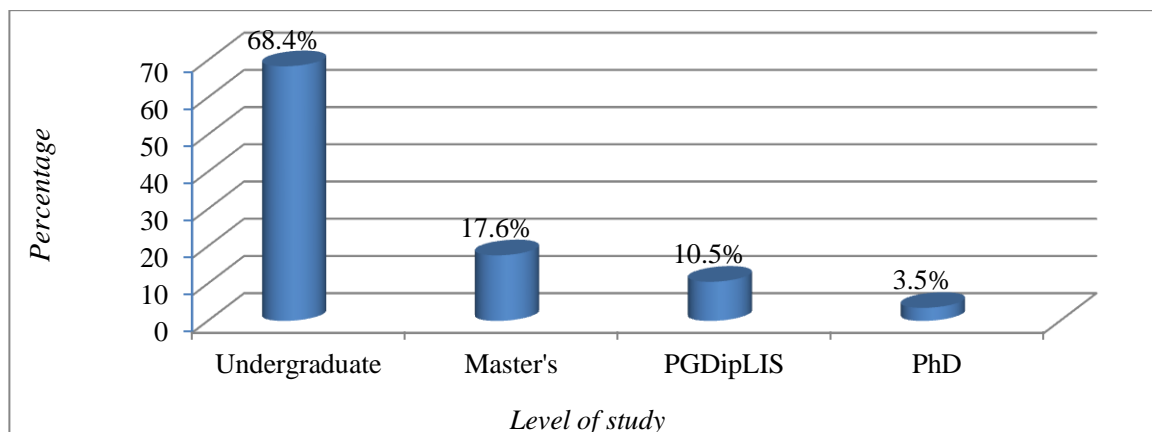


Figure 2: Programme of study

4.3 Familiarity with Web 2.0 technologies

This section probed the participants' familiarity with Web 2.0 technologies and where they normally access Web 2.0 technologies (for example, the library, at home, the faculty laboratory, and so on) as well as the various devices they use to access Web 2.0 technologies.

4.3.1 Familiarity with Web 2.0 technologies

The list of Web 2.0 technologies on Figure 3 was devised from studies by Al-Daihani (2009: 48-50), Garoufallou and Charitopoulou (2011: 495), Shueb and Rayees (2014: 33-34), Barnet, Collis, Narborough, Parry, Peel, Shields, Stubbings, and Walton (2010: 6) and Sarrafzadeh, Hazeri and Alavi (2011: 182).

N=85

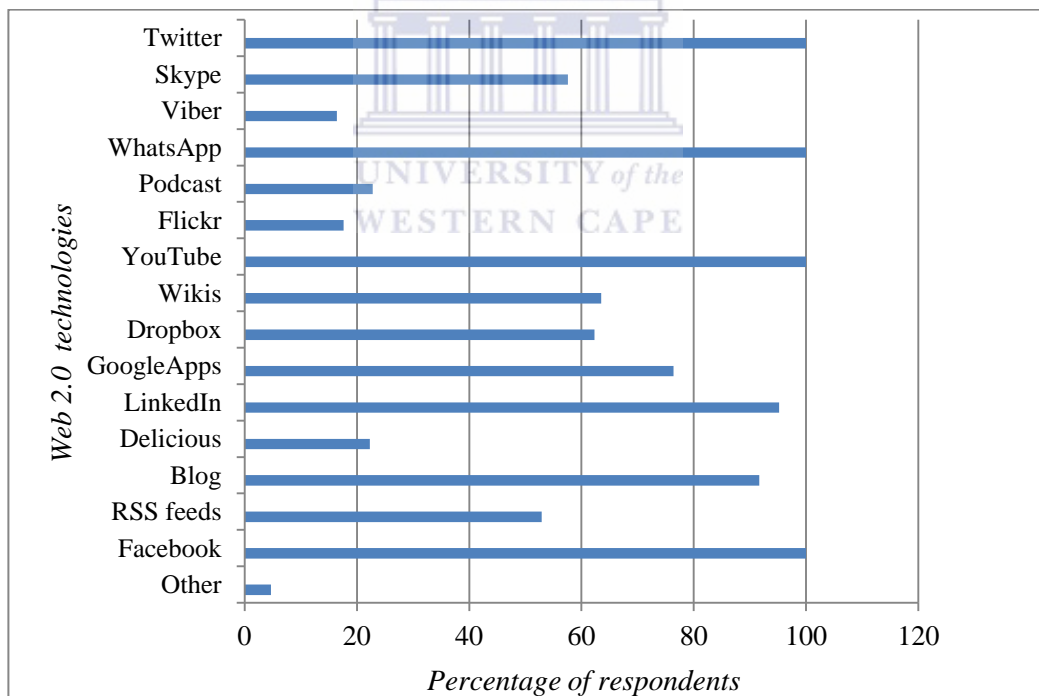


Figure 3: Familiarity with Web.0 technologies

The question asked participants to indicate their familiarity with certain Web 2.0 technologies. As depicted on Figure 3, respondents are more familiar with some Web

2.0 technologies than others. Of the respondents, 85 (100%) indicated that they are familiar with Facebook, Twitter, YouTube and WhatsApp. Many of the respondents, more especially the undergraduate students, showed that they are less familiar with Web 2.0 technologies such as Flickr, Viber, Delicious, RSS feeds and Podcasts. A table is attached as Appendix F clearly illustrating less familiarity of the identified Web 2.0 technologies by undergraduate students. Four per cent of the respondents indicated that they also use BBM, Prezi, Moodle, Glogster and Instagram among others. A study by Garoufallou and Charitopoulou (2011: 494) in Greece found that, - 73.80% of the respondents indicated that they were not familiar with social bookmarks, while 48.70% of the students use social networks, and only 8.8% used RSS feeds. Blogs are reasonably well known and used by 60.73% in the Greek study.

Sarrafzadeh, Hazeri and Alavi (2011: 178) in an Iranian LIS education study discovered that; the blog was the tool that respondents were most familiar with followed by Facebook, wiki and YouTube. On the other hand, respondents had the least involvement with Twitter and Flickr with only 11% of respondents having an account on them. Nearly half of respondents were totally unfamiliar with those two tools or had just heard about it. The primary reason for this in Iran is that the popular social networking tools, Twitter included, are blocked by the government and using them even in teaching and research is prohibited. As a result, LIS academics and students are not able to take the educational advantages of these tools (Sarrafzadeh, Hazeri & Alavi, 2011: 170).

4.3.2 Preferred place to access Web 2.0 technologies

The different locations to access Web 2.0 technologies were adapted from a study by Thanuskodi (2012: 79). See Figure 4 below.

The respondents were asked to select all the responses that applied in relation to where they access Web 2.0 technologies. Of the respondents, 82 (96.4 %) indicated that they access Web 2.0 technologies from the library, 82 (92.9 %) at home and 61

(71.7 %) make use of the Faculty computer laboratory. Three of the respondents (3.5%) pointed out that they access Web 2.0 technologies at their workplace and

N=82

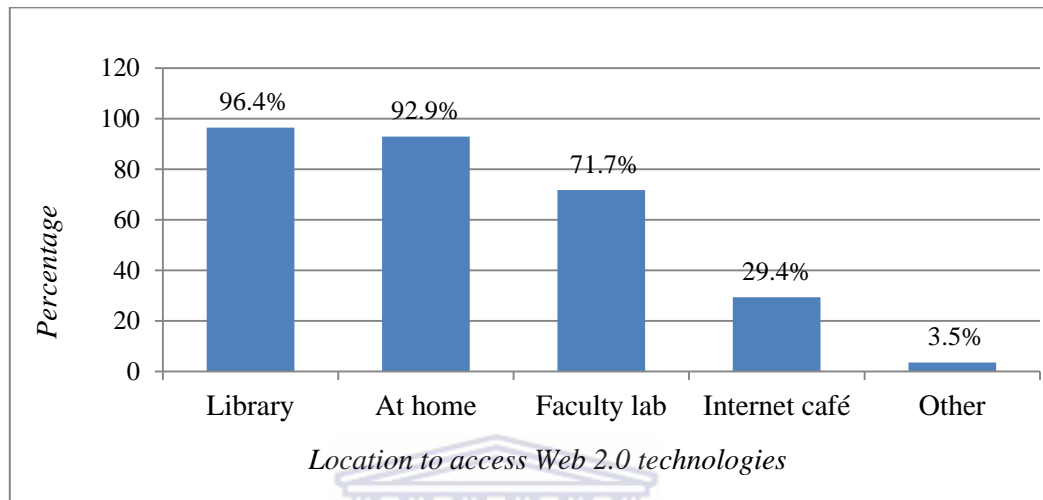


Figure 4: Access to Web 2.0 technologies

student residence. Barnett et al. (2010:7) conducted a study on the use of Web 2.0 tools by students at Loughborough University and found that the most popular way students access Web 2.0 sites was from desktops provided by the university, either in the library (81%) or other desktops in computer laboratories (78%). Many of the respondents would also use their laptops to access the WiFi network on campus to use Web 2.0 technologies.

4.3.3 Devices used to access Web 2.0 technologies

The different devices that can be used to access Web 2.0 technologies listed on Figure 5 below were selected from the Barnett et al. (2010: 9) study.

This question was asked to find out the different devices participants use to access Web 2.0 technologies. Of the respondents, 85 (100%) indicated that they use mobile phones to access Web 2.0 technologies while 92.9% use laptops to access these technologies. The respondents who indicated “other” did not elaborate on the devices they are using to access Web 2.0 technologies. However, Barnett et al. (2010:7)

conducted a study on the use of Web 2.0 tools by students at Loughborough University and found that there was far less use of hand held gadgets, for example,

N=85

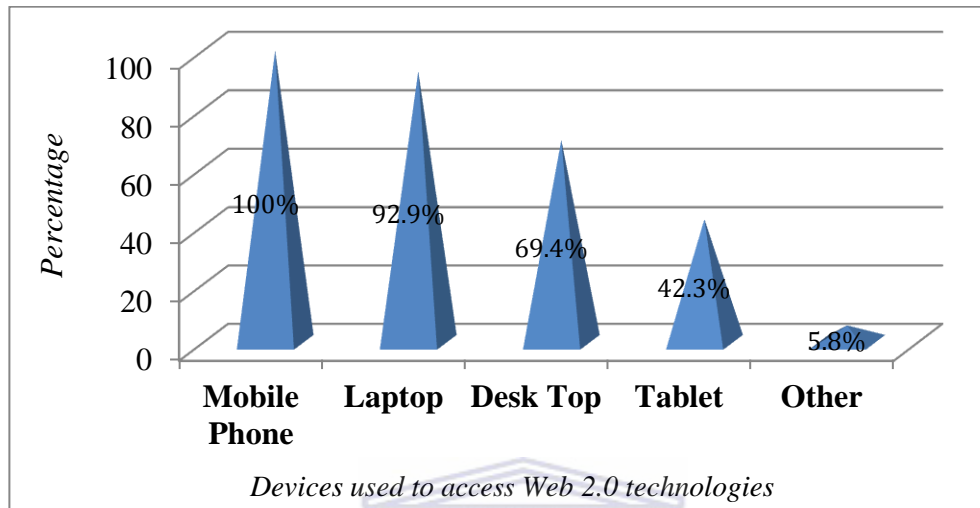


Figure 5: Devices used to access Web 2.0 technologies

smart phones to access Web 2.0 sites. Of the respondents in the Barnett et al study, 157 (88.2%) regularly use their own laptop to access Web 2.0 sites. Unlike in the Barnett et al (2010:7) study, in this study all respondents indicated that they use their mobile phones to access Web 2.0 technologies. This could be attributed to the fact that apps were not yet available in 2009/2010 when the Barnett et al study was conducted (NMC Horizon Report, 2009). Mobile apps, as explained by the NMC Horizon Report (2012: 7), were the fastest growing dimension of the mobile space in higher education in 2012, with impacts on virtually every aspect of informal life, and increasingly, every discipline in the university.

Only thirty six (42.3 %) of the respondents indicated that they use tablets to access Web 2.0 technologies. It is the researcher's observation that the less usage of tablets could be attributed to unaffordable prices at which they are sold. According to Patel (2014), "Just over a year ago we stepped back and looked at the devices currently in the market in South Africa and realised there was a massive gap. The smartphones and tablets on offer were either prohibitively expensive or cheap and badly specced".

By badly specced Patel implied that, the devices either had poor screen resolution, were slow, the battery's life span was short and had small memory among others and as a result are not user friendly.

4.4 Use of Web 2.0 technologies

This section probed participants about their general and academic use of Web 2.0 technologies. It also looked at the frequency with which participants used Web 2.0 technologies.

4.4.1 General use of Web 2.0 technologies

The choices for the general use of Web 2.0 technologies on Figure 6 below were adapted from similar studies by Garoufallou and Charitopoulou (2011: 496), Thanuskodi (2012: 79), and Katz and Blumer (1974)'s Uses and Gratifications Theory.

N=81

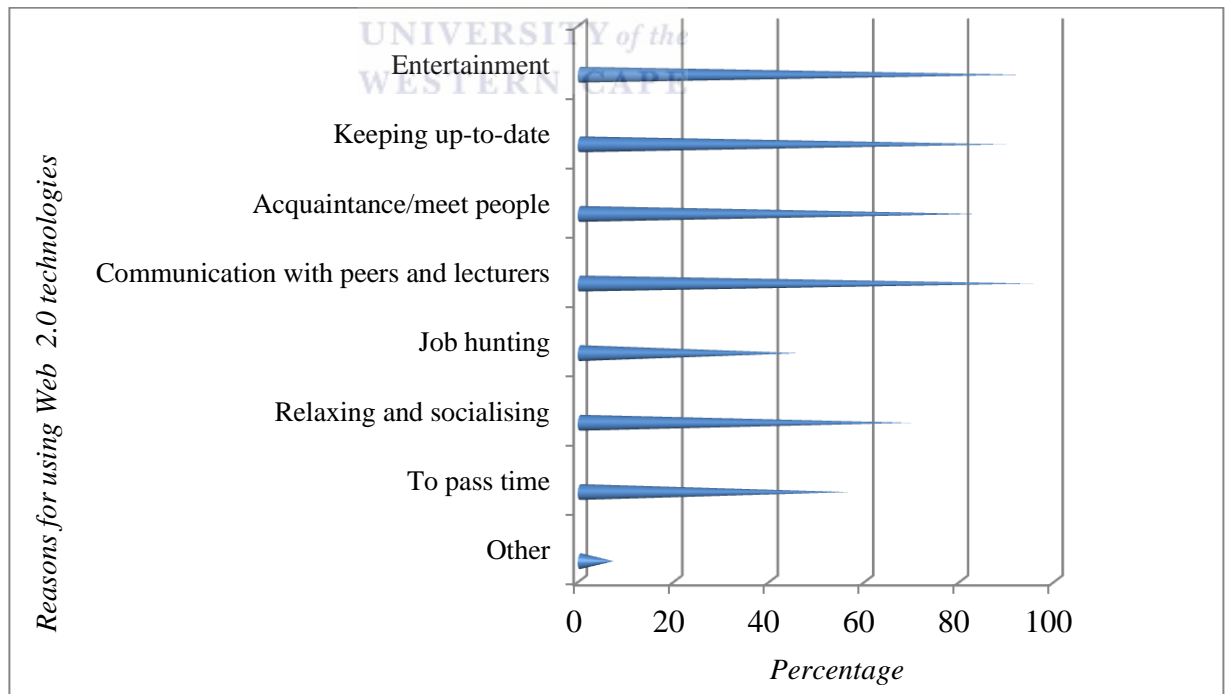


Figure 6: General use of Web 2.0 technologies

This question required participants to cite what they use Web 2.0 technologies for in general; hence they could choose more than one option that applied. Of the respondents, 81 (95.2 %) indicated that they use Web 2.0 technologies for communication with friends/family, 79 (92.9 %) use Web 2.0 technologies for entertainment and 76 (89.4 %) use Web 2.0 technologies to keep up-to-date. It is important to note that a huge percentage of both undergraduate and postgraduate students (92.2 %) use Web 2.0 technologies for “communication with friends and family”. However, 45.8% of the respondents mainly constituted by postgraduate students, mentioned the use of Web 2.0 technologies for - “job hunting”. Sixty nine per cent of the postgraduate students chose “job hunting” while, 31% of the undergraduate students chose “job hunting”.

