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LETTER OF RECOMMENDATION

This is to certify that the thesis submitted by Nirmala Subedi entitled “**The Use of Smartphone by the Students of Masters of Library and Information Science (M.L.I.Sc.) in Central Department of Library and Information Science**” is an original work prepared under my supervision and guidance in partial fulfillment of the requirements of Master’s of Arts in Library and Information Science.

Therefore, I recommend the thesis for acceptance.

Mr. Bhim Dhoj Shrestha

Thesis Supervisor

Date: 29/12/2017



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APPROVAL LETTER FROM DEPARTMENT

The thesis prepared and submitted by Nirmala Subedi entitled **The Use Of Smartphone By The Students Of Masters Of Library And Information Science (MLISc) In Central Department Of Library And Information Science** has been evaluated and accepted as a partial fulfillment of the requirements for the degree of Master of Arts in Library and Information Science.

Approval Committee

Signature

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Date: 29/12/2017

LETTER OF RECOMMENDATION

APPROVAL LETTER FROM DEPARTMENT

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It was impossible to prepare this thesis without the keen interest and co-operation from different people therefore, I would like to express my sincere gratitude to all of them who directly or indirectly co-operated during the study and the writing of this thesis.

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Date: December, 2017.

Nirmala Subedi

ABSTRACT

This thesis entitled, "**The Use Of Smartphone By The Students Of Masters Of Library And Information Science (MLISc) In Central Department Of Library And Information Science**". General objectives of this study was to assess the use of Smartphone by the students of MLISc the study concern to find out the reasons behind the use of Smartphone by students of MLIS, the frequency of use of smartphone for academic purpose and also to identify the applications of smartphones for academic purpose. Twenty literatures were reviewed for this thesis. The required data and information have been obtained from the primary sources with the help of semi structured questionnaire.

It would be useful to library and information science students in determining many opportunities the smartphone technology provides in their academic lives. It involved only undergraduate library science students who were enrolled in the Central Department of Library and Information Science at the time of sampling. Census method was adopted to collect data. A set of questionnaire was used to collect the data from the respondents. Statistical tools like frequency tables, pie chart were used to organize, summarized and present the data.

On the basis of the findings of the study, most of the students used smartphone since last 2 to 3 years (61.11%). 80.56% of them were using android operating system. The reasons behind it were to study, entertainment, and also to communicate with their family and friends. Maximum of them were using it for academic purpose. As they record audio of the class notes, for library references, and watching learning videos. And the other reasons were for socializing and safety. Students used smartphone occasionally to prepare their classnotes. As they installed lots of applications in their phone, most of the applications (88.89%) were for academic purpose.

On the basis of this study it is recommended to incorporate smartphone learning application to promote learning among the MLISc students. This study was limited in only 36 students from two semesters of library and Information Science Department. More research should be done in the other faculty.

Concerned faculty must be more alive to their responsibilities by ensuring conformity to the college laid down rules and regulations on student's use of smartphone device during class session.

DEDICATED

To my respected parents and teachers for their love and support over the years

PREFACE

The study has been conducted for the partial fulfillment of Masters Degree in Library and Information Science (MLISc). This study is the mirror of existing condition of the Central Department of Library and Information Science. General objectives of this study was to assess the use of Smartphone by the students of MLISc the study concern to find out the reasons behind the use of Smartphone by students of MLISc, the frequency of use of smartphone for academic purpose and also to identify the applications of smartphones for academic purpose. To present the real facts, figures and the data, this study has been organized five chapters.

The first chapter deals with introduction that included background of the study, problem of the statement, objectives of the study, scope and limitation of the study, definition of terms and organization of the study.

Second chapter of study includes related studies which is called literature review.

The third part of the study entitled research methodology which consist several subtitled like research design, source of data, population, sampling research instruments etc.

The fourth chapter is about analysis and data presentation which are interpreted from data of the study.

Last chapter i.e. fifth part consists of summary, findings, conclusion and the recommendations which are presented in summarized form. At the end of the chapter, the study has recommended for the improvement of the department. Finally, references, appendixes, bio-data of the researcher also included.

Nirmala Subedi

CATALOGUE OF THE THESIS

Selflist Card

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| D | |
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| Su15u | Subedi, Nirmala |
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LIST OF ACRONYMS AND ABBREVIATIONS

APA- American Psychological Association

Apps- Application

BYOD- Bring your own device

CDLIS- Central Department of Library and Information Science

E-learning- Electronic Learning

IT- Information Technology

LCD- Liquid Crystal Display

MLA- Modern Language Association

MLISc.- Masters of Library and Information Science

MMS- Multimedia Message Service

NWNP- Nepal Wireless Networking Project

OLE- Open Learning Exchange

PC- Personal Computer

PDA- Personal Digital Assistant

PDF- Portable Document Format

SMS- Short Message Service

T.U.- Tribhuvan University

TED-Technology Entertainment Design

WAP- Wireless Application Protocol

Wi-Fi- Wireless Fidelity

0G-ZeroGeneration

CHAPTER-I

INTRODUCTION

Smartphone is one the most ubiquitous, dynamic and sophisticated trends in communication. It is a mobile phone running a complete operating system in a manner similar to a traditional computer, which offer advanced computing abilities and connectivity options. These features enable new kinds of mobile services that in turn shape the usage habits of smartphone users. Smartphones were released in year 2000. It was first manufactured by Ericsson and the model was called R380. It functions as a mobile phone and PDA (Ericsson, 2016). These smartphone devices have the potential to transform learning and to impact the delivery of course materials.