A similar study conducted in Greece by Garoufallou and Charitopoulou (2011: 495) discovered that, students use Web 2.0 technologies for among other things, fun and curiosity, keeping up to date and for acquaintances/ meet new people. Sawant (2012: 12) in a research paper entitled, “*the study of the use of Web 2.0 tools in LIS education in India*” also observed that 58.8 % of the respondents used Web 2.0 technologies for fun or social purposes. Blumer and Katz’s (1974) UGT summarised common reasons for media consumption, among others: for information seeking, passing time, relaxation, as a communication utility, for integration and social interaction as well as for entertainment. These are the same reasons identified by LIS students for the general use of Web 2.0 technologies. According to the NMC Horizon Report (2014: 8), more people are turning to social media for recreational and educational purposes than to television and other popular mediums. YouTube, for example, reaches more American adults aged 18-34 than any cable networks. Furthermore, Reuters, quoted by the NMC Horizon Report (2014: 8), reported that visiting social media Websites is the most common activity that people engage in on the Web. People log on daily to catch up on news and share content.

4.4.2 Academic use of Web 2.0 technologies

The choices for the academic use of Web 2.0 technologies on Figure 7 below were adapted from similar studies by Garoufallou and Charitopoulou (2011: 496) and Thanuskodi (2012: 79).

This question was asked to have an understanding of the academic purposes for which LIS students use Web 2.0 technologies. More than 90% of the respondents indicated that they use Web 2.0 technologies to share knowledge with fellow students, for information seeking and research, and for communication with peers and lecturers. Sixty five (76.4 %) respondents indicated to remain abreast of technology and for their assignments. Three per cent of the postgraduate respondents who indicated “other” pointed out that they use Web 2.0 technologies for marketing and creating profiles for their employers. These reasons, however, fall under the general use of Web 2.0 technologies category rather than academic. An Indian study discovered that a majority, i.e. 82,4 % of the participants, uses Web 2.0 technologies for sharing knowledge with fellow students and communicating with lecturers.

N=83

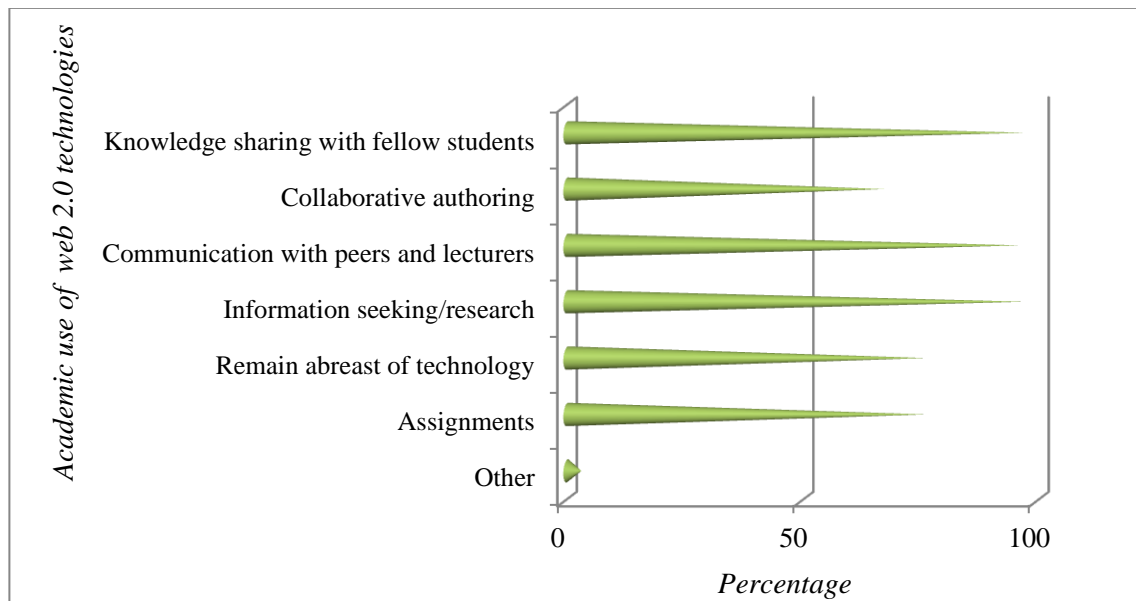


Figure 7: Academic use of Web 2.0 technologies

A study by Thanuskodi (2012: 80) in India, revealed that; 80% of the respondents use Web 2.0 technologies for acquiring information while 53.33% use Web 2.0 technologies for study and 41.66 % use it for making contact with fellow students. Web 2.0 technologies, as discovered by Garoufallou and Charitopoulou (2011: 495), can be used for educational purposes, for promoting ideas, exchanging knowledge and supporting students' studies and life, something that Greek LIS students do not take into account as yet. However, the results of their study showed that generally, most of the students do not believe that social networks can assist them in their studies; they think that the networks' main function is to entertain them.

The high usage of Web 2.0 technologies for academic purposes by LIS students as depicted in the current study is supported by a trio of researchers, Sarrafzadeh, Hazeri and Alavi (2011: 178), who pointed out that the need for LIS students to be familiar with Web 2.0 technologies has been reinforced in recent years. Preparing LIS graduates for the emerging Library 2.0 environment, reaping the educational benefits that Web 2.0 tools offer and meeting the needs of the so-called net generation are some reasons for supporting the idea of using Web 2.0 technologies in LIS education and incorporating their related themes into the LIS curricula.

According to the NMC Horizon Report (2014: 8), sites such as Facebook, Twitter, Flickr, YouTube and many others make it easy to share and find stories and media. Virkus (2008: 271) pointed out that Library and Information Science is about information and/or knowledge creation, and by using Web 2.0 technologies, LIS students practise collaborative knowledge building. LIS is a multidisciplinary field and there is no doubt that its education can be richer with collaboration of people from different disciplines. This might happen more easily by using Web 2.0 technologies.

4.4.3 Frequency of using Web 2.0 technologies

The frequency of use options was adapted from a study by Barnet et al. (2010: 7).

Table 1: Frequency of use

N=83

<i>Frequency of use</i>							
<i>Web 2.0 technologies</i>		Many times a day	Once a day	Many times a week	Once a week	Once a month	Never
	Facebook	69%	12.04%	10.84%	3.6%	2.4%	1.2%
	Twitter	10.8%	3.6 %	20.5%	55.4%	7.2 %	2.4%
	LinkedIn	1.2%	3.6%	6%	10.8%	14.5%	63.9%
	WhatsApp	65.1%	0%	33.7%	1.2%	0%	1.2%
	Blog	1.2%	3.6%	6%	10.8%	14.5%	63.9%
	YouTube	16.9%	25.3%	53%	3.6%	1.2%	0%
	Skype	8.4%	9.6%	15.7%	16.9%	30.1%	19.3%
	Drop box	7.2%	7.2%	11%	4.8%	8.4%	61.4%
	Flickr	0%	1.2%	9.7%	8.4%	19.3%	61.4%
	Viber	4.8%	6%	8.5%	2.4%	7.2%	71.1%
	Delicious	0%	3.6%	2.5%	3.6%	9.6%	80.7%
	Podcast	1.2%	3.6%	6%	9.6%	6%	73.5%
	Google Apps	61.4%	7.2%	2.3%	4.8%	2.4%	1.2%
	RSS feeds	4.8%	2.4%	3.6%	4.8%	24.7%	56.6%
Wiki	7.2%	10.8%	8.4%	15.7%	53%	4.8%	

This question was aimed at finding out how often LIS students use Web 2.0 technologies. Of the respondents depicted on Table 1, more than 60% pointed out that they use Facebook, WhatsApp, and Google Apps many times a day. At the same time, more than 60% of the respondents had never used LinkedIn, blogs, Dropbox, Flickr, Viber, Delicious or podcasts.

Facebook is the most frequently used Web 2.0 tool as per the findings of Garoufallou and Charitopoulou (2011: 495) too, a result which concurs with the current study in which Facebook is used many times per day by 69% of the participants followed by Whatsapp (65%). The high usage of Facebook followed by Whatsapp and can be understood when looked at through the lens of Blumer and Katz's (1974) UGT which points out passing time, entertainment, relaxing and perceived ease of use as some of the reasons people would prefer to use specific Web 2.0 technologies. Social media is changing the way people interact, present ideas and information, and judge the quality of content and contributions. Facebook is the first high-tech service or platform in South Africa that has seen exactly equal take-up by males and females. This is one of the fascinating findings of the *South African Social Media Landscape 2015 report*, released by World Wide Worx and Fuseware (2014). Their findings show that Facebook remains the most popular social network in South Africa, followed by YouTube and Twitter.

4.4.4 Utilization of Web 2.0 technologies

This question was asked to find out whether or not LIS students had created either a Website, video, or account with the listed Web 2.0 technologies.

Table 2: Utilization of Web 2.0 technologies

N=82

Web 2.0 technologies		Account	Website	Video	No
	Facebook	96.3%	0%	0%	3.7%
	Twitter	95.1%	0%	0%	4.6%
	LinkedIn	39%	0%	0%	61%
	WhatsApp	97.6%	0%	0%	2.4%
	Blog	0%	43.9%	0%	56.1%
	YouTube	72%	0%	0%	28%
	Skype	78.1%	0%	0%	21.9%
	Drop box	41.5%	0%	0%	58.5%
	Flickr	25.6%	0%	0%	74.4%
	Viber	31.7%	0%	0%	68.3%
	Podcast	2.4%	0%	0%	97.6%
	Google Apps	90.2%	7.3%	0%	2.4%
	Wiki	0%	25.6%	0%	74.4%

The highly subscribed to Web 2.0 technologies as depicted on Table 2 where LIS students created accounts include WhatsApp 80 (97.6 %), Facebook 79 (96.3 %), Twitter 78 (95.1 %) and Google Apps 74 (90.2 %). The following Web 2.0 technologies are less popular with a high percentage of the participants indicating that

they have not created an account or video: podcasts 80 (97.6%), and Flickr 61 (74.4%). Thirty nine (43.9%) of the respondents indicated that they had created a blog and only 25.6% of the respondents had created a wiki. It is important to note that some Web 2.0 technologies offer overlapping features which result in less usage of others, for example, Facebook offers photo sharing functionalities which are also available on Flickr, the photo sharing Website.

A similar study by Garoufallou and Charitopoulou (2011: 495-496) revealed that 50% of the respondents had created a blog, 42.86% had a Facebook account and 3.6% had a YouTube account and a wiki. In Thanuskodi's (2012: 81) study, only eight (13.33%) respondents said that they had used pictures from Flickr while only five (8.33%) had added pictures to Flickr. The Thanuskodi study also shows that more than 50% of the participants had not created a podcast nor had they created an account on Flickr, LinkedIn or Viber. The researcher discovered some discrepancy with data from Figure two where only 17.6% of the participants indicated familiarity with Flickr, 57.6% with Skype and 16.4% with Viber but went on to indicate in Table 2 that 25.6% had created accounts on Flickr, Skype (78.1%) and Viber (31.7%). It does not make sense that someone could make use of a Web 2.0 technology which they are not familiar with as revealed by data from Figure 3 and Table 2.

4.5 Benefits of Web 2.0 technologies

This section deals with the academic benefits that are associated with Web 2.0 technologies and participants could choose from the available options. Virkus (2008: 272) pointed out that, the use of Web 2.0 technologies is more beneficial for LIS education than any other discipline because LIS students will utilise Web 2.0 tools in their day to day work.

4.5.1 Benefits of Web 2.0 technologies

The benefits of Web 2.0 technologies listed on Table 3 below were adapted from studies by Garoufallou and Charitopoulou (2011: 496), Garoufallou and Charitopoulou (2012: 212) and Sarrafzadeh, Hazeri and Alavi (2011: 182). A Likert

scale with choices ranging from strongly agree to strongly disagree was used to ascertain how participants felt regarding the benefits of Web 2.0 technologies.

Table 3: Benefits of Web 2.0 technologies

N=85

		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
<i>Benefits of Web 2.0 technologies</i>	They help me improve technology proficiency	32.9%	56.5%	7.1%	2.3%	1.2%
	Web 2.0 technologies extend beyond classroom	68.2%	21.2%	10.6%	0%	0%
	Web 2.0 technologies provides a platform for entertainment	9.4%	87.1%	0%	3.5%	0%
	They facilitate collaborative learning	28.2%	68.2%	0%	3.6%	0%
	Improved knowledge sharing and collaboration	60%	36.5%	0%	3.5%	0%
	Provide cheaper and efficient communication platforms	61.2%	36.4%	2.3%	0%	0%
	Useful for safe and secure storage of documents e.g. Google Docs and Drop box	21.2%	57.6%	10.6%	7.1%	3.5%
	Provide easier and faster access to information, when and where it is needed	25.9%	68.9%	5.9%	2.3%	0%
	A low level of complexity is needed to use Web 2.0 technologies (minimum skills)	21.2%	71.8%	2.3%	2.3%	2.3%

Of the respondents, a total of 97.6% agreed/strongly agreed that Web 2.0 technologies provide cheaper and efficient communication platforms, 96.5% agreed/strongly agreed that Web 2.0 technologies makes it easier to share knowledge and collaborate while at the same time providing a platform for entertainment. Ninety four per cent of the participants were in agreement with the notion that Web 2.0 technologies provide easier and faster access to information when and where it is needed. Similar research by Sawant (2012: 12) revealed that, all respondents felt that the use of Web 2.0 tools equips learners and instructors with versatile tools of knowledge exchange and collaboration which overcome the limitations of face to face instruction. This was followed by 88.2 % of respondents who opined that it increases self-directed learning skills and enables instructors to better develop and realize their personal potential.

Web 2.0 technologies hold profound potentials in education because of their open nature, ease of use and support for effective collaboration and communication. They change the traditional view of human knowledge and open up more opportunities in teaching and learning. Today, many teachers are exploring the use of Web 2.0 tools in teaching and learning (Sawant, 2012).

4.6 Web 2.0 technology skills and training

This section asked participants how they acquired the skills to use Web 2.0 technologies. The last question of this section is open-ended and it required participants to provide their own explanations with regards to the inclusion of Web 2.0 technologies in the LIS curriculum.

4.6.1 Learning to use Web 2.0 technologies

This question was asked to find out how LIS students acquired the skills to use Web 2.0 technologies and they could choose more than one option from the identified list.