Actually, this was the first time when this type of gadgets, a merging between a cell phone and computer functionality, was called a “smartphone”. With the help of mobile users, a smartphone has become a very desirable device. Nowadays, smartphones have been used to replace desktop or mobile computers. All activities which can be performed on normal computers such as sharing information, sending and receiving emails, chatting, opening and editing documents, paying for products, browsing and shopping can be done using smartphones; a small device which can be kept inside a pocket of a trouser or a shirt. Some smartphones have sophisticated applications such as a camera which can work as a scanner (Pea & Maldonado, 2006). As smartphones provide more and more applications for an increasingly a wider range of usage situations, they have become an increasingly integrated part of people's everyday life.

Over the last few years, smartphones have brought about significant and unprecedented changes in the way humans interact and share information and the number of users worldwide has grown from close to 700 million in 2012 to an estimated 1.75 billion in 2014 (eMarketer,2014).

Defining a smartphone is somewhat problematic because a clear cut scientific or industry definition is hard to find but it has often been used as a general term for the kind of phone that has an independent operating system like a PC and could achieve wireless network access through mobile communications networks (Baik, 2013).

Mobile was established first from America. Martin Cooper invented the first handheld cellular mobile phone in 1973. So, he is considered the 'father of the cellphone'. Mobile phone was called 0G(Zero Generation). In 1993, IBM's Simon was the first smartphone.(Khadka,2017).

1.1. Background of the Study

Smartphones have become an integral part of the daily life of many university students, even in developing countries like Nepal. These devices allow users not only to make and receive phone calls or text and voice messages, but also to run a wide variety of productivity and convenience applications, popularly known as *apps*. Running on mobile operating system, today's smartphones provide advanced computing capabilities and connectivity options in a manner similar to traditional computers. These features enable new kinds of mobile apps that in turn shape the usage habits of smartphone users (Alfawareh and Jusoh, 2014).

The first handheld mobile phone was demonstrated by John F. Mitchell and Martin Cooper of Motorola in 1973(John F. Mitchell Biography, 2012).

A smartphone is a mobile phone (also known as cell phones or cell mobiles) with an advanced mobile operating system that combines features of a personal computer operating system with other features useful for mobile or handheld use. Mobile phones are known to be very popular among university students, increasing their social inclusion and connectedness as well as providing a sense of security as they can contact others in times of distress or emergency (Balakrishnan & Raj, 2012).

Given the high levels of smartphone ownership and use among student-aged people, universities have been slow to leverage mobile device ownership to facilitate learning. (Alrasheedi and Capretz 2015).

Mobile phone communication technology has substituted the traditional fixed networks in developing countries such as China and many African countries (Fong, 2009).

Information, consensus, advertising, entertainment and development are main functions of the smartphone; however, it does not serve all those functions for all users. Besides, there are also other functions i.e. socialization, motivation, education, cultural promotion, integration, knowledge, modernization, etc. Whatever function it serves, smartphone will continue to dominate everyday life of human being. In this sense; what function communication serves depends on the how, and when the users use it. Smartphone (as a means of communication) has now emerged as one of the popular, powerful and effective tools in disseminating new ideas for mass motivation and education in places where the service is available (Betteridge,2016).

The use of Smartphone has become very common among the students nowadays. It is being used to make calls, playing games, browsing Internet, reading emails, calculating mathematical operations. It is hardly used for educational purposes. There are a number of good search engine like Google scholars and other educational material such as dictionaries, reference materials through websites, reference management software, etc. Website of digital trends (www.digitaltrends.com/mobile/best=educational-apps/2/) has listed 25 best educational-applications for iphone and android. Among them non priced applications which are used by developing country like Nepal may be as follows:

- TED
- Evernote
- EasyBib
- Camscanner
- Quizlet

- Ready 4 SAT
- Edx
- My study life
- Mendeley
- One note
- Dropbox, etc.

A brief description of each one is given below:-

TED is rare that an organization truly makes you think. This app lets you peruse more the entire library of more than 1,700 TED Talks videos, introducing you to intriguing presentations and revolutionary ideas from education radicals, tech geniuses, business gurus, musical legends, and the like.

Evernote is the free productivity app gives you the tools for taking photos, crafting notes, creating to-do lists, and recording voice reminders, all of which you can tag for additional organization. The app even syncs content across multiple devices.

EasyBib: Any and every writer knows that bibliographies aren't for the faint of heart. They're less so with EasyBib, though, which is an app that functions as a basic citation generator. It allows you automatically create and export citations in a matter of seconds using more than 50 different source types, not mention more than 7,000 citation styles (MLA, APA, Chicago, etc.).

Cam scanner is a phone PDF creator app that lets you scan and store your college notes, certificates, white board discussions and so on. It is highly recommended for students as this app lets you create PDF of your books and copies and help you keep it in an organized manner. The dashboard is fairly simple and even allows sharing of your PDF files. The smart cropping feature allows you to crop only the necessary part and also make it looks bright, sharp and clear. It is suggested every user reading this post to give this app a try.

Quizlet is an app specifically tailored for marathon study sessions. It's fairly no-frills, sure, but the rudimentary app allows you to create your own personal flashcards — using text, images, and audio — or browse a wealth of user-created quizzes spanning nearly any topic you can think of. The straightforward interface and setup process just adds to its appeal.

Ready4 SAT: Ready4's series of test prep apps, like Ready4 SAT, goes well beyond just drilling you to answer practice questions. It actually aims to teach you the material and test-taking tips in mobile-friendly chunks, so that you can study whenever and wherever you have your smartphone. This free app even tries to match your potential SAT score with schools and academic programs around the world, just in case you need extra motivation to study.

EdX: Higher education is no longer exclusive to college students or contained within Ivory Towers. EdX makes it possible for anyone with a smartphone to learn from distinguished institutions such as MIT and McGill, and maybe even earn a certificate while you're at it. You can tune into online lectures, take quizzes, and complete assignments at your own pace, all without having to worry about getting a student loan (though some certificates and courses do cost extra).

My Study Life is a planner app not only for students but also teachers and lecturers to make your study life easier and fairly managed. It allows you to store your classes, homework and exams in the cloud making it available on any device, wherever you are. My Study Life integrates all areas of your academic life – see homework due and overdue for classes, classes which conflict with your exams and even add revision tasks for a specific exam – all in a free, easy to use application. You can keep track of your exam routines and other important educational dates with the help of this app. This app really eases a student life.

Mendeley: If you already use Mendeley Desktop to manage your research citations and collaborate with classmates, then the Mendeley app is a no-brainer. After all, the app is a PDF reader that lets you annotate and search across the journal articles you need for your paper or your class readings, directly on your mobile device. Once

you're back at your computer, the app will also sync your mobile notes to keep you organized.

Dropbox: Moreso a tool for organizing your education than receiving it, Dropbox allows you to access all your photos, documents, and videos on nearly any device. You're given 2GB upon signing up, with options for syncing and adding files to your favorite list for offline viewing on the go. It's very useful for sharing files.

Most of the students are not well aware of the application. Most of Nepali medium students state that they do not understand the technical terms given in smartphone. Even the students are found to be using smartphone less frequently. A good number of them have not installed useful applications in their smartphones. Although there a good number of smartphone application in the internet, they do not know about them. They do not have habit of using smartphone for innovative idea generation in a regular basis either. Moreover, some of them are confident about the certain aspect of use of smartphone. While looking up a word from a dictionary, they do not do through study of the whole word entry. They give meanings of a word more important than other aspects of a word (Cedergren & Hellman, 2012).

There has been a slight change in traditional learning processes through the use of mobile phone capabilities in learning, shifting the world of learning to be more collaborative and learner-centred, enhancing the students' learning experience. Smartphones increase students' access to information anytime/anywhere while supporting the individual-participation in learning activities using mobile phone. Technology mobility provide students with the ability to access the internet using the WAP and the Wi-Fi. This has stolen the market for standard desktop personal computer that connects the internet using landline stations. The standard of learning has been improved; e-learning is practiced anytime/anywhere cancelling situated elearning. The new smart phone provides capabilities that include the video camera, telephone, GPS, film player, games, e-book, e-mail, and facilitation of internet access, music MP3, SMS and MMS. Obviously these capabilities can be useful to student learning settings and practice (El-Hussein and Cronje, 2010).

Educators may feel that they have to change their teaching style in order to accommodate mobile learning and many are unwilling or unable to do that (Crompton, 2013).

As smartphone apps continue to evolve, they have the capability of contributing to student learning and improving academic achievements.

Smartphones, which are usually pocket-sized, typically combine the features of a mobile phone, such as the abilities to place and receive voice calls and create and receive text messages, with those of other popular digital mobile devices like personal digital assistants (PDAs), such as an event calendar, media player, video games, GPS navigation, digital camera and digital video camera. Smartphones can access the Internet and can run a variety of third-party software components ("apps" from Google Play Store, Apple App Store etc). They typically have a color display with a graphical user interface that covers more than 76% of the front surface. The display is almost always a touch screen and sometimes additionally a touch-enabled keyboard like the Passport BlackBerrys, which enables the user to use a virtual keyboard to type words and numbers and press onscreen icons to activate "app" features.(Smartphone,2017)

Studies have identified that students are increasingly using a diverse range of academic apps to support their learning needs (Woodcock *et al.*, 2012).

Education is a key investment in human capital. Therefore, non-profit organizations such as Open Learning Exchange (OLE) and Nepal Wireless Networking Project (NWNP) are working towards improving quality and access in Nepal's public education system. But to support Nepal's education faces numerous pedagogical, technological, social, cultural and political challenges, where one of the current and the urgent requirements is to provide an access to teaching and learning resources (Shrestha, 2011).

The internet is a click away with the smartphone. We live in an internet age, and accessing the internet with the smartphone doesn't require a computer handy - it is a mini computer in our pocket. Lastly, the smartphone is more desired now because it has become cheaper and more available. Before, the smartphone was simply on many

Nepali's wish lists, but it is now much more affordable and has integrated itself into a part of the society in Nepal.