N=83

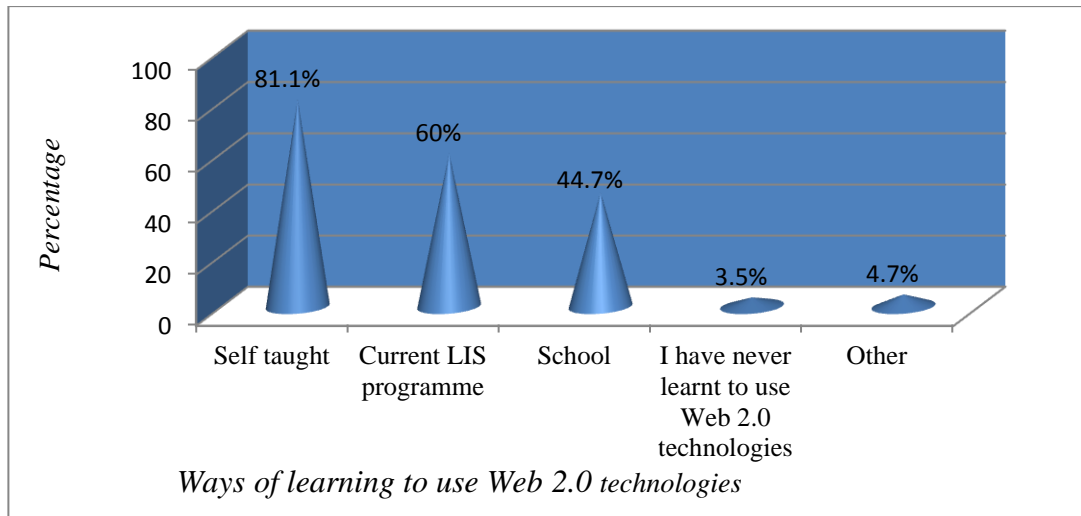


Figure 8: Learning to use Web 2.0 technologies

Figure 8 illustrates that 69 (81.1 %) participants indicated that they were self-taught, 51 (60%) were taught in the current LIS programme and 38 (44.7 %) learnt at school. The data gathered on Figure eight indicates that some respondents learnt to use Web 2.0 technologies both in the current LIS programme, at school and also learnt on their own. Some of the participants indicated that they were taught to use Web 2.0 technologies by friends, at conferences and workplaces.

According to Godwin and Parker (2008: 47), it cannot be assumed that LIS students will just 'pick up' skills in making videos, managing blogs, convening meetings in a virtual world, or embedding current awareness applications in Facebook. Using blended learning techniques and facilitating learning between peers are in the spirit of Web 2.0 technologies, but need careful planning and facilitation. Beyond that, the way in which LIS students' Web 2.0 technology skills are developed will depend on the structure and specific focus of a particular LIS course.

Blumer and Katz's (1974), UGT singles out perceived ease of use as one of the primary reasons why people would use Web 2.0 technologies because they come with

low level of complexity. This is affirmed by the data on Figure eight where 81% of the respondents learnt to use Web 2.0 technologies on their own.

4.6.2 Web 2.0 training in the current LIS courses

This question gathered data on the Web 2.0 technologies LIS students received training on, in their current LIS programmes. See Figure 9 below.

N=63

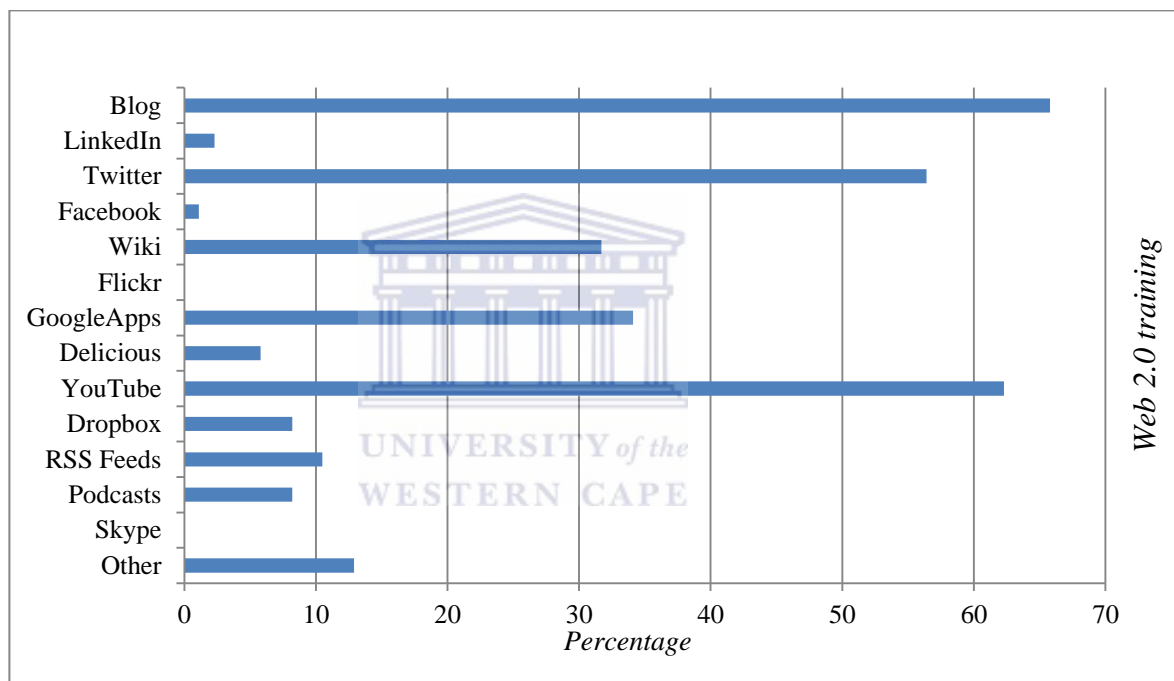


Figure 9: Web 2.0 technology training

Fifty six (65.8 %) of the respondents, indicated that they had been trained in the use of blogs, YouTube 53 (62.3 %) and Twitter 48 (56.4 %). A small percentage of the respondents indicated that they had received training on RSS feeds 9 (10.5 %), Drop- box and podcasts 7 (8.2 %) and Delicious 5 (5.8%). None of the respondents indicated that they had received training on the use of Skype and Flickr. The need for a holistic approach to embed Web 2.0 applications in LIS education is emphasised in the literature. Issues around Web 2.0 technologies, as explained by Sarrafzadeh, Hazeri and Alavi (2011: 179), are not only required to be an integral part of the LIS

curricula but should also be applied in the structure of the educational context to support both LIS teaching and learning. As a result, it is imperative for the LIS education system to foster the actual engagement of learners with the new environment in the learning process. The integration of Web 2.0 technologies with an LIS teaching and learning environment, according to IFLA Trend Report (2013), offers a great chance for LIS students to be prepared for lifelong learning.

4.7 Inclusion of Web 2.0 training in the LIS curriculum, N=84

LIS students were asked if they thought that Web 2.0 technologies should be included in the LIS curriculum. Eighty one (95.2 %) said YES and only three (3.5%) said NO. Their view is also shared by Al-Daihani (2009: 42), who noted that, the increasing use of Web 2.0 technologies in the field of LIS makes it incumbent upon the educational programmes to respond to the challenges and demands of this technology. Virkus (2008: 272) also pointed out that the use of Web 2.0 technologies is more beneficial for LIS education than any other discipline because LIS students will utilise Web 2.0 tools in their day to day work. The LIS students' varied reasons for including Web 2.0 technologies in the LIS curriculum are elaborated on the follow-up question below.

4.8 Agree to the inclusion of Web 2.0 technologies, N=53

A follow-up question was asked to probe participants' reasons for their choice in 4.7. Of the respondents, 53 (62.3%) gave reasons supporting the inclusion of Web 2.0 technologies in the LIS curriculum and 34.2 % did not answer the follow-up question which required them to state the reason for their choice. Below are the categorized reasons cited in support of the inclusion of Web 2.0 technologies in the LIS curriculum:

Useful tools for librarians

Some respondents viewed Web 2.0 technologies as important tools for librarians and as a result felt that they should be included in the LIS curriculum.

“It should be included because LIS students should be prepared for the work places where the use of Web 2.0 is becoming a must”

“Not all LIS students are aware or use all the Web 2.0 technologies therefore including them in the curriculum will help in maximising their use”

“Web 2.0 is what the users are familiar with. It is what users use without knowing it. It’s seamless and natural to them. If librarians don’t keep up with what their users want, the library will be bypassed. It will become obsolete”

“Web 2.0 technologies are embedded in the everyday lives of people and librarians should be well versed in how to use such technologies to communicate to their users, to help their users when they ask and to broaden their user base”

“As an information worker, being able to effectively find useful information on the Internet is absolutely essential”

“Librarians need to be equipped to operate effectively in the 21st century for the survival of the librarian profession. Library clients are tech-savvy in order to be able to offer an efficient service and to attract new clients; librarians must know how to use Web 2.0 tools”

Some of the sentiments echoed by the participants above have also been mentioned by many authors in the literature. All professions now need to be dynamic in adopting Web 2.0 technologies in order to remain abreast and sustain excellence. According to AI-Daihani (2009: 40), libraries expect professionals in their workforce to be equipped with appropriate competencies in Web 2.0 technologies. This means that students in LIS programmes need to have a fresh orientation directed towards developing Web 2.0 competencies and LIS educators need to introduce changes in the content and substance of their curricula. Librarians clearly feel the challenging impact of these technological evolutions, as they see more and more of their services and clientele that were traditionally print-and library-oriented becoming electronic-and market oriented. The Internet has continued to change over the years leading to new

skills and competency requirements (Anyaoku, Orakpor & Ezejiofor, 2012: 31). Olomjobi (2006), pointed out that with the explosive growth of the Internet, library services must also develop in tandem or risk becoming obsolete, and the required changes in the services depend upon the capabilities and motivations of librarians to change and adapt to new methods.

Improving the image of the profession and keeping up-to-date

Some participants were of the opinion that the inclusion of Web 2.0 technologies will improve the image of the LIS profession because the LIS graduates will be knowledgeable and able to compete on the market. According to Wood (2011: 14), library personnel must refocus the vision of what the library is and how it functions. They must be willing to learn about and adapt to the Web 2.0 technologies for use in their libraries. This will call for a complete re-evaluation of what we do and how we do it and a commitment to lifelong learning.

“In the information age that we are living in one needs to have these skills or otherwise he/she will be lost when it comes to being techno savvy”

“As librarians in the 21st century it is important that we keep abreast with technology since our users use it. If our users use it as a platform of communication we must then accommodate them and speak to them on that same platform. How will we be able to help our customers if we are not staying abreast of technology since we should cater for their needs and wants in a medium which is convenient to them”

“It has become the norm for many, but there are those who have not, unfortunately, had exposure to such technologies and should be taught the ins-and-outs, especially if they wish to become librarians who need to keep abreast of modern developments”

“It should be included because the global world has gone digital and LIS needs to keep abreast of the technological advancement”.

“Web 2.0 technologies have a great potential in improving the mind-set of traditional ways of acquiring information. It also promotes self-taught to the advantage of the students and to be exposed to the technological world and lastly, it help students with their academic and personal activities”

Faced with the choice of adapting to the rapidly changing Web 2.0 environment or maintaining the status quo, it should not be a difficult decision for libraries and information professionals to make. It is important that libraries and information professionals understand the potential of Web 2.0 technologies and take advantage of the opportunities available through the use of these technologies to provide innovative and user-centred services to the new wired tech-savvy information users. As the saying goes, “we need to adapt or die. It also lends itself to the development of the library and information services profession as we build upon, not completely eradicate, our foundations to adapt to the changing environment to meet our users’ needs”. This will make for a richer and ever evolving profession rather than a stagnant one (Wood, 2011: 15-16).

Dissemination of information and knowledge and collaboration

Below are the common reasons identified by participants who supported the inclusion of Web 2.0 technologies in the LIS curriculum on the basis that they enhance the dissemination of information which is one of the primary objectives of libraries.

“Libraries are used for information sharing. Web 2.0 tools assist in communication and knowledge sharing. Library users/ people are using those tools more”

“Web 2.0 is a major tool for use in education and for marketing. Promotion to your clients is essential and these tools assist in better access to information and provide platforms in sharing and collaborating information”

“LIS deals with information industry, appropriate technologies for knowledge sharing, information sharing and access should therefore be part of the curriculum”

Web 2.0 has revolutionised the way content is created and the way users access, use and contribute to information. Libraries are increasingly adopting Web 2.0 technologies to design services that allow them to reach users in the virtual space that they could not reach before. This allows librarians to target a segment of users in the population who will never visit the library to use their services, no matter how hard they try. A large part of this population belongs to the generation that grew up with the Internet and they are often known as the digital natives (Foo & Ng, 2008: 3).

Revamping the LIS curriculum to reflect 21st century trends

As library users change and expect new technologies and information, the roles of the library will consequently grow and change. Therefore, it becomes imperative that LIS education change as well, in order to reflect, respond to and anticipate these changes (Cooke, 2011: 2). Below are sentiments echoed by participants in support of change in the LIS curriculum.

“Modern technology has made it essential for librarians to be skilled in Web 2.0 technologies. As users’ needs change, so must training and on-going learning be part of the curriculum”

“Web 2.0 technologies are the way of the future. The various tools can be used by professionals and we need to understand the different ways in which they can be used in order to make the most of it”

“It should be included because nowadays people use compact devices such as cell phones and iPod to access information as opposed to those times when only desktops were used. If it is part of the curriculum, then information professionals will become knowledgeable and even assist people with confidence”

“It should be included because these ought to be applied in libraries therefore we as librarians need the skills which can be obtained from LIS schools”

“Since technology is ever changing and we studying LIS, we will work with information. It is very important for us to know about the latest technology and how to use it and the LIS programme is perfect to teach us about Web 2.0”

Rapid changes and the ever increasing demands on the information professional has placed a tall (and at times impossible) order on education and training, and significantly challenged library schools’ education around the world to produce graduates who are relevant and can thrive in the Library 2.0 environment (Foo & Ng, 2008: 7). Aharony (2008) emphasized that library schools must come up with an upgraded curriculum by introducing a Web 2.0 course. He further explained that, Web 2.0 technologies may be thoroughly taught as a separate course in the LIS curriculum. It will equip the library professionals with skills and competencies that are necessary to design dynamic and modern user oriented services.

According to Noh, Ahn and Choi (2012: 353), universities are making a great effort to be competitive in the knowledge and information society by changing faculty titles and launching appropriate curricula. Universities organize curricula independently based on their own background and resources, while seeking specialization for differentiation from other universities. In this context, LIS departments have also developed and changed their curricula reflecting the changes in the knowledge and information society and developments in information technology. The increasing use of Web 2.0 technologies in the field of LIS makes it incumbent upon the educational programmes to respond to the challenges and demands of this technology (Al-Daihani, 2009: 42).

In Garoufallou and Charitopoulou’s (2012: 212) study, LIS students gave the following reasons in justifying the inclusion of Web 2.0 technologies in the LIS curriculum:

- Enrichment of library services technology
- Useful tools for librarians and librarians will become less depended on computer scientists.

- Leads to collaboration with other Institutions and librarians if they have the skills to use Web 2.0 technologies
- Enrichment of library services technology
- They are sources of information
- Creation of new media, social networks
- Easy management and knowledge circulation
- Makes job pleasant
- Modernization of the LIS profession
- Development of digital library
- Leads to effective, efficient and better services to users
- Helps students with their assignments

According to Garoufallou and Charitopoulou (2012: 211), it is encouraging that students, although they lack professional experience, believe that Web 2.0 tools will be useful for the LIS profession.

4.8.1 Disagreement with the inclusion of Web 2.0 technologies

A follow-up question was asked to probe participants to give reasons for their choice in 4.7. Of the respondents three (3.5%) gave reasons not supporting the inclusion of Web 2.0 technologies in the LIS curriculum. Below are the common reasons singled out.

Academic priority

“I don't think it's a top priority in terms of developing the profession; perhaps in terms of marketing, yes. But people need skills, practical applicable skills and critical thinking to be empowered and do in their work environments”.

“These are ad hoc services which are not necessarily essential for academic progression”.

Whether Web 2.0 technologies become part and parcel of the LIS curricula or not is debatable. The importance of incorporating or teaching Web 2.0 technologies in LIS

schools has been emphasised in the literature. According to Sarrafzadeh, Hazeri and Alavi (2011: 180), Web 2.0 technologies are not only required to be an integral part of the LIS curricula, but it should be applied in the structure of the educational context to support both LIS teaching and learning. As a result, it is a real need for the LIS education system to foster the actual engagement of learners with this new environment in the learning process.

4.9 Conclusion

This chapter presented data from the online questionnaire. The research has shown that the majority of the UWC LIS students are familiar with, and do use Web 2.0 technologies. However, a high percentage indicated no use at all of tools such as RSS feeds, Del.icio.us, Flickr, Podcasts and Viber. LIS students use Web 2.0 technologies for both academic and general reasons and they use the technology for communication with peers and lecturers, for entertainment, keeping up-to-date, knowledge sharing and collaboration among others. A large percentage of the LIS students on the other hand, supported the inclusion of Web 2.0 technologies in the LIS curriculum owing to the huge benefits associated with the technology.

CHAPTER FIVE

PRESENTATION AND INTERPRETATION OF DATA FROM INTERVIEWS AND CONTENT ANALYSIS

5.1 Introduction

This chapter presented and analyzed data that was gathered from the content analysis of the LIS department's Website and documents and key informant interviews. As stated in Chapter three, all the LIS lecturers were selected as key informants and interviewed. Interviews were conducted with lecturers because they were more knowledgeable and in control of the teaching and learning practices and implementers of the curricula. The curricula and the interview data are analysed in the same chapter because, unlike the questionnaire data, the curricula and the interview are purely qualitative data. The presentation of qualitative data according to Patton (2002: 442), should involve a discussion of themes and categories, as well as figures and tables which present various themes.

For details on the questions that were asked, refer to the Interview Guide (Appendix C) and content analysis guide (Appendix D).

5.2 Presentation of data from key informant interviews

This section probed the interviewee's designation within the department, how long the person has been with the department, highest qualification, understanding of the Web 2.0 concept, and general use of Web 2.0 technologies as well as the frequency of use, among others.

5.2.1 Designation, teaching experience and qualifications

There are five full-time academics in the Department of Library and Information Science at UWC. Two of them are senior lecturers, one is an Associate Professor and the others are lecturers. The full-time academics have been lecturing between 12 and 33 years. Only the part-time lecturer has been lecturing for a year. Four of the

interviewees are PhD holders in LIS while two hold masters' degrees also in LIS. One of the two masters' holders is currently studying towards a PhD in LIS. The researcher observed that UWC, like any other higher education institution, requires its academic staff to be highly qualified and experienced.

5.2.2 The concept Web 2.0 technologies

The Interviewees were asked about their understanding of the concept “Web 2.0 technologies”. Their responses demonstrated that they understood the concept. The following are the extracts from the well-expressed interviewee responses:

“Web 2.0 technologies refer to the second version of the Web/Internet, it provides new tools to play with and it enhances processes, communication and delivery” [Interviewee four].

“I do not normally call the tools that I use Web 2.0 technologies but rather I call them discussion forums, chats, email and so on”[Interviewee four].

“Web 2.0 is a catchword but it presents a huge difference to what was called Web 1.0. Web 1.0 was a static Web unlike what the technology affords today, activity, communication, collaboration and interaction all because of an update in technology”[Interviewee two].

“Web 2.0 technologies, is a revolution of the Web technology, characterised by interactivity, freeness and allowing interaction. In other words, it is more democratic” [Interviewee three].

Some of the sentiments which were echoed above by the interviewees are also shared by Murugesan (2007: 34) who noted that, Web 2.0 is also called the wisdom Web, people-centric Web, participative Web, and read/write Web. Web 2.0 harnesses the Web in a more interactive and collaborative manner, emphasizing peer's social interaction and collective intelligence, and presents new opportunities for leveraging the Web and engaging its users more effectively.

5.2.3 Use of Web 2.0 technologies

A question on the use of Web 2.0 technologies was asked to find out if the interviewees use Web 2.0 technologies. Below are the extracts from the participants:

“I do use Web 2.0 technologies and I think many people too use it unknowingly because not everyone understands the term”. For example, WhatsApp uses Web 2.0 technologies. [Interviewee two].

“I do not actively use Web 2.0 technologies but only use the most popular tools for example, WhatsApp, Facebook, Twitter and not Blogs, Facebook just to see what others are saying and doing but to a lesser extent”[Interviewee five].

“I am not interested at all with social media in a personal capacity and as a result I do not use apps like, WhatsApp, Facebook, Twitter and so on, because of time constraints I just do not fathom it, maybe time will be available when I retire. I look at Web 2.0 technologies only as a phenomenon, for example, how politicians use it for campaigns, Obama used it extensively. It however comes with disasters thus I am a private person not willing to tell the world my day to day life”. [Interviewee three].

“I use Web 2.0 technologies all day long, for example, chat for communication, RSS feeds, social media, and blogs to a lesser extent. [Interviewee four].

“Web 2.0 is good but it can also be bad if not wisely used because some people can be marginalised”. It should only be adopted if there are good reasons and not to fall under pressure because others have adopted it due to its fanciness. Focus should be on the domestic problems and not succumb to pressure from Western countries. Web 2.0 technologies make people lazy, for example, Google calendar, docs and so on. It over-takes people and people no longer have time to think”. [Interviewee one].

Responses show that some interviewees make use Web 2.0 technologies while some consciously decide not to use it. A study by Al-Daihani (2009: 48) found that the

majority of the respondents (LIS academics) did not use Web 2.0 technologies. For social networking, it was found that 54.5% of the respondents ‘never’ or ‘rarely use’ Facebook. Social bookmarking tools were also ‘never used’ by 77.3% of the respondents while on the other hand, 65.9% ‘never use’ Google apps. In as far as wikis are concerned, overall, the majority of the respondents (70.4%) are in the categories ‘rarely’ and ‘never use’. While Google docs are an important technology for file sharing, Al-Daihani (2009: 48) discovered from his study that 54.5% of the participants never use it. It is the researcher’s observation that the same reluctance or conscious decision to refrain from using Web 2.0 technologies as discovered by Al-Daihani (2009) can also be identified in the present study as evidenced by responses from some of the key informants.

5.2.4 Web 2.0 technologies used by the key informants in their everyday life

A question was asked to ascertain which Web 2.0 technologies the interviewees had used in their everyday life. The participants indicated that they had used, among others, *YouTube, Twitter, LinkedIn, RSS feeds, Delicious, Google Apps, Facebook, Drop-box, blogs, Flickr, Instagram and WhatsApp.*

5.2.5 General use of Web 2.0 technologies by key informants

This question asked interviewees what they were using Web 2.0 technologies for. Several of the interviewees indicated that they used e-teaching sites to upload assignments, used WhatsApp and Facebook for communication and YouTube to show students educational videos in class. Below are extracts of the well-articulated responses:

“There are tools that I apply and some which I just look at, for example, WhatsApp, Twitter, social bookmarking, Delicious- (I used to use it but due to ownership changes, I had difficulties accessing it); instead of Delicious, I now use Diigo every day and tags. Tagging is similar to indexing in LIS circles. I apply the following Web 2.0 technologies: Google docs to upload, store and share files. I also use Drop-box

but it provides limited space such that once the provided space is used up they want users to buy space but I prefer free resources. I also used to use iGoogle but it has been discontinued; it allowed the customization of the home page. One could have their email, Wikipedia, RSS feeds and so on all on one page. I use blogs for academic purposes, emails (Google apps) to communicate especially with students, and postgraduate students collaborating on various projects. “I would like to use Web 2.0 technologies to share valuable information with colleagues but some are not on Twitter and some are not regular users. Twitter entails that a user has to follow a particular person. People have not understood the value of twitter, I use twitter for sharing academic stuff or re-tweeting interesting articles”. [Interviewee two].

“I use YouTube for teaching, showing students video clips and Google Apps, for storage and communication. I use social media for example. Facebook and Twitter to chat with friends and to pass time. I use LinkedIn to connect with colleagues” [Interviewee one].

“I use Web 2.0 technologies for communication because it is cheaper though to a very lesser extent due to time constrains. For example, Facebook, Twitter, and Flickr as well as LinkedIn to keep in touch with colleagues”. [Interviewee six and five].

The responses from the interviewees showed that most of the participants use the most popular Web 2.0 technologies for example, YouTube, Twitter, Facebook, Google-Apps. A similar study by Sarrafzadeh, Hazeri and Alavi (2011: 184) also arrived at the same reasons for using Web 2.0 technologies by educators just as in this study:

- Google Docs: For file storage and sharing with students
- Chat, SMS: for quick communication, questions and answers‘ sessions, for practicing virtual reference services with student
- Forum: for class discussions
- YouTube: Using YouTube videos as learning materials and to improve level of English among students

- Group blog: for students group assignments
- Library Thing: for teaching cataloguing and classification
- Wiki: for students' assignments
- LIS discussion groups: for keeping update and for communicating with other scholars.

According to the NMC Horizon Report (2014: 8), for educational institutions, social media enables two way dialogues between students, prospective students, educators, and the institution that are less formal than with other media. As social networks continue to flourish, educators are using them as professional communities of practice, as learning communities, and as a platform to share interesting stories about topics students are studying in class. Understanding how social media can be leveraged for social learning is a key skill for teachers, and teacher training programmes are increasingly being expected to include this skill.

5.2.6 Frequency of use

Interviewees were asked to indicate how frequently they use Web 2.0 technologies. Below are the common responses:

“I use Web 2.0 technologies in my daily teaching; it is just my way of doing things for example, Google Apps (Calendar and Docs)” [Interviewee three].

“I use Twitter, LinkedIn, Google drive and WhatsApp every day” [Interviewee two].

“I do not use Web 2.0 technologies often due to time constraints and little interest” [Interviewee one, three, five and six].

Four of the interviewees indicated that they do not use Web 2.0 technologies frequently while the other two academics indicated that they use Web 2.0 technologies regularly for example, Google Apps, YouTube, Twitter and WhatsApp.

5.2.7 Web 2.0 technologies: training and use

This section deals with issues around the actual teaching of Web 2.0 technologies, general and academic use of Web 2.0 technologies by LIS students. The preparedness of the department to teach Web 2.0 technologies is explored in this section too. Preparedness in this case entails having the right physical resources, knowledge and skills/competencies of lecturers and attitude to a changing environment.

5.2.7.1 Teaching Web 2.0 technologies

The participants were asked whether they teach students the use of Web 2.0 technologies. Below are the common responses:

“I do not teach students the use of Web 2.0 technologies but rather I incorporate Web 2.0 technologies in my teaching, for example, YouTube, Google Apps, wikis, and blogs and so on. Consuming Web 2.0 technologies and teaching it is different, students have to be taught how to create videos and games” [Interviewee two].

“Not all modules allow the use of Web 2.0 technologies, LIS schools are drifting away from core values, children spend much time on their devices but they can't read. LIS schools must not run away from core/primary professional issues being attracted by funky issues like Web 2.0 technologies”[Interviewee one].

“Web 2.0 technology skills come naturally and many devices come with manuals. It is easy for students to learn how they work on their own” [Interviewee five and six].

The above responses show that some of the interviewees do not necessarily teach students the use of Web 2.0 technologies but rather they incorporate Web 2.0 technologies in their teaching. Interviewee two however, pointed out that, students should be taught the actual use of Web 2.0 technologies for example, to create videos and games. Aharony (2008) investigated the use and implementation of Web 2.0 technologies in the United States accredited LIS Schools and concluded that only a few schools taught and use Web 2.0 in their curriculum. By examining LIS schools Web sites, she found out that only six schools out of 59 taught the subject termed

Web 2.0 technologies. Fisher, Worley and Fernandez (2012) pointed out that the emergence of Web 2.0 and Social Networking Technologies (STI) as a dominant force for communication and interaction among various groups of people has led to a discussion among the academic community regarding whether or not these technologies are actually effective within the classroom setting. Meanwhile, Shaohua and Peilin (2008) agreed that integrating Web 2.0 technologies into the classroom can increase learners' course satisfaction and interaction levels. On the other hand, Ajjan and Hartshorne (2008) found that teachers' self-efficacy, or their familiarity and self-confidence with Web 2.0 applications, influenced their decisions to deploy Web 2.0 technologies in their classrooms.

5.2.7.2 Resources to teach Web 2.0 technologies

The participants were asked whether the department had the resources needed to teach Web 2.0 technologies. Attitudinal responses to this question are quite strong. Below are the varied responses given by the interviewees:

“There are enough desktops in the departmental lab though not adequate. The departmental computer lab has become small because of an increase in student numbers. Software used to be a major issue but it's now freely available”
[Interviewee three].

“There are no e-book readers or tablets for the department, oftentimes I will bring my personal one to show students”. An evaluation of educational apps which was meant to take place in the library could not because the booking of the venue was a bit difficult due to demand. In other words, not all required resources are available”
[Interviewee two].

“The resources are available within the university as a whole. The most important issue is the “will”. We are willing to embrace Web 2.0 technologies only if there are objectives for doing it. The question, “why are we doing it should be answered”. It should not be done because the world is doing it; that does not help. Unless we have

a sound reason for embracing Web 2.0 technologies, only then can we use it and not succumb to the pressure from voices of the world” [Interviewee one].

“Yes the department has a computer laboratory where students have access to computers and the university library also has computers and an ipad laboratory for students to use.” [Interviewee four, five and six].

Responses from the interviewees indicate that resources are available though not necessarily all that is required as evidenced by the response from interviewee two who noted that he/she has to bring devices from home to show students, for example e-readers and tablets. Some discontent was shown by another interviewee that the department does not have a Facebook page and that the departmental website is dysfunctional. Digital literacy has been deemed critically important to both students and instructors in higher education, but it is widely acknowledged that there is a lack of effective training to ensure that faculty are getting the skills and resources they need to guide students (NMC Horizon Report, 2014: 22). Another facet of this challenge, as further explained by the NMC Horizon Report, is in the attitude shift required of instructors; if they are reluctant to embrace new technologies and the promotion of digital literacy, students will not see the importance of these competencies to succeed in the workforce.

5.2.7.3 General use of Web 2.0 technologies by LIS students

Below are responses to the question that probed the general use of Web 2.0 technologies by LIS students:

“They use it in a personal capacity, for example, Facebook and Twitter to chat with friends, and downloading songs on YouTube. All they do is to socialise” [Interviewee five].

“Some students do not use Web 2.0 technologies for many reasons, some think it is a fad; some do not have time, some due to cultural and religious beliefs” [Interviewee one].

“Students use Web 2.0 for socialising, making friends, entertainment, academics (Research) and communication because it is cheaper” [Interviewee three and four].