Benefits of Smartphones for Education:

Smartphones give students a wealth of creative options to enhance the classroom experience, including:

- Access to the internet for research and referencing.
- Access to e-mail.
- Uses storage apps like Google drive, Mega cloud, etc.
- take a short video of a key lecture moment.
- uses reading apps like Amazon Kindle, Pocket, etc.
- Recording lectures with Voice Memo and other third-party note-taking apps
- Keeping track of schedules and dates

Influence of smartphone on academic performance:

The use of smartphone technologies seems to positively influence students' academic performance in Library and Information Science by impacting on students' academic satisfaction and learning style. Academic satisfaction involves two aspects, which include academic and facilities dimensions. The academic aspect deals with teaching styles (how lecturers use technologies to support their teaching), group work and discussions and collaboration among students. The other dimension deals with the facilities available on campus. The more satisfied the students are with their universities, academics and facilities, the more likely they are to perform better.

Learning styles are one of the most important factors in facilitating students learning and in improving their academic performance (Liu *et al.*, 2007). Since each student has different learning preferences; technology being integrated into a students' learning style can potentially have a positive influence on their learning. In addition, lecturers are more effective when they understand the variation in learning styles and actively use teaching strategies that include many learning styles (Felder & Spurlin, 2005). Ally (2005) defines learning style as a means by which an individual learns, processes information, interacts with others, and completes practical tasks. This study involved Felder-Silverman's model of learning styles.

This study looked at Library and Information Science students who were in their first semester and third semester. In spite of many studies, ICT usage on students' academic performance remains indeed a bit complicated to measure and much open to rational discussions. But, notwithstanding, there are many benefits in using ICT tools, especially smartphone technologies to support and influence students' learning.

Not much research has been done in regard to the influence of smart phone technologies on students' academic performance. There is, however, much research on the influence of ICT on student's learning. For example, the findings conducted by Kulik and Kulik (1991) reported that students in the computer-based instruction (CBI) classes had higher exam scores than students who were taught traditionally without computer technology. As a result, it was observed that the use of computer technology in education had a significant positive effect on students' academic performance.

Livingston (2009) advised lecturers that instead of being annoyed with the mobile phone revolution, they should put effort towards seeing how best these devices can be used to support educational experiences and services. Amenity (2009) observes that the profuse use of mobile phones, wireless internet connectivity and video conferencing technologies should make it achievable for lecturers to implement these mobile technologies as a support to their teaching.

1.2 Statement of Problem

The use of smartphone is rapidly increasing in society. Being an information providing students, it would be interesting to see whether MLISc students use smartphone for their academic purposes or not. If yes, what types of information they access through smartphone and what is the frequency of using smartphone for academic purpose.

In Nepal, smartphone is used by different professions. Students need a wide variety of information to meet their educational achievement. However, most of the students do not have the sufficient knowledge of different educational applications.

Justification of the Study

In the present world, technological advancement is given credit for changes and modification in all aspects of human life. Moreover, the advancement in the field of Information Technology (IT) and mobile technology has been bringing about

unpredictable changes in human lifestyle and access to information. In spite of being a developing economy, people in Nepal's urban centers are being able to consume the latest developments in the field of information and communication.

1.3 Research Questions

The problem towards which this study was directed to find out the solution to the research problem used as the following research questions:

1. What are the reasons for using a smart phone among students?
2. What is the smart phone usage pattern among the students?
3. What are the academic related applications of smartphone use by students?

1.4 Objectives of the Study

The overall objective of the research was to assess the use of smartphone by the students of MLISc in Central Department of Library and Information Science. The specific objectives were:

- To find out the reasons behind the use of smartphone by students of MLISc.
- To identify the frequency of use of smartphone for academic purpose.
- To identify the applications of smartphones for academic purpose.

1.5 Hypothesis

The study is based on the following hypothesis:

- a. Most students and lecturers in Tribhuvan University have smartphones.
- b. Students' demographic characteristics will directly or indirectly influence how the smartphone technology is used to support learning experiences.

Expected Results (in case of discovery-driven research)

Result was derived from analysis, interpretation and presentation of the data. The researcher was also point out some strength and weaknesses of the use of smartphone and recommendation was suggested for its usefulness among the students.

8. Expected Outputs

The study was concentrated on the Smartphone and its use by the students of library science.

The analysis was described the applications used by students. These applications may be useful for teaching learning purpose. It also outlines the expectations of students fulfilled by smartphone in enhancing their knowledge.

1.6 Scope and Limitation of the study

This study involved the following limitations. Even though, there are other mobile devices that can be used to support learning, This research was only limited to the smart phone. It involved only undergraduate library science students who were enrolled in Central Department of Library and Information Science at the time of sampling and agreed to participate voluntarily. The students pursuing degrees in Library and Information Science participated in the study. Other devices affect academic performance, but for the sake of this study only academic satisfaction and learning style with the utilization of smartphones was observed.

1.7 Significance of the study

It is hoped that the findings of this study will benefit various educational stakeholders. It would be useful to library and information science students in determining the many opportunities the smartphone technology provides in their academic lives. Library and Information Science lecturers would be guided on how integrating smartphone technology will create a richer environment for teaching and learning. The smartphone companies would be more informed and therefore invest in providing smartphone technologies to universities with internet connectivity and smartphones at a reduced price.

Curriculum planners and policy makers would be aware of the numerous possibilities of using smartphone technologies in learning, so as to assist in implementing and designing activities to support the various learning styles. The findings of this study would also complement other studies and provide appropriate information for content developers and smartphone learning developers in designing smartphone applications for library learning at the university level. This research would contribute to the body of educational research in that it explores students' academic performance with multiple indicators of learning, which is satisfaction, learning style and performance. The research may provide literature so as to add more information on innovative uses of mobile phone technologies to enhance educational experiences of library and information science students.