“They use it for both personal and academic purposes, some use it to access the catalogue and search for journals. They also use it for communication with peers” [Interviewee two].

“Some students are not familiar with the available Web 2.0 tools; they only use Twitter and Facebook which are popular”. [Interviewee five].

Some of the reasons noted by the interviewees concur with the findings of Garoufallou and Charitopoulou (2012: 210) who concluded that lecturers feel that social media have a strong presence in students’ everyday life, and sometimes “these media have overtaken their lives”. It irritates lecturers sometimes entering a lecture room and looking at students chatting on Facebook and watching videos. It is like entering an Internet cafe’. The above responses, which point to entertainment, socialising, and communication, are in agreement with Blumer and Katz’s (1974) UGT which also speaks about entertainment, communication, and passing time as reasons for the use of various technologies. Issues around entertainment, the passing of time and socialising are the same reasons that were also noted in 4.4.1.

Fisher, Worley and Fernandez (2012) pointed out that; Web 2.0 technologies allow people to communicate, interact, and engage in discussions on topics across all genres and without geographical limitation. Social networking sites such as Facebook, Twitter and YouTube have been integrated into the daily life for many students, and the growth and reach of Web 2.0 and social networking technology have skyrocketed across generations and even continents. The current generation of tech-savvy students possesses different characteristics than their predecessors and requires different types of attention to remain connected to the learning process.

5.2.7.4 Academic use of Web 2.0 technologies by LIS students

Interviewees were asked what they thought LIS students use Web 2.0 technologies academically for. Below are the common responses to the question:

“Students do not use Web 2.0 technologies for academic purposes; they can only use it when forced to by lecturers” [Interviewee one].

“Students use Google drive to analyse data and it makes the research methods course easier, it makes sharing information and knowledge easier and seamless” [Interviewee three].

“Students use Web 2.0 technologies to communicate with lecturers and to turn-in their assignments as well as collaborating with their peers on assignments” [Interviewee two, five, four and six].

Most of the interviewees are of the opinion that LIS students make use of Web 2.0 technologies for academic purposes. A new wave of Internet technologies called Web 2.0 technologies have emerged and are widely perceived as having potential to enhance further learning and sharing of information among learners and teachers (Hartshorne & Ajjan, 2009). In a study exploring how students use social media, Wang, Chen and Liang (2011) reported that students use social media tools for many purposes such as access to information, group discussion and resource sharing. This assertion is however in contrast with the views of one of the key informants who believes that students can use Web 2.0 technologies when forced to do so by academics.

The emergence of Web 2.0 technologies coupled with their subsequent adoption by universities has indisputably brought about appealing and efficient ways of carrying out teaching and learning activities. Sarrafzadeh, Hazeri and Alavi (2011) are convinced that technologies such as blogs, Twitter and Facebook facilitate sharing of ideas, re-use and publication of study content and also provide commentaries and links to relevant information resources that lecturers and students need most. Web 2.0

technologies are also said to allow students' interaction with their classmates, lecturers and even experts from outside their educational institution.

For educators, as noted by Yuen, Yaoyuneyong and Yuen (2011: 111), alongside the exciting potential of Web 2.0 technologies, there is also the knowledge that students have been changing, whether or not we can keep up. Modern students, who are often “digital native” learners, have already found and integrated many Web 2.0 tools into their daily lives.

5.2.7.5 Incorporation of Web 2.0 technologies in the curriculum

This section probed interviewees on their incorporation of Web 2.0 technologies in their various courses and their views on whether Web 2.0 technology training should be part of the LIS curriculum.

Incorporation of Web 2.0 technologies

Interviewees were asked how they have incorporated Web 2.0 technologies into the various modules they teach. Extracts of their responses are below:

“Some subjects cannot be taught using Web 2.0 technologies though students can use Google apps to share information” [Interviewee one].

“I teach students basic classification, however, this module uses paper based course material but I am aware of Web Dewey. Students for example are not only taught about blogs, but they are also taught how to create one as well as bookmarks and how to add tags. Their assessments include, be it creation of a blog, wiki or podcast and it varies from time to time. At master’s level in 2014 students were introduced to gaming in the Knowledge Management Tools and Processes module. Students are also taught to use LinkedIn which they will need when they graduate. Many other technologies are covered in detail in the Information literacy course where they learn about references. They also use info-graphics to create a poster. Students have been taught the use of Google maps, Picasa, Flickr, RSS feeds and so on. Technology has

to be infused in the subjects or courses being taught. For example, the cataloguing module should now look at how one can catalogue open source material” [Interviewee two].

“I use YouTube extensively because it brings different voices to the classroom and it goes beyond the classroom” [Interviewee four].

“I encourage students to use Google drive all the time to share information hence it is a safe way of storing important documents to avoid losing them and viruses. Students also use Wikipedia but they are made aware of how they can use it correctly. Wikipedia is important for science and technology. Lecturers use e-teaching which also include Web 2.0 technology. Students in turn use Web 2.0 technologies for assessments, for example; they use blogs to write up important tasks” [Interviewee two].

“Web 2.0 technologies fit very well in the information literacy course as well as information sources and retrieval” [Interviewee six].

The above responses have demonstrated that lecturers prescribe that LIS students use Web 2.0 technologies to tackle various assignments and projects in different modules and at different levels. Responses show that lectures use YouTube, Google Apps, blogs and wikis to enhance teaching. Interviewee four pointed out that he/she uses YouTube to actually bring a new voice to the classroom. According to Garoufallou and Charitopoulou (2012: 206), it is evident that there are tools such as blogs that could assist teaching, enhance pedagogical methods of learning and augment collaboration, participation and creativity among teachers and students.

Academic staff, as explained by Minishi-Majanja (2009: 2), need to be cognizant of and use a new variety of learning styles, such as active learning, learning to learn, collaborative learning, problem-solving, role playing, and so on; which are easily facilitated by ICTs. They (lecturers), as explained further by Minishi- Majanja, need to adjust their instructional methods to incorporate the use of ICT-based tools such as

tutorial software/courseware, and learn to develop content for each course by increasingly using ICTs as integrated instructional devices that foster greater hands-on learning, richer simulations, provision of exploratory environments and flexi-time learning.

The use and incorporation of Web 2.0 technologies is even more beneficial for LIS schools because the library work place is increasingly becoming a digital environment. For example, Web 2.0 technologies are being used by librarians to facilitate access to information, information transfer and to promote knowledge sharing amongst library staff and clients (Grosbeck, 2009: 478). The availability of various Web 2.0 technologies implies that lecturers and students have a wide choice of technologies that they can use with little or no cost, and more significantly, with little or no training. The fact that technology is ever-evolving has a direct bearing on library practices and subsequently on LIS Education. Consequently, library schools have to periodically undergo the rigorous work of curriculum revision and in the process try to maintain pace with technological innovations (Srivastava, 2009: 375).

Modules which include aspects of Web 2.0 technologies

This question gathered data on the number of modules which include aspects of Web 2.0 technologies. Below are extracts of the responses from the participants:

“Courses where Web 2.0 has been incorporated include: ICT applications at Undergraduate, Post graduate diploma and at Master’s level. This course has changed over time because of the changes in technology. There is need to keep up the pace. In the ICT application module, students are taught Web 2.0 technologies use and how they can be applied in libraries” [Interviewee two].

“I am disappointed with the fact that the department did not grab the opportunity to offer/teach digital curation module an opportunity UCT embraced” [Interviewee three].

“No specific Web 2.0 technologies are taught to students but they are rather used to support learning and sharing knowledge and information” [Interviewee one and five].

A study by Sawant (2012: 12) in Indian LIS education found that, more than half of the instructors mentioned that they have components of Web 2.0 in their syllabi while 17.6% of the respondents mentioned that at present there is no Web 2.0 component in their syllabus, but that they would like to integrate it in the future. In the present study, there is no module termed “Web 2.0”, however, issues around Web 2.0 and Library 2.0 are taught in the ICT module, as mentioned by one of the interviewees, and proved through an analysis of the LIS curriculum (to be discussed later in this chapter).

Inclusion of Web 2.0 technologies in LIS curriculum

Interviewees were asked if they support the inclusion of Web 2.0 technology training in the LIS curriculum. Their responses are given below:

“LIS schools are drifting away from core values, children spend much time on their devices but they can’t read. Web 2.0 should just enhance what is currently being done by just simplifying the processes. All students should have a great understanding of Web 2.0 technologies not only LIS students. LIS students need more knowledge but not technological knowledge. Students and LIS schools should rather focus more on the professional issues than technology. LIS schools must not run away from core/primary professional issues being attracted by funky issues like Web 2.0 technologies. Web 2.0 should be incorporated in the curriculum only if it advances the interests of the profession and takes it forward as well as enhances it, that is, if it improves service delivery. It should only be adopted if there are good reasons and not to fall under pressure because others have adopted it due to its fanciness. Focus should be on the domestic problems and not succumb to pressure from Western countries [Interviewee one].

“Web 2.0 technologies should be incorporated in the curriculum, not as a separate module but should be infused in all modules, for example, teaching marketing and communication one has to make use of emerging technologies. People would want to embrace technology only if it improves and enhances and simplifies processes, change is meaningless if it doesn’t benefit the user [Interviewee three].

“Technological issues cannot be avoided because it is there and have to be incorporated into the courses offered. e-books, mobile technology, tablet computing are issues we cannot ignore. The (NMC) Horizon report, IFLA Trend report and so on, are all talking about the same issues and there is no way they can be ignored. Digital curation is a big wave coming because of the demand in research. Digital curation will make research easily accessible. It is a current master’s course at UCT” [Interviewee two].

“Students would like to see Web 2.0 technologies incorporated in their learning” [Interviewee five].

“There is a lot of value in the use of Web 2.0 technologies as long as one fully understands it hence it should be included. It also paints a good picture on the profession” [Interviewee six].

The researcher observed some agreement from the participants with regards to the inclusion of Web 2.0 technologies in the LIS curriculum. The responses given by the interviewees concur with the findings in Chapter four where LIS students, to a large extent agreed to the inclusion of Web 2.0 technologies in the LIS curriculum. However, there is also reservation about whether it is a priority or a secondary issue. According to Al-Daihani (2009: 42), the increasing use of Web 2.0 technologies in the field of LIS makes it incumbent upon the educational programmes to respond to the challenges and demands of this technology.

Curriculum content, according to Tumuhairwe (2013: 1), is the core of the reform, and in many instances LIS schools and departments revise or re-design their curricula

in such a way that some traditional courses disappear as new ones come in to cater for the emerging issues and trends. Many LIS educators acknowledge that it is their responsibility to steer the profession towards new directions in response to the globally and locally changing information environment while simultaneously maintaining relevance (Minishi-Majanja, 2009: 2). The advent of the Internet, knowledge management, Web 2.0 and Library 2.0 through the 1990s and 2000s, according to Fool and Ng (2008: 6), have indeed posed a significance challenge for library schools to keep pace with change and to ensure that the education of information professionals be relevant and kept up to date and ensure maximum employability and effectiveness for the employers. In the modern learning environment, it is important that LIS schools integrate Library 2.0 and Web 2.0 applications into the mainstream curriculum, since knowledge services are managed and handled in terms of changes, developments and issues brought about by these innovations (Makori, Odini & Ojiambo, 2013: 588).

5.2.8 Benefits and challenges of Web 2.0 technologies

In this section interviewees were asked to highlight the academic benefits of Web 2.0 technologies for LIS. The last question of this section touched on the challenges associated with the use of Web 2.0 technologies.

Benefits of Web 2.0 technologies

A question was asked to probe the benefits that come with Web 2.0 technologies in the academic spheres. Below are extracts from the participants' responses:

“Web 2.0 technologies promote community of practice” [Interviewee one].

“It is the culture of the LIS profession, collaboration, sharing information, it removes geographical boundaries” [Interviewee three].

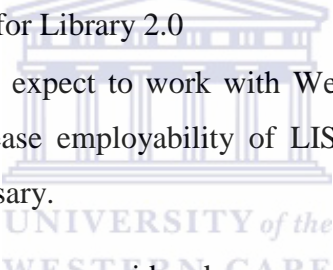
“Web 2.0 technologies come with huge benefits though it depends which tool or platform one decides to use” [Interviewee six].

“Web 2.0 technologies provide for real time information sharing, it is convenient and fairly cheap” [Interviewee two].

“Students can learn on their own due to their ease of use” [Interviewee five and four]

Responses given by the participants attest to the fact that Web 2.0 technologies come with huge benefits for the LIS profession. Even though the pedagogical benefits of integrating Web 2.0 in the classroom are widely acknowledged, Bertolo (2008), discovered that teacher attitudes towards Web 2.0 tools remains mixed.

In a similar study by Sarrafzadeh, Hazeri and Alavi (2011: 184), academics listed the following benefits of Web 2.0 technologies:

- 
- Preparing students for Library 2.0
 - LIS graduates may expect to work with Web 2.0 tools in their workplaces. Therefore, to increase employability of LIS students, teaching how to use these tools is necessary.
 - Since Web 2.0 tools are considered as source of information and knowledge, teaching them to LIS students will increase their information literacy skills.
 - Improving the image of LIS profession
 - Incorporating Web 2.0 tools in LIS education can give LIS a better image and absorb more students to LIS programmes. Students will have a better feeling about their course with using these tools. There was a warning comment from one of respondents stating that not using these tools can make the LIS profession isolated.

The use of Web 2.0 technologies is even more beneficial for LIS schools because the library work place is increasingly becoming a digital environment. For example, Web 2.0 technologies are being used by librarians to facilitate access to information, information transfer and to promote knowledge sharing amongst library staff and

clients (Grosseck, 2009: 478). It is important to note that almost all the participants in the present study highlighted the benefits of Web 2.0 technologies although not everyone exploited these benefits.

Challenges associated with Web 2.0 technologies

Lecturers were asked what they understood as the challenges to the use of Web 2.0 technologies in everyday life and in the academic context. Below are extracts from their responses:

“Web 2.0 should be used to benefit students though it comes with negative consequences for example; it promotes plagiarism (Cut and paste). [Interviewee three].

Some lecturers were exposed to technology quite late. The average age of lectures in the department is 56 years and as a result some of the staff members are not as driven when it comes to technological issues [Interviewee six].

“One of the major disadvantages of Web 2.0 technologies lies in its lack of quality control and as a result misinformation takes place. Another challenge is that it causes distractions. Educators should up-skill, in other words, they should get training to update their current skills” [Interviewee five].

“It is however, time consuming and the battery can run out and power-cuts can also play a role” [Interviewee one].

“Some of Web 2.0 technologies disadvantages include the fact that it is expensive to acquire devices for example, tablets, smart phones or have no Internet at home etc. Some people will not adopt Web 2.0 due to attitude in combination with fear and priority. If people do not understand the technology they can easily dismiss it. Fear will only come due to lack of skills [Interviewee two].

While Web 2.0 technologies come with huge benefits, there are also various challenges associated with them based on the responses from the interviewees above.

The primary challenges are related to the cost of acquiring the devices and of lack of quality control (of information/Web content). The challenges of using Web 2.0 technologies which were discovered in the present study are similar to the findings by Sarrafzadeh, Hazeri and Alavi (2011: 184). Their study identified students' lack of access to devices, religious reasons, lack of technical support, limited time, slow Internet and lack of training as challenges to the use of Web 2.0 technologies; some sentiments also echoed in the present study. In another similar study by Sawant (2012: 12), 64.7% of the respondents felt that lack of infrastructure and lack of maintenance of computers and security issues were the main problems in teaching Web 2.0. In addition to this, a lack of training programmes for instructors to use/teach Web 2.0 tools was found to be the main problem.

5.2.9 Summary

This section of Chapter five presented data gathered through interviewing academics (key informants) in the LIS department. It is safe to conclude that, in as much as many of the academics do not teach Web 2.0 technologies they make use of them in their classrooms; highly mentioned examples includes: YouTube and Google Apps. Despite all key informants yielding to the benefits of Web 2.0 technologies, not all agreed to their inclusion in the LIS curriculum. It was highlighted that Web 2.0 technologies come with challenges, among them, the technology promotes plagiarism because it allows users to cut and paste; lacks quality control; and batteries can run-out. In the absence of power it becomes difficult to recharge and devices used to access the technology is expensive for some users. Most of the responses from the interviewees are in support of the inclusion of Web 2.0 technologies in LIS curriculum, sentiments also emphasised in the literature.

5.3 Presentation of data from content analysis

As indicated in Chapter Three, the researcher analysed the curricula of the LIS Department in a bid to establish if Web 2.0 technologies are embedded in the curricula. The researcher analysed the UWC departmental Website, some course

outlines, and assignment tasks, among others, to identify modules that include Web 2.0 technology aspects, guided by a set of questions which are attached in Appendix D. See Appendix G for a composite list of identified Web 2.0 technologies in the LIS curriculum at UWC’s LIS department.

5.3.1 Courses that include Web 2.0 technology aspects

While there is no specific module termed “Web 2.0 technologies”, issues around Web 2.0 are embedded in certain modules. Below in Table 4 are extracts from the curriculum and assignments which directly deal with Web 2.0 technologies.

<i>Table 4. Courses that explicitly mention Web 2.0 technology aspects</i>	
Programme	Modules involving Web 2.0 technologies
Undergraduate (BLIS)	<p>1. Library Science 121: Information Literacy - this is a first year module and in one of the assignments, students are given an array of questions where they have to choose one which they will use throughout the semester for the weekly exercises. Two of the topics have to do with social media:</p> <ol style="list-style-type: none"> 1. Discuss the impact of social media on South African youth. 2. Is social media a mere distraction or can it be useful in higher education? Discuss. 3. Students are also required to watch a video on YouTube on how to evaluate information sources. <p>2. INF 411: ICT applications in LIS, in this 4th year module students should be able to demonstrate an awareness of current</p>

developments in ICT (podcasting, blogging, RSS, internet filtering e-books, QR codes, etc) that affects LIS.

Main content of the module with Web 2.0 aspects

- Introduction to Web 2.0 and library 2.0
- Electronic books; podcasts; weblogs;
- RSS; wiki; Twitter; QR codes
- Mobile technologies

Podcast project: students are required to conduct and record an interview with fellow students, lecturers or librarians. The interview should be 10 minutes long after editing and should have some music added while ensuring that noise and irrelevant content is eliminated.

3. INF 412: World Wide Web & Internet - In this 4th year module students are given exercises which provide them with an opportunity to use tools learnt in class. Among others, students are required to create a website guided by the assessment criteria distributed at the start of the assignment.

Below is an exercise given to students for the INF 412 module:

- What is a ning? Provide one example of a ning.
- According to research completed by World Wide Worx <http://www.worldworx.com/wp-content/uploads/2012/07/Exec-Summary-The-Mobile-Internet-in-SA-2012.pdf>, which service provider experienced the biggest increase in instant messaging?
- Set up a social bookmarking site either on Delicious, Digg, or StumbleUpon and start saving your own favourite bookmarks. Provide me with your URL so that I can view

	<p>your bookmarks.</p> <ul style="list-style-type: none"> • What do Zotero, OttoBib, BibeMe have in common and how are they different? • What is Pinterest? How could it be used educationally?
Postgraduate Diploma (PGDipLIS)	<p><i>ICT Applications in LIS</i>, in this module, students are taught to create and use social media tools such as blogs or wikis. The module focuses on Library 2.0, Web 2.0, Web page design and management as well as digitization.</p>
Master's (MLIS)	<ul style="list-style-type: none"> • <i>ICT Trends & Applications in LIS</i>, this module teaches students the value and application of new ICTs for libraries, for example, weblogs, RSS and wikis, e-books, and so on. • <i>Knowledge Management: Tools & Processes</i> - in this module students are required to blog weekly reflecting on the readings or lecture of that week and to create a knowledge management website for a company of your choice.

It is important to note that while there is less mention of Web 2.0 technologies in other LIS modules, two of the key informants, apart from those teaching the abovementioned modules, pointed out that they also make use of Web 2.0 technologies as noted in 5.2.4 above for example, Google drive, YouTube, RSS feeds and WhatsApp, among others.

5.3.2 Level at which students are introduced to Web 2.0 technologies

Undergraduate students enrolled for the BLIS are introduced to Web 2.0 technologies in their first year and fourth year in the following modules: Library Science 121: Information literacy, INF 411: ICT applications in LIS and INF 412: World Wide Web. In both the MLIS and PGDipLis students are introduced to aspects of Web 2.0

technologies. The inclusion of an ICT component in the undergraduate LIS curriculum, according to Makori, Odini and Ojiambo (2013: 589), has become critical in Kenyan universities. There is increased integration of ICT courses in the LIS curriculum in Kenya, as exemplified by Kenyatta University and Moi University in 2010. UCT (2015) offers a module with Web 2.0 aspects embedded in their PGDipLis programme, while the UP (2015) offers a module embedded with Web 2.0 aspects at masters level. This is according to data obtained on their websites detailing course descriptors.

5.3.3 Main Web 2.0 technologies in the LIS curriculum

The following Web 2.0 technologies are predominantly mentioned in the LIS curriculum: Really Simple Syndication (RSS), Twitter, weblogs, wikis, and YouTube. This result concurs with the responses given by most of the lecturers who noted that they use YouTube, wikis and blogs in their teaching. In a similar study, Bawden et al (2007: 17-18) found that, at City University London, Web 2.0 issues are appearing in many, if not most modules of the library / information courses.

5.3.4 Tasks LIS students are required to perform using Web 2.0 technologies

Undergraduate students enrolled for the BLIS are given various tasks/assignments to complete using Web 2.0 technologies as mentioned in 5.3.1. In their ICT applications in LIS module, students are required to set up a social bookmarking site either on Delicious, Digg, or StumbleUpon, create a podcast and answer questions on specific Web 2.0 applications. At postgraduate level (MLIS and PGDipLIS), the ICT applications module specifies that students collaborate on a project/s and create a Website/blog for a specific audience.

Students are also required to create a Twitter account which they will use to reflect on what they are learning in class in their weekly tweets. The ICT module also requires students to create a group wiki in which they collaborate with other students. Lastly, it is required of students to create a blog where they reflect on their course and related

ideas each week. The Knowledge Management Tools and Processes module has a task where students are also required to create a Website and reflect on the various topics on knowledge management which should include videos downloaded from YouTube and other sources. In 2014, students were asked to create games which users can play in the library, also known as gaming.

5.3.5 Separate module for Web 2.0 technologies

There is no separate module that deals with Web 2.0 technologies but the Information and Communication Technologies module deals with issues around social media, Web 2.0 technologies and Library 2.0 and it is included in the undergraduate degree, post graduate diploma and masters' programme. In a study investigating Web 2.0 adoption in the LIS curriculum, out of the 59 accredited LIS schools in the United States as per the information on their Websites, only six teach Web 2.0. (Aharony, 2008). Six of the 12 schools that responded to the email survey do not offer any modules that deal with Web 2.0; five of them have programmes that do not offer a specific course on Web 2.0 but include related issues.

According to Foo and Ng (2008: 9-10), it is proposed that the best way to teach Web 2.0/Library 2.0 is not through an individual dedicated subject as seemingly suggested by Aharony (2008). The first option is effectively a Web 2.0/ Library 2.0 (basic foundation) course which is likely to be insufficient to cover the breadth of this development. A closer look at the LIS curricula shows that LIS schools have introduced modules such as Web page design, Digital libraries, Web architecture and multimedia, Web programming, Communication in electronic environments, Electronic publishing on the Web, eCommunities: analysis and design of online interaction, from which one could conclude that it is inevitable via these modules that students can be taught Web 2.0 and social media applications and services (Garoufallou & Charitopoulou, 2012: 203).

5.3.6 Summary

This section has shown that while there is no module termed “Web 2.0”, various Web 2.0 technologies are embedded in the ICT applications module both at undergraduate and postgraduate level. Many researchers have argued that LIS curricula need to be changed and new courses created to reflect the changes in libraries and information centers. Expanding the LIS curriculum by introducing a Web 2.0 module may improve the image of LIS, and more importantly enable students to acquire skills that will match the market needs, and to cope with rapid changes in the information landscape.

5.4 Conclusion

This chapter presented data gathered through interviewing lecturers selected as key informants as well as data gathered through analysing the curriculum documents, assignments and departmental Web site. Interviews with lecturers provided answers to issues around the use of Web 2.0 technologies by LIS students, incorporation and inclusion of Web 2.0 technology concepts in the LIS curriculum, benefits of Web 2.0 technologies as well as the challenges associated with the use and teaching of Web 2.0 technologies.

Content analysis dealt with scrutinizing both undergraduate and postgraduate curriculum documents, closely looking at the presence of Web 2.0 technology concepts. Many researchers have argued that LIS curricula need to be overhauled thereby introducing new courses which reflect prevailing market needs as well as improve the image of the LIS profession. The following chapter presents a discussion of the research findings, recommendations and conclusion.

Chapter six

Discussion of Findings, Recommendations and Conclusion

6.1 Introduction

The two previous chapters presented data gathered from the questionnaire, key informant interviews as well as content analysis of the LIS curriculum. This chapter will provide a discussion of the research findings on the use of Web 2.0 technologies by LIS students at UWC's LIS department. This will be achieved by triangulating results from the online questionnaire, key informant interviews and content analysis of the LIS curriculum. The researcher will also compare findings of this research with similar studies in the literature. The Uses and Gratifications Theory will play an important role in providing meaning to the research findings. It is also in this chapter where recommendations are made and conclusions drawn.

6.2 Research questions

The study attempted to answer the following five research questions that were identified in Chapter one:

- Which Web 2.0 technologies are used the most by LIS students?
- What are LIS students using Web 2.0 technologies for?
- How is the LIS curriculum crafted to include training on Web 2.0 technologies?
- What benefits (gratifications) do LIS students derive from the use of Web 2.0 technologies?
- Which Web 2.0 technologies are LIS students being taught?

6.2.1. Which Web 2.0 technologies do LIS students use the most?

Since its inception, social media has attracted millions of users, many of whom have integrated these sites into their daily practices. Results from this study revealed that,

more than 72% of the LIS students do have accounts on the following Web 2.0 sites: YouTube, Skype, Google Apps, WhatsApp, Twitter and Facebook. Furthermore, more than 60% of the LIS students use tools such as Facebook, WhatsApp and Google Apps daily while over 50% use Twitter and YouTube on a weekly basis. It can therefore be safely concluded that LIS students use, YouTube, Google Apps, WhatsApp, Twitter and Facebook the most. A similar study in Greece by Garoufallou and Charitopoulou (2011: 494) found that, Facebook followed by YouTube were the leading Web 2.0 sites by Greek LIS students.

Data gathered from the present study showed that 96.3% of the LIS students have an account on Facebook. This result, showing high usage of Facebook amongst students concurs with the findings of Barnet et al. (2010: 7), who, in a similar study at Loughborough University in the UK, discovered that 96% of students used Facebook. Findings of this research aligns with the results of a similar study by the World Wide Worx and Student Brands (2013) in South Africa which clearly demonstrated that, Facebook is the universal social networking site for students, with 96% of respondents using it, while Twitter is used by 70% of respondents. Facebook, as explained by Zaremohzzabieh, Abu, Omar, Bolong and Kamarudin (2014: 107), has become an essential part of almost every university student's daily life, and a large number of students seem to derive benefits from using Facebook to exchange information for educational goals, make friends, and for other activities. Facebook is one of the most popularly accessed social networks and has over 500 million registered users, hence it has the potential to become an ally in the teaching and learning process. If properly used, Facebook allows the formation of groups with common interests, enables the exchange of information, and stimulates the search for knowledge (De Vargas, De Lara, Gonçalves, Das Neves & Mello-Carpes, 2014: 273).

LIS academics recommend students to use Web 2.0 technologies for example, YouTube, Twitter and Google Apps to accomplish academic tasks/assignments as discovered during content analysis and key informant interviews. This plays a part in students adopting Web 2.0 technologies. An analysis of the curriculum documents

showed that the ICT Trends and Applications module requires postgraduate students to reflect on their lectures every week and tweet their reflections as well as comment on tweets sent by fellow students. Regarding the use of YouTube and Google Apps in the classroom two of the LIS academics pointed out that:

“I use YouTube extensively because it brings different voices to the classroom and it goes beyond the classroom” [Interviewee four].

“I encourage students to use Google drive all the time to share information hence it is a safe way of storing important documents to avoid losing them and viruses” [Interviewee two].

6.2.2 What do LIS students use Web 2.0 technologies for?

It has been highlighted in this research that LIS students use Web 2.0 technologies for both academic and general purposes. In as far as the general use of Web 2.0 technologies is concerned, over 80% of the LIS students use Web 2.0 technologies for entertainment, keeping up-to-date, and meeting people as well as for communication with peers and lecturers. In addition, between 56% and 69% of the LIS students use Web 2.0 technologies to pass the time and also for relaxing and socialising. It is surprising that, 80% of the LIS students indicated the use of Web 2.0 technologies for entertainment while on the other hand between 56% and 69% indicated that they use it to pass the time and for relaxing, reasons similar to entertainment. This discrepancy came as a result of the questionnaire question which allowed participants to choose more than one of the available reasons for using Web 2.0 technologies. To provide meaning to these findings, Blumer and Katz's (1974) UGT summarised some of the common reasons for media consumption, among others, information seeking, passing the time, relaxation, as a communication utility, for integration, social interaction as well as entertainment.

LIS students also use Web 2.0 technologies for academic purposes. Results from this study clearly showed that more than 67% of the LIS students use Web 2.0

technologies academically for knowledge sharing with fellow students (96%), collaborative authoring (67%), communication with peers and lecturers (96%), information seeking/ research (97%), assignments (76%) as well as to remain abreast of technology (76%). A similar Zimbabwean study conducted by Matingwini (2014: 66) found that the majority of students (75%) indicated that, they had used Web 2.0 tools to search for scholarly information, 71% used the tools for communication, 64% used them for sharing files, and 46% received course materials from lecturers using the tools.

An analysis of the curriculum documents revealed academic assignments where students are required to collaborate on projects using Web 2.0 technologies, for example using Google Apps and wikis. Collaboration entails that they will have to communicate with each other and this can only be achieved efficiently, quickly and cheaply through the use of Web 2.0 technologies, for example, WhatsApp or Google-talk group chats. Interviews with key informants revealed that indeed LIS students use Web 2.0 technologies for both general and academic purposes. The following are extracts from the interviewees highlighting both academic and general reasons for use of Web 2.0 technologies by LIS students:

“Students use Web 2.0 for socialising, making friends, entertainment, academics (Research) and communication because it is cheaper”
[Interviewee three and four].

“They use it in a personal capacity, for example, Facebook and Twitter to chat with friends, and downloading songs on YouTube” [Interviewee five].