Ethical/Safety Issues

Ethics is the most important component of a research. Ethical considerations play a vital role in conducting any types of research. In this research, researcher was obtained ethical issue by taking consent from the respondents. No participants was forced to participate in the interview. Freedom was given to participate, and even discontinue during the process. The confidentiality and privacy of the participants was confirmed before commencing the data collection process. It was a purely academic study. The same report was not submitted to any institution or individual for any other purpose. In this way, the research was made non-discriminative and non-biased in every aspect known to the researcher. H/she was followed APA method of citation and documentation and assure to exclude plagiarism.

Time Table and Detailed Budget (actual)

| S.N. | Chapters | Activities | Time | Budget | Remarks |
|------|--|--|----------|---------|---------|
| 1. | Seminar on use of smart phone in academic activity | Providing training in application of smart phone in academic activities. | 1/2 days | 10,000 | |
| 2. | Data collection | Through questionnaire. | 30 days | 10,000 | |
| 3. | Data Analysis | Categorizes the raw data according to the objectives/ analyze by using descriptive statistics. | 45days | 5,000 | |
| 4. | Report writing | Draw the conclusion and finding on the basis of data analysis. | 15 days | 5,000 | |
| 5. | Total | | 3 months | 30,000. | |

Association to National Priority:

Nepal government has given priority on information technology and its using in development. Smartphone is one of the important means of tele-communication; however, there is debate whether about the advantages and disadvantages of using smart phone. The study concerned on such issues so the finding of this research was help to handle the policy whether given permission to student to use smartphone is useful or not more than that various kind of threats such as threat in secret of individual, challenges on leaking important information all these issues is the burning issues of Nepal. The area of the study is directly related to such national issue so it has ultimately associated with the national priority.

1.8 Definition Of Terms/Glossary

The following are the operational definitions of key terms used in this study:

Academic Performance: The GPA of the university student.

Amazon Kindle: The Amazon Kindle is a series of e-readers designed and marketed by Amazon. Amazon Kindle devices enable users to browse, buy, download, and read e-books, newspapers, magazines and other digital media via wireless networking to the Kindle Store.

Android: An operating system for smartphones and other devices, developed by Android, Inc. and later purchased by Google.

Bluetooth: A short-range wireless technology that lets students connect smartphones to each other and to the Internet.

Camscanner: It Access, edit and manage documents anytime and anywhere as we need; Easily share document scans in PDF or JPEG to collaborators via email. And we can save them in the cloud, fax and print out those documents.

Chat: Text-based, real-time communications between or among two or more students.

Dictionary: It is a book or an apps thst contains a list of words in alphabetical order and that explains their meaning or gives a word for them in another language.

Drop box: It is a cloud storage provider (sometimes reffered to as an online backup service) that is frequently used as a file sharing service.

E-mail: Text-based, delayed communications which are exchanged between and among students.

Mendeley: It is a desktop and web program for managing and sharing research papers, discovering research data and collaborating online.

Evernote: It is a cloud-based note-taking and file-storage application that synchronizes data across multiple devices.

Google Docs: It is an application in which documents and spreadsheets can be created, edited and stored online.

JPEG : It is a commonly used method of lossy compression for digital images, particularly for those images produced by digital photography.

Mobile phone: The usage of wireless Internet to exchange voice messages, email, and small web pages, anywhere and anytime

MP3: It is a digital music format for creating high-quality sound files in which students use to download audio files so that they can listen to audio lectures at any time or place.

Short Message Service (SMS): It is a convenient and cost effective way of text messaging important information to students through their mobile phones.

Smartphone: It is an electronic device that combines cell phones with a handheld computer, camera, video, mass storage, MP3 player, Internet access, data storage and networking features in one compact system.

Smartphone technologies: Those technologies (hardware/software) that deliver instructional content and learning materials in way that fits into students' smart phones for their digital lives.

Wi-Fi (Wireless Fidelity): A wireless networking technology that allows mobile phones and other devices to exchange data or connect to the internet over a wireless signal.

Wireless networking: The ability of devices to connect to the Internet or send signals to other devices without being connected by physical wires.

1.8 Organisation of the Study

This chapter of the study addresses the influence of smartphone technology on Library and Information Science students' academic performance in Tribhuvan University, Kirtipur. This study recognizes the use of the smartphone to support teaching and learning. In the study, statement of the problem was identified, objectives and research questions were stated. Assumptions were made, limitations and delimitations were specified and definitions of terms were stated.

The next chapter is a review of literature and includes results of researches and projects related to learning with smartphones.

REFERENCES

- Ally, M. (2005). Multimedia information design for mobile devices. In M. Pagani (Ed.), *Encyclopedia of multimedia technology and networking*. Hershey, PA: Idea Group Inc.
- Alfawareh, H.M. & Jusoh, S.(2014). Smartphones usage among university students: Najran university case. *International journal of academic research*. Vol.6. No.2(3) 321- 326.
- Alrasheedi, M and Capretz, L F (2015). Determination of Critical Success Factors Affecting Mobile Learning: A Meta-Analysis Approach. *TOJET: The Turkish Online Journal of Educational Technology* 14(2): 41–51.
- Amenya, A.M. (2009). Higher education in Ghana. Retrieved from <http://www.ghanawem/Home Page/News Archive/article.php?ID=160902>.
- Baike, L. (2012). On the use of cell phones and other electronic device in the classroom evidence from a survey of faculty & students. Retrieved from ERIC:<http://eric.ed.gov/id=EJ894136>
- Betteridge, J. (2016), *Answering Back: The Telephone, Modernity and Everyday Life, Media, Culture and Society* 19 (1):585-603.
- Cederagren, S. and Hellman, K. (2012). *Smart phone applications: The future tool for learning?* An unpublished B.Sc. thesis of Royal Institute of Technology: Stockholm.
- El-Hussein M.O.M and Cronje, J.C. (2010). Defining Mobile Learning in the Higher

Education Landscape. *Educational Technology & Society: Faculty of Informatics and Design, Cape Peninsula University of Technology, Cape Town* (online). 13(3) 12-21.

Available WWW.<http://ebSCOhost.com>. (Accessed date August 15, 2017).

Ericsson. (2016). Ericsson Mobility Report. [Online] Available at: <http://www.ericsson.com/res/docs/2016/ericssonmobility-report-2016.pdf> Accessed 20 Aug. 2017.

Fong, Michelle W.L.(2009). Technology Leapfrogging for Developing Countries. Pp-3707-3713.

John, F. (2012). Motivations for using the mobile phone for mass communications and entertainment. *Telematics and informatics* 12(1), 42-52.

Khadka, T.(2017).(9thed.). *Contemporary Issues*.Kirtipur : J.B.Publication.

Kulik, C.L., & Kulik, J.A. (1991). Effectiveness of computer-based Instruction: An updated analysis. *Computers in Human Behavior*, 7, 75-94.

Livingston, A. (2009). The Revolution No One Noticed: Mobile Phones and Multimobile Services in Higher Education. *Educause Quarterly*, 32(1).

Pea, R., & Maldonado, H. (2006). WILD for learning: Interacting through new computing devices anytime anywhere. In Sawyer, K. (Ed.). *Cambridge handbook of the learning sciences*. New York: Cambridge University Press. 427-442.

Shrestha, S., J. Moore, and J. Abdelnour-Nocera, "The English Language Teaching and Learning Challenges in Public Schools of Nepal: Teacher's Diary Study,"

Proc. IfIP WG9.4 Conference: Social Implications of Computers in Developing Countries, 2011.

"Smartphone". *Phone Scoop*. Retrieved August 15, 2017.

<https://en.wikipedia.org/wiki/Smartphone>

Woodcock, B., Middleton, A. and Nortcliffe, A. (2012), "Considering the smart phone learner: an investigation into student interest in the use of personal technology to enhance their learning", *Student Engagement and Experience Journal*, Vol. 1 No. 1, pp. 1-15.

CHAPTER 2

LITERATURE REVIEW

There are a large number of reports and theoretical works carried out on smartphones. In many of them, researchers have identified the various issues of smartphones. This literature review focuses on the academic use of smartphones, especially in the university settings.

The use of smartphone for learning is a part of e-learning. E-learning refers to the use of information and communication technologies to enable the access to online learning/teaching resources. In its broadest sense, Abbad et al (2009), defined E-learning to mean any learning that is enabled electronically. They however narrowed this definition down to mean learning that is empowered by the use of digital technologies. This definition is further narrowed by some researchers as any learning that is internet-enabled or web-based.

Smartphones have been used in educational activities to access course content, acquire information related to students' performance, and to encourage discussion and sharing between students and teachers (Cochrane, 2010).

Alfawareh & Jusoh (2014) studied the trends in smart phone usage among university students in Saudi Arabia. The study was related to expiring the trends in smartphone usage for learning. Learning activities were related to usage for learning such as login to academic portal, use blackboard, download class materials, taking and recording lecture notes using smartphones. The findings suggest that university students in Saudi Arabia did not fully utilized smart phone for learning purposes.

According to Algahtani (2011), the computer-based learning comprises the use of a full range of hardware and software generally that are available for the use of Information and Communication Technology and also each component can be used in either of two ways: computer managed instruction and computer-assisted-learning.

According to Almosa (2001), the Internet-based learning is a further improvement of the computer-based learning, and it makes the content available on the Internet, with the readiness of links to related knowledge sources, for examples e-mail services and

references which could be used by learners at any time and place as well as the availability or absence of teachers or instructors.

Bomhold (2013) described the educational use of smartphone technologies, particularly mobile apps, by undergraduate university students enrolled in an information literacy course. This study found that the most frequently used application categories were “social and communication”, “search engines”, “tools and productivity”, “games or music”, “sports or other entertainment” and “reference or libraries”. The apps that had little use or no ownership included “hobbies”, “casual reading”, “finance and banking” and “shopping”. Although the use of search engines was very low (only 10.4 per cent) among the most frequently used apps, they were used by the students most frequently to find academic information. A significant number (75.0 per cent) of students reported using apps to find academic information. The findings of this study revealed that the academic apps that the students used most often were familiar to them, and these apps allowed portable access to popular academic websites that students generally access on their personal computers.

Du and Lin (2012) maintained security of the institution’s networks and enabling access by many kinds of device, challenges university, IT departments to the point where some simply disallow access by certain types of device and operating systems.