“They use it for both personal and academic purposes, some use it to access the catalogue and search for journals. They also use it for communication with peers” [Interviewee two].

“Students use Google drive to analyse data and it makes the research methods course easier, it makes sharing information and knowledge easier and seamless” [Interviewee three].

Web 2.0 is evident in an emerging suite of applications that are interactive, context-rich, and easy to use. The explosion of user-generated content on the Internet points to the immense potential of Web 2.0 technologies in enriching communication, enabling collaboration, and fostering innovation at an unprecedented scale (Chua & Goh, 2010: 203).

6.2.3 How is the LIS curriculum crafted to include training on Web 2.0 technologies?

The curriculum and pedagogy of LIS education need to evolve in order to meet new expectations in the 21st century. Many researchers, as highlighted by Noh, Ahn and Choi (2012: 349), have argued that LIS curricula need to be changed and new courses created to reflect the changes in libraries and information centers. Studies advocating changes in curriculum start from the logic that curricula should be changed constantly to produce future librarians who can adapt to changes in the external environment as the library environment changes rapidly due to information technology development (Noh, Ahn & Choi, 2012: 349-350).

The same sentiments were echoed by Srivastava (2009: 375) who suggested that library schools have to periodically undergo the rigorous work of curriculum revision and in the process try to maintain pace with technological innovations. Higher education, according to Hicks and Graber (2010), needs to adapt to the new realities that inform key areas of their work. Information realities and student realities have changed considerably and it is important that the shifts technology brings are fully understood.

Analysis of the curriculum documents and assignments as well as interviews with key informants in the present study revealed that, while a module entitled “Web 2.0” does

not exist, elements of Web 2.0 technologies are embedded in some of the LIS modules. Analysed curriculum documents showed that the following BLIS modules have aspects of Web 2.0 embedded in them: LIB 121: Information literacy, INF 411: ICT applications in LIS and INF 412: World Wide Web. The ICT Trends & Applications in LIS is one of the modules where Web 2.0 aspects are embedded and it is offered at both undergraduate (BLIS) and postgraduate (PGDipLIS and MLIS) levels. The following Web 2.0 technologies are predominantly mentioned in the LIS curriculum: Really Simple Syndication (RSS), Twitter, weblogs, wikis, and YouTube. As mentioned in Chapter five, students at both undergraduate and postgraduate level are required to accomplish several assignments/projects using prescribed Web 2.0 technologies, for example, MLIS students are required to create a wiki, Twitter account and blog in the ICT Trends and Applications in LIS module.

Interviewee one and five indicated that, “there are no specific Web 2.0 technologies taught to students but they are rather used to support learning and sharing knowledge and information”. This assertion is, however, in contrast with the sentiment echoed by interviewee two below, explaining the incorporation of Web 2.0 technologies in the various LIS programmes.

“Courses where Web 2.0 has been incorporated include: ICT application at Undergraduate, Post graduate diploma and at Master’s level. This course has changed over time because of the changes in technology. There is a need to keep up the pace. In the ICT applications module, students are taught Web 2.0 technologies use and how they can be applied in libraries”

Of the six interviewed academics, five agreed to the inclusion of Web 2.0 technologies in the LIS curriculum. Below are the expressed reasons:

“Technological issues cannot be avoided because it is there and has to be incorporated into the courses offered. E-books, mobile technology, tablet computing are issues we cannot be able to ignore. The Horizon, Trend reports and so on, are all talking about the same issues and there is no way they can

be ignored. Digital curation is a big wave coming because of the demand in research” [Interviewee two].

“Web 2.0 technologies should be incorporated in the curriculum, not as a separate module but should be infused in all modules” [Interviewee three].

Students would like to see Web 2.0 technologies incorporated in their learning” [Interviewee five].

There is a lot of value in the use of Web 2.0 technologies as long as one fully understands it hence it should be included. It also paints a good picture on the profession” [Interviewee six].

Interviewee three pointed out that, “Web 2.0 technologies should be incorporated in the curriculum, not as a separate module but should be infused in all modules, for example, teaching marketing and communication one has to make use of emerging technologies”. Web 2.0 as highlighted by one of the interviewees, “should be incorporated in the curriculum only if it advances the interests of the profession and take it forward as well as enhance it, that is, if it improves service delivery”.

However, interviewee one does not wholly subscribe to notion of Web 2.0 being important for the LIS curriculum and sees LIS schools as drifting away from “core/primary” professional issues being attracted by “funky issues” like Web 2.0 technologies. This assertion is contrary to the findings of the online questionnaire where LIS students were asked if they thought that Web 2.0 technologies should be included in the LIS curriculum. Eighty-one (95.2 %) would like Web 2.0 technologies to be included in the curriculum and only three (3.5%) share the same sentiments with one of the academics to not prioritise Web 2.0 for the LIS curriculum.

Well-articulated reasons gathered from questionnaire supporting the inclusion of Web 2.0 technologies by LIS students included that, “since technology is ever changing and we are studying LIS, we will work with information. It is very important for us to

know about the latest technology and how to use it and the LIS programme is perfect to teach us about Web 2.0 and modern technology has made it essential for librarians to be skilled in Web 2.0 technologies”.

The advent of the Internet, knowledge management, Web 2.0 and Library 2.0 through the 1990s and 2000s, as noted by Foo and Ng (2008), has indeed posed significant challenges for library schools to keep pace with the changes. Some studies, for example by Bawden et al. (2007) and Foo and Ng (2008), found that LIS curricula have started to adopt either a specific course on Web 2.0 or on issues related to Web 2.0, such as wikis, blogs, Flickr, social bookmarks and social networking.

Web 2.0 tools and applications such as blogs, wikis, and the use of social networking sites are often implemented in higher education based on the argument that students, as digital natives, use these tools in their everyday life. Web 2.0, however, has larger implications that go beyond specific tools and applications. The accessibility of these tools that encourage creativity, knowledge creation, conversation, and collaboration has created a student population with very different expectations about the control of their learning process and knowledge creation. It is therefore essential for pedagogy to embrace these different approaches to teaching and learning in order to take advantage of the potential of digital media and Web 2.0 applications. Changing student realities means that pedagogy needs to adjust to student Web habits to maintain the wide variety of contexts in which students accomplish formal and informal learning (Hicks & Graber, 2010).

6.2.4 What benefits (gratifications) do LIS students derive from the use of Web 2.0 technologies?

There is a consensus among various studies that Web 2.0 technologies facilitate communication and collaboration amongst students both in class and online. Web 2.0 technologies have the ability to support active and social learning, provide opportunities and venues for student publication, and provide opportunities to provide effective and efficient feedback to students (Ajjan & Hartshorne, 2008: 74).

According to Schroeder and Greenbowe (2009), Web 2.0 technologies help students to develop more independent learning skills and confidence and become co-producers of knowledge and content. Web 2.0 has the potential to create more interactive and powerful learning environments in which learners become knowledge creators, producers, editors, and evaluators (Richardson, 2010; Yuen, Yaoyuneyong & Yuen, 2011: 110). In the words of An et al. (2009: 1), Web 2.0 provides numerous opportunities for social interactions and collaboration among students, teachers, subject matter experts, professionals in different fields, as well as a host of others with related interests.

The present study has shown that, between 89.4% and 96.5% of the LIS students agree/strongly agreed that, Web 2.0 technologies play a significant role in improving technology proficiency and at the same time having the ability to extend learning beyond the classroom. Web 2.0 technologies also provide a platform for entertainment, facilitate collaborative learning and leads to improved knowledge sharing and collaboration, provide cheaper and efficient communication platforms, allow for easier and faster access to information when and where it is needed, and that a low level of complexity is needed to use Web 2.0 technologies. Seventy eight per cent of the LIS students also agree/strongly agreed that, Web 2.0 technologies are useful for safe and secure storage of documents, for example, Google Docs and Drop box.

The benefits of Web 2.0 technologies highlighted by LIS students were also singled out by many researchers. According to An et al. (2009: 4), Web 2.0 has the potential to provide more interactive and customized learning environments where students create knowledge, interact and collaborate with those who have similar interests globally, and obtain opportunities to learn to become professionals in communities of practise, rather than passively receive information from instructors. As reported in Chapter five, all six LIS academics interviewed endorsed the fact that Web 2.0 technologies do come with huge benefits. Two of the LIS academics mentioned that Web 2.0 technologies promote communities of practice while at the same time

promoting information sharing and collaboration. Web 2.0 technologies, according to the LIS academics, are also easy to use so that users can actually learn on their own. They provide for real time information sharing and are fairly cheap.

Students in South Africa are addicted to social media but are almost unanimous that it enhances both their academic and social lives. In fact, they believe that it may even help them during exam time. This was a key finding of the South African High-tech Student 2013 research study, released by World Wide Worx and Student Brands (2013). Web 2.0 tools have a number of affordances which can transform the learning environment by providing multiple opportunities for shared content and resources, self-directed learning, collaborative learning, ubiquitous, low cost, accessibility and lifelong learning. Web 2.0 technologies afford users the opportunity to engage in informal conversations and reflexive dialogue which will expose them to a wide range of ideas and collaborative content generation (NMC Horizon Report, 2014: 8; Jimoyiannis, Tsiotakis, Roussinos, & Siorenta, 2013: 250; Ajjan & Hartshorne, 2008: 74). Most of the aspects highlighted in the above studies were reflected in the current study.

6.2.5 Which Web 2.0 technologies are LIS students being taught?

Web 2.0 technologies, as noted by Brodahl, Hadjerrouit and Hansen (2011: 73), are becoming popular in teaching and learning environments and several online collaborative tools like wikis, Google docs and blogs have already been integrated into educational environments. LIS schools have important educational roles to play in the 21st century. Their immediate mandate is to equip the new generation of librarians/information workers with competencies and skills to fully adopt and exploit Web 2.0 technologies through curriculum development and other initiatives (Foo & Ng, 2008: 6). As mentioned in Chapter two, the advent of the Internet, knowledge management, Web 2.0 and Library 2.0 through the 1990s and 2000s have indeed posed a significant challenge for library schools to keep pace with change and to

ensure that the education of information professionals remains relevant and up-to-date thereby ensuring maximum employability and effectiveness for the employers.

Of the listed ways with which one could acquire skills to use Web 2.0 technologies, data presented in Chapter four revealed that 60% of the LIS students learned to use Web 2.0 technologies through their current LIS programmes. Over 50% of the LIS students indicated that they received training on the use of blogs, Twitter and YouTube. About a third pointed out that they were taught to use wikis and Google Apps but less than 10% of LIS students stated that they had received training in the use of Delicious, RSS feeds and podcasts. In Chapter 4.6.1, 81.1% of the LIS students indicated that they taught themselves to use Web 2.0 technologies. This sentiment was echoed by one of the LIS academics and Blumer and Katz's (1974) UGT points to ease of use as one of the primary reasons people would choose to use a particular tool. Of the listed ways of learning to use Web 2.0 technologies, the questionnaire item allowed participants to choose more than one method with which they learnt using Web 2.0 technologies. This led to the discrepancy of the statistics where 60% of the LIS students indicated that they learnt using Web 2.0 technologies through the LIS programme and over 81.1% indicated that they taught themselves.

Data in Chapter 4.3.3 showed that all LIS students (100%) do access Web 2.0 technologies, on their mobile phones. Web 2.0 technologies, as explained by An and Williams (2010: 112), are flexible and easy to use, which makes them suitable for students and academics who do not necessarily have advanced technical skills. In Chapter five, academics mentioned that they incorporate Web 2.0 technologies such as, YouTube, Google Apps, wikis and blogs in their teaching. Web 2.0 technologies, for example, Twitter, blogs, wikis, RSS feeds, Delicious, Digg, StumbleUpon and podcasts are mentioned in the LIS curriculum and assignments, in particular the ICT Trends and Applications in LIS and World Wide Web and Internet modules.

This research also revealed that most of the LIS students are aware of the majority of Web 2.0 tools, for example, between 50% and 100% indicated familiarity with

Twitter, Skype, WhatsApp, YouTube, wikis, Drop-box, Google Apps, LinkedIn, blog, RSS feeds and Facebook. However, a small percentage of between 16.4% and 22.8% professed familiarity with Viber, podcasts, Flickr and Delicious. The most popular Web 2.0 tools are social networks such as, Facebook, Twitter, WhatsApp and YouTube. A study by Garoufallou and Charitopoulou (2012: 214) highlighted that, even though it seems that the preference is to be for fun, students believe that using blogs, Facebook profiles, Flickr, YouTube, RSS feeds and wikis could stimulate teaching, keep students alert and enhance the content of each module.

Whilst Web 2.0 technologies such as wikis, podcasts, RSS feeds, blogs and Delicious are mentioned in the curriculum, LIS students indicated that they had not used podcasts (97.6%), wikis (74.4%), blogs (56.1%), RSS feeds (56.6%) and Delicious (80.1%). However, it is important to note that 91.7% of the LIS students indicated familiarity with blogs, wikis (63.3%) and RSS feeds (52.2%). It therefore becomes safe to conclude that familiarity does not necessarily translate into actual use.

Studies, as explained by Chen et al. (2005), Boulos, Maramba, and Wheeler (2006) quoted by Matingwina (2014: 61), have revealed that Web 2.0 technologies are popular with university students due to their flexibility and social nature. These technologies have proved to be an advantage over the traditional Web (Web 1.0: the static Web) due to their ubiquitous access, low cost, ease of use and functionality. The flexibility of Web 2.0 technologies has made them much more appealing as information management and learning tools. However, Pence (2007) and Underwood (2007) cited by Jimoyiannis et al. (2013: 248) mentioned that, while students are increasingly using new generation technologies such as social networks, text messaging, media sharing, blogs, wikis, and other Web 2.0 applications to communicate and collaborate, this is not the case for many educators. This assertion was endorsed by some of the LIS academics in Chapter five who indicated that they do not use Web 2.0 technologies owing to a shortage of time and lack of interest. Al-Daihani (2009: 52), however, believes that the effective use of Web 2.0 applications

is dependent on academics' familiarity and interaction with these tools, the opportunities they have had for exposure to the applications and their level of skills.

6.2.6 Summary of section

This section sought to provide answers to the five research questions identified in Chapter one with regards to the use of Web 2.0 technologies by Library and Information Science at the UWC. Results from Chapter four and five were synthesised and compared with similar results reported by other researchers. The section that follows will provide conclusions and recommendations.

6.3 Conclusion

It is important to highlight that Web 2.0 should not be viewed as only a technology; it offers many more possibilities (Hicks & Graber, 2010). In the words of Virkus (2008: 272), Web 2.0 is influencing the way in which people learn, access information and communicate with each other. To be successful in our modern society, LIS educators should take advantage of new ICTs and consider the learning preferences of digital natives as well as digital immigrants. This research has clearly demonstrated that LIS students are familiar with, and do use Web 2.0 technologies. The leading Web 2.0 technologies by LIS students are, Facebook, WhatsApp, Google Apps, YouTube and Twitter and they use these tools for both academic and general reasons. Having said that, a higher percentage of LIS students indicated no use at all of Web 2.0 technologies such as, podcasts, wikis, LinkedIn, Delicious, Drop-box, Flickr and Viber. Embedding Web 2.0 technologies in the various LIS modules as is already the case in the LIS trends and applications module, remains the most effective way to teach and encourage LIS students to use Web 2.0 technologies. This will encourage students to create new tools and products, and explore the possibilities and advantages that Web 2.0 has to offer, which will eventually benefit their future employment in libraries, museums or archives (Garoufallou & Charitopoulou, 2011: 496).