Goffman(1990) stressed the importance of interaction in social process and places special emphasis on how people represent themselves as acceptable person. According to him, the interaction is guided by a “frame” that defines the signs and forms of interaction possible in that situation. We consider the mobile communication of teenagers to be what Goffman terms as “Mobile Culture”.

Froese, *et al.* (2012) employed a self-report survey to assess students' cell phone activity in classes and their expectations of the effects of such activity on learning outcomes. In October through December, 2009, 693 students at seven colleges and universities across the United States participated in the study. It was found out that cell phones distract students from learning and it confirmed that students expect texting to disrupt their classroom learning. However, having only 6 minute to complete the survey pressure might affect the results derived from their answers.

North et al. (2014), focused on the use and role of mobile phones among South African university students. Four main categories were used to examine students' mobile phone use: reasons to use mobile phones, pattern of mobile phone use, purchasing factors and behavior-related issues. The key findings indicate that the main reasons of South African university students (mainly from the university of Cape Town) use a mobile phone was for socializing as well as safety and privacy purposes, usability and price emerged as the top purchasing factors. Differences on mobile phone use by gender were found with female students showing increased mobile phone use for safety and socializing.

Ogunyemi (2010) found that African teenagers' mobile phone usage was greatly affected by their parents in other ways too, an increased bill from excessive use would lead to scrutiny by their parents therefore forcing the students to use their phones less than they intended.

Robbery and crime are very prevalent in South Africa (Schönteich & Louw, 2011), therefore it is not surprising that students regard safety as one of the primary reasons for using a mobile phone, in order to contact someone in an emergency (Walsh et al., 2010).

Wang et al. (2007) the development of multimedia and information technologies, as well as the use of Internet as a new technique of teaching, has made radical changes in the traditional process of teaching.

Zeitoun (2008) classified this by the extent of such features use in education, mixed or blended more, assistant mode, and completely online mode. The assistant mode supplements the traditional method as needed. Mixed or blended mode offers a short-term degree for a partly traditional method. The completely online mode, which is the most complete improvement, involves the exclusive use of the network for learning.

Use of smartphone in Nepalese context

Nepalese educational institutions are primarily structured at school and university level. Schools run from pre-primary level to grade 12. Grades 11 and 12 are referred to as the higher secondary level. Universities and other tertiary institutions offer

undergraduate to PhD level programs Schools and undergraduate colleges tend to be located in remote areas.

Tribhuvan University (TU) and Kathmandu University (KU) have policies that are designed to support the use of computer technologies for open and distance education students. TU has taken some initiatives to integrate information and communication technology (ICT) in higher education. TU Faculty of education offers teacher preparation course (B.ED in ICT) and Faculty of Management offers Bachelor of Information Management (BIM).

Smartphone learning based on new developments in mobile technology is an emerging trend in Nepalese higher education. Smartphone devices might be an alternative technology to integrate information and communication technologies in Nepalese education.

There is a scarcity of research studies on smartphone learning in Nepal. No formal research reports appear to have been published. However, there are a few magazine, journal and blog articles.

Bishowkarma (2007) stated that he did not find any formal research on mobile learning in Nepal. His article published in *Sikshak* magazine shed some light on the issue. He pointed out threats and prospects for mobile learning in Nepalese schools. Based on a field survey carried out by *Sikshak* magazine inside the Kathmandu valley and other districts (Tanahu, Biratnagar and Jhapa), he reported that a large number of school students beyond grade 6 had carried mobile phones in class. Schools had attempted to ban mobile phones in but these attempts have been mostly unsuccessful. The survey revealed both uses and misuses of mobile phones.

Policy-makers appeared to be unaware of the positive uses of digital technology inside and outside the classrooms. However, students from grades 6 to 10 have been using mobile phones secretly in their classes. The mobile penetration rate was 51.1 percent (Nepal Telecommunications Authority, 2011).

Nepal Telecommunications Authority (May, 2015) reported that the mobile penetration rate in Nepal was 86% at the end of 2014. In line with other countries, young people, including the university students, comprise the large portion of mobile subscriptions. Wider accessibility of the technology has increased the possibilities of mobile learning among Nepalese students.

The review of literature reveals that some studies have done on smartphone application and its usage in academic purposes. The present study will make an attempt to explore the perception of M.L.I.Sc. students of Central Department of Library and Information Science, Tribhuvan University about accessing information through smartphone. This study will also make an attempt regarding positive aspects and challenges for accessing information through smartphone for M.L.I.Sc. students.

2.1 Theoretical Framework

This study was guided by the constructivist theory of learning. The theory was applied because, it was closely related to the use of technology not only within the classroom environment but also beyond the classroom. A constructivist approach in the smartphone learning was relevant because this type of learning involved the active construction of knowledge. (Papert,1980)

Constructivist learning theory was conceived and developed by two major thinkers Jean Piaget and John Dewey.

This theory holds that learners are not passive recipients of knowledge but are mere active in the process. They build on previous experience in order to make sense of what they are learning. This leads to a mere student centered approach in which the students guides his own learning. (ICT, 2017)

Figure 2.1 respresents a diagrammatical representation of the theoretical framework on the m-learning constructivist environment. In a constuctivist environment, unlike the traditional way where the lecturer does all the talking and students only listen, students actually get the opportunity to take an active part in the learning process. The lecturer's role is to facilitate students' learning. Therefore, lecturers guide the learner in order to discover things on their own. In this way, students discuss with lecturers and recieve feedback instantenously.