Many affordances of Web 2.0 technologies, for example, the ability to collaborate and communicate with peers and academics, its low cost and ease of use as well as the provision to learn outside the classroom, were some of the highlighted benefits LIS students derive from using Web 2.0 technologies. It is acceptable to conclude at this stage that Web 2.0 applications have already been accepted by the younger generations as a platform to socialise, collaborate and learn in an informal and flexible manner, although their level of involvement varies significantly.

To be successful in our modern society, recognised Library Associations around the world, chairpersons of LIS departments as well as LIS educators should work together to ensure that the LIS curriculum is tailored to meet the demands of the ever-changing market. It is of paramount importance for students to appreciate the power that Web 2.0 technologies have in the professional arena: either in their professional life to strengthen networking, or as a communication tool between their library/information centre and its patrons. As a result, the teaching of Web 2.0 technologies must begin within LIS schools in order to prepare the next generation of information specialists for the challenges ahead.

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6.4 Recommendations

As mentioned in Chapter two, reaping the educational benefits that Web 2.0 technologies offers and meeting the needs of the net generation are some of the reasons for supporting the idea of using Web 2.0 technologies in LIS education and incorporating its related themes into the LIS curricula. Web 2.0 is not only required to be an integral part of the LIS curricula, but it should be applied in the structure of the educational context to support both LIS teaching and learning. To achieve this, the following recommendations are made in the light of the findings of this investigation:

- Although students and lecturers have adopted some Web 2.0 technologies, this research has revealed that a good number of Web 2.0 technologies that could be equally useful for academic purposes are yet to be adopted. It is therefore imperative for LIS academics to embed, where possible, a variety of

Web 2.0 technologies in the various modules they teach. This could be either in pedagogy, assignments or assessments.

- The proliferation of ICTs in libraries has led to a demand for ICT proficient information workers. Change is inevitable and as a result there is a need for continuous knowledge and skills upgrading for LIS academics in order to remain abreast of global trends in the LIS spheres. This can be achieved through attending workshops, conferences and refresher courses, particularly those whose themes are centred new trends and emerging technologies, for example, Web 3.0, digital curation, altmetrics, gaming and so on.
- The fact that technology is ever-evolving has a direct bearing on library practices and subsequently on LIS education. As a result, LIS schools have to periodically undergo the rigorous work of curriculum revision and in the process try to keep pace with technological innovations.
- LIS schools must fulfil their role of harnessing the potential of emerging technologies to provide more open access to information for people inside and outside their walls as prescribed by the Library and Information Services Transformation Charter (2014).

6.5 Areas of further study

- With Web 2.0 technologies reaching its peak, future research could rather look at digital content management processes through curation. Curation, taxonomies, and metadata are all important for libraries as well as other types of organizations.
- New research could also look at gaming and how it can be used to enhance the learning experience in libraries and information centres.
- Altmetrics is an alternative means of measuring scholarly research output and it collects mentioned scholarly articles across the Web. It is linked to blogs, Twitter and other social media tools. Librarians cannot ignore altmetrics. New research could look at how libraries could use altmetrics to support researchers and filter quality research, among others.

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APPENDIX A: Letter of explanation and request to respondents

APPENDIX A



UNIVERSITY of the
WESTERN CAPE

University of the Western Cape

Department of Library and Information Science

Dear Participants

My name is Colin Zinyeredzi. I am a master's student at the Department of Library and Information Science at the University of the Western Cape, in Cape Town, South Africa. I am conducting a study on the use of Web 2.0 technologies by Library and Information Science students at the University of the Western Cape.

If you have any questions or concerns or wish to know more about the study, you may contact my supervisor, Dr Sandy Zinn, the chair of the department at the University of the Western Cape, at sandyzinn@gmail.com

If you agree to voluntarily take part in the above research, please tick YES below:

- I confirm that I have read and understood what the research entails and agree to take part in this research. [YES] [NO]
- I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and that I do not have to answer every question. [YES] [NO]

Signature_____

Appendix B: Ethical clearance



OFFICE OF THE DEAN DEPARTMENT OF RESEARCH DEVELOPMENT

02 April 2014

To Whom It May Concern

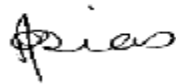
I hereby certify that the Senate Research Committee of the University of the Western Cape approved the methodology and ethics of the following research project by:
Mr C Zinyeredzi (Library and Information Science)

Research Project: The use of Web 2.0 technologies by Library and Information Science students at two Universities in the Western Cape Province in South Africa.

Registration no: 14/2/31

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of the study.



Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

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A place of quality,
a place to grow, from hope
to action through knowledge

Appendix C: Key informant Interview guide

Section A: General Information

1. What is your designation (position) in the department?
- 1.2 For how long have you been lecturing?
- 1.3 What is your highest qualification?
- 1.4 What do you understand by Web 2.0 technologies?
- 1.5 Do you use Web 2.0 technologies?
- 1.6 Which Web 2.0 tools have you used in general?
- 1.7 What do you personally use Web 2.0 technologies for?
- 1.8 How often do you use Web 2.0 technologies?

Section B: Web 2.0 technology training and use

2. Do you teach students the use of Web 2.0 technologies?
3. Does the department have resources to teach Web 2.0 technologies, i.e enough computers and skilled?
4. What do you think LIS students use Web 2.0 technologies for in general?
5. For what academic purposes are LIS students using Web 2.0 technologies?

Section C: Incorporation of Web 2.0 technologies in the curriculum

6. How have you incorporated Web 2.0 technologies into your course?
7. How many modules include Web 2.0 technologies in the curriculum?
8. Do you think Web 2.0 training should be part of the LIS curriculum?

Section D: Benefits of Web 2.0 technologies

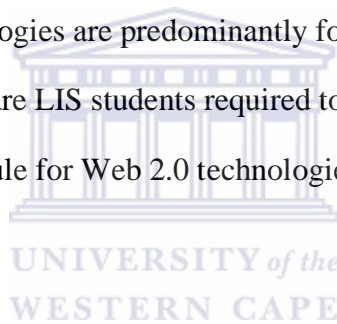
10. In the academic context, what do you think are some of the benefits associated with the use of Web 2.0 technologies for LIS students?

11. What are the challenges associated with the use of Web 2.0 technologies in general and in the academic context?

Appendix D: Content analysis guide

The use of Web 2.0 technologies by LIS students at the university of the Western Cape

1. Which courses offered by the LIS departments include Web 2.0 technology aspects?
2. At what level are LIS students introduced to Web 2.0 technologies?
3. Which Web 2.0 technologies are predominantly found in the LIS curriculum?
4. Which academic tasks are LIS students required to perform using Web 2.0 technologies?
5. Is there a separate module for Web 2.0 technologies in the curriculum?



Appendix E: Online questionnaire

10/30/2014 The use of Web 2.0 technologies by Library and Information Science students at the University of the Western Cape, South Africa - Google Forms

The use of Web 2.0 technologies by Library and Information Science students at the University of the Western Cape, South Africa

Dear participant

My name is Colin Zinyeredzi, a masters' student in the Department of Library and Information Science (LIS) at the University of the Western Cape, in Cape Town, South Africa. I am conducting a research on the use of Web 2.0 technologies by LIS students at the University of the Western Cape (UWC).

Please be so kind as to complete the questionnaire below. Participation in this research is voluntary and therefore you are free to withdraw at any stage. You will remain anonymous and your responses will be confidential. Once you are satisfied with your answers, please click on the "submit" button at the bottom.

If need be, you can email me at colin.zinyeredzi@gmail.com . For more information about this research, feel free to contact my supervisor Dr Sandy Zinn at szinn@uwc.ac.za

Thank you for your decision to participate.

1. Please indicate your gender

Mark only one oval.

Male

Female

2. Which programme are you enrolled for?

Mark only one oval.

Undergraduate

Masters

Postgraduate Diploma

PhD

Section B: Familiarity with Web 2.0 technologies

3. Which of the following Web 2.0 technologies are you familiar with. You may choose more than one.

Check all that apply.

- Twitter
- Facebook
- RSS feeds
- Blog
- Delicious
- LinkedIn
- Google Apps
- Dropbox
- Wikis
- YouTube
- Flickr
- Podcast
- WhatsApp
- Viber
- Skype
- Other:



4. Where do you normally access the Web 2.0 technologies? You may choose more than one

Check all that apply.

- Library
- At home
- Faculty lab
- Internet cafe
- Other:

5. Which of the following devices do you use to access Web 2.0 technologies? You may choose more than one

Check all that apply.

- Mobile phone
- Laptop
- Desktop
- Tablet
- Other:

Section C: Use of Web 2.0 technologies

6. What do you generally use Web 2.0 technologies for? You may choose more than one

Check all that apply.

- Entertainment
- Keeping up-to-date
- Acquaintance/meet people
- Communication with friends/family
- Job hunting
- Relaxing and socialising
- To pass time
- Other:

7. What academic purposes do you use Web 2.0 technologies for? You may choose more than one

Check all that apply.

- Knowledge sharing with fellow students
- Collaborative authoring
- Communication with peers and lecturers
- Information seeking/research
- Remain abreast of technology
- Assignments
- Other:



8. Indicate how often you use the following Web 2.0 technologies.

Mark only one oval per row.

	Many times a day	Once a day	Many times a week	Once a week	Once a month	Never
Blog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wiki	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Google Apps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dropbox	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LinkedIn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flickr	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Podcasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RSS feeds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WhatsApp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delicious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skype	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Viber	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. 9. Have you created a website/video/account with the following Web 2.0 technologies?

Mark only one oval per row.

	Website	Video	Account	No
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wiki	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Podcast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skype	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Google Apps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flickr	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LinkedIn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dropbox	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WhatsApp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Viber	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section D: Benefits of Web 2.0 technologies

10. **10. The following are the benefits associated with the use of Web 2.0 technologies. For each item you should choose between "Agree", "Strongly agree", "Neutral", "Disagree" and "Strongly disagree". Select the most appropriate category**

1 = "Agree", 2 = "Strongly agree", 3 = "Neutral", 4 = "Disagree", 5 = "Strongly disagree"

Mark only one oval per row.

	1	2	3	4	5
They help me improve technology proficiency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web 2.0 technologies extend beyond classroom walls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web 2.0 provides a platform for entertainment and relaxing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They facilitate collaborative learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved knowledge sharing and collaboration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide cheaper and efficient communication platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Useful for safe and secure storage of documents eg. Google Docs and Dropbox	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide easier and faster access to information, when and where it is needed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A low level of complexity is needed to use Web 2.0 technologies (minimum skills)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section E: Web 2.0 technology skills and training

This section looks at the training received from the University as well as skills that are still required .

11. **11. How have you learnt to use Web 2.0 technologies? Check all that apply**

Check all that apply.

- Self-taught
- School
- Current LIS programme
- I have never learned to use Web 2.0 technologies
- Other:

12. **12. Which Web 2.0 technologies did you receive training on in your current LIS programme? You may choose more than one**

Check all that apply.

- Blogs
- LinkedIn
- Twitter
- Facebook
- Wiki
- Flickr
- Google Apps
- Delicious
- YouTube
- Dropbox
- RSS feeds
- Podcasts
- Skype
- Other:



13. **13. Do you think the Library and Information Science curriculum should include training on Web 2.0 technologies?**

Mark only one oval.

- YES
- NO

14. **13.a If you answered YES to question 13 above, please explain**

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.....

15. **13.b** If you answered **No** to question 13 above, please explain

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.....

.....

End of questionnaire. Thank you for taking part in this research.

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 Google Forms



APPENDIX F		
Familiarity with Web 2.0 technologies		
Web 2.0 Technologies	Udergraduate	Post Graduate
Facebook	100%	100%
Twitter	100%	100%
YouTube	100%	100%
WhatsApp	100%	100%
Flickr	33%	67%
Viber	36%	64%
Del.icio.us	37%	63%
Rss Feeds	44%	56%
Podcasts	36%	64%



Appendix G.

Web 2.0 technologies in the LIS curriculum at UWC's LIS department

Web 2.0 technologies in the LIS curriculum			
Courses	Documents analysed	Web 2.0 technologies	Extracts about Web 2.0 technologies from the documents
Library Science 121: Information Literacy	Course outline and assignments		<ul style="list-style-type: none"> • Discuss the impact of social media on South African youth. • Is social media a mere distraction or can it be useful in higher education? Discuss. <p>Students are also required to watch a video on YouTube on how to evaluate information sources.</p>
INF 411 - ICT applications in LIS	Course outline and assignments	RSS Feeds Wikis Weblogs Podcasts QR codes	<p>In this 4th year module students be able to demonstrate an awareness of current developments in ICT (podcasting, blogging, RSS, internet filtering e-books, QR codes, etc) that affects LIS.</p> <p><u>Main content of the module with Web 2.0 aspects</u></p> <ul style="list-style-type: none"> • Introduction to Web 2.0 and library 2.0 • Electronic books; Podcasts; Weblogs; • RSS; Wiki; Twitter; QR codes • Mobile technologies <p>Podcast project: students are required to conduct an interview with fellow students, lecturers or librarians. The interview should be 10 minutes long after editing and should have some music added while ensuring that noise and irrelevant content is eliminated.</p>

INF 412: World Wide Web & Internet	Course outline and assignment s	Ning Delicious Digg StumpleUp on Zotero OttoBib BibeMe Pinterest	<p>In this 4th year module students are given exercises which provide them with an opportunity to use tools learnt in class. Among others, students are required to create a website guided by the assessment criteria distributed at the start of the assignment.</p> <p><i>Below is an exercise given to students for the INF 412 module:</i></p> <ul style="list-style-type: none"> • What is a ning? Provide one example of a ning. • According to research completed by World Wide Worx http://www.worldworx.com/wp-content/uploads/2012/07/Exec-Summary-The-Mobile-Internet-in-SA-2012.pdf, which service provider experienced the biggest increase in instant messaging? • Set up a social bookmarking site either on Delicious, Digg, or StumpleUpon and start saving your own favourite bookmarks. Provide me with your URL so that I can view your bookmarks. • What do Zotero, OttoBib, BibeMe have in common and how are they different? • What is Pinterest? How could it be used educationally?
LIS821 ICT Trends & Applicatio ns in LIS	Course outline, assignment s and website.	RSS Feeds Wikis Weblogs Podcasts QR codes	<ul style="list-style-type: none"> • Discuss the role of the Web in the knowledge/ information society • Use an evaluation tool to evaluate websites • Discuss the open access movement and its implications for the LIS sector • Apply knowledge of web design theory • Decide the value and application of new ICTs for libraries e.g. weblogs, RSS and Wikis, e-books, etc. • Create a web site for a specific audience • The role of web sites in business, commerce, NGO, education and the

			<p>library and information sector</p> <ul style="list-style-type: none"> • Evaluating a web site • Planning a web site • Collaboration (groupware tools)
LIS815 KM Processes & Tools	Course outline, assignment s and website	Weblog Website YouTube	<ul style="list-style-type: none"> • Evaluate the impact of technology including telecommunications, networks, internet/intranet role in managing knowledge • Selection and design considerations for KM enabling technologies • KM tools and applications • You are required to blog weekly reflecting on the readings or lecture of that week. You may blog more often if you wish. • Imagine that you are starting up a company. You are required to create a KM website for a company of your choice.