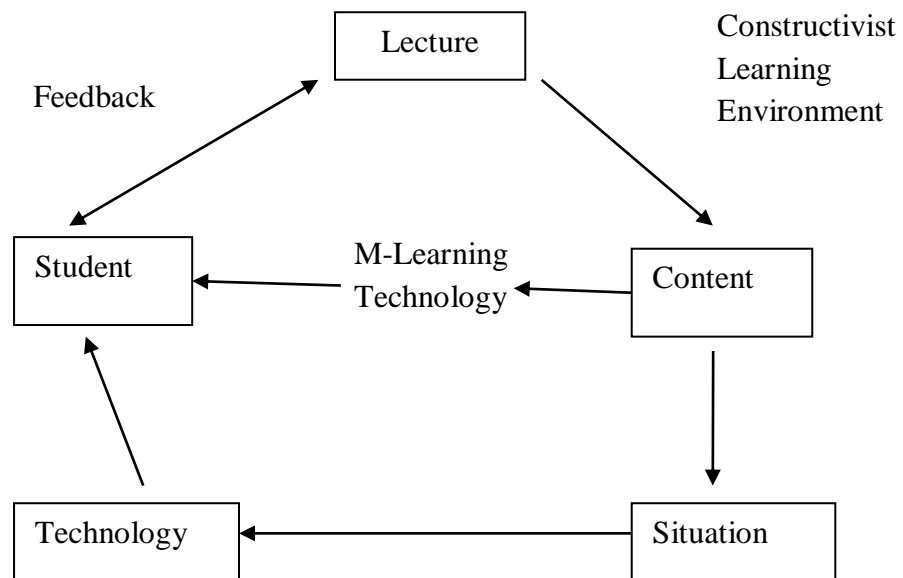


Figure 2.1: A diagrammatic representation of m-learning
Source: Adapted from Ally (2004)

From Figure 2.1, reflects that the student receives the content and understands information according to their personal experiences and collaboration with other students. The lecturer then guides and reshapes the students' experiences to meet the expected standard. The technology used in this study was the mobile phone. In a constructivist environment, teaching and learning does not end in the classroom, but goes beyond the classroom. For the sake of this study, mobile phone technologies were used either before or after lectures.

As learning is a social activity, our learning is intimately associated with our connection with other human beings, our teachers, our peers as well as our family members, including the people before us or next to us at the exhibit. We are more likely to be successful in our efforts to educate if we recognize this principle rather than try to avoid it. Much of traditional education, as Dewey pointed to, is directed towards isolating the learner from all social interaction, and towards seeing education as a one-on-one relationship between the learner and the objective material to be learned. In contrast, progressive education (to continue to use Dewey's formulation) recognizes the social aspect of learning and uses conversation, interaction with others, and the application of knowledge as an integral aspect of learning (Edward, 1987).

Self-directed and positive learning were promoted through smart-phones and users favoring mobile devices as a learning device tend to increase. This is because such system provides superior quality of learning during traveling, and customized learning is supported for each individual. Moreover, necessary information can be obtained through social networking services. Smart-phone equipped with such features can be regarded as having the best condition as an educational medium.(Marie & Carl, 2010)

Internet is one of the most important parts of smartphone which help them to access different services at any time and place. It is also an important part for the student to interact the people. The main reasons to use smartphone are to socialize, safety and privacy purpose. IT eradicates the traditional process of teaching learning process.(Acharya, 2016).

REFERENCES

- Abbad, M. et al (2009). Looking under the bonnet: Factors affecting student adoption of e-Learning systems in Jordan. *The international review of research in open and distance learning*, Vol-10(2).
- Algahtani, A.F. (2011). *Evaluating the effectiveness of the e-learning experience in some universities in Saudi Arabia from male students' perceptions*. A doctoral thesis of Durham University, England.
- Almosa, A. (2002). *Use of computer in education*, (2nd ed). Riyadh: Future Education Library.
- Andrew Nusca (August 20, 2009). *Smartphone vs. feature phone arms race heats up; which did you buy?* ZDNet. Retrieved December 15, 2011.
- Balakrishnan, V. & Raj, R. G. (2012). Exploring the relationship between urbanized Malaysian youth and their mobile phones: A quantitative approach. *Telematics and Informatics*, 29(3), 263–272.
- Bishowkarma, B. (2007). Mobile in the class. *Sikshak*, 3(36), 18–22.
- Bomhold, C. (2013), “Educational use of smart phone technology: a survey of mobile phone application use by undergraduate university students”, *Program: Electronic Library and Information Systems*, Vol. 47 No. 4, pp. 424-436.
- Cochrane, T. (2005). “Mobilizing Learning: A primer for utilizing wireless palm devices to facilitate a collaborative learning environment. Proceedings of

ASCILITE 2005. Paper presented at the 22nd ASCILITE conference, Brisbane. Retrieved from http://www.ascilite.org.au/conferences/Brisbane05/blogs/proceeding/16_cochrane.pdf

Crompton, H (2013). The Benefits and Challenges of Mobile Learning. *Learning & Leading with Technology*, September/October 2013: 38–39.

Dahlstrom, E. (2012), *ECAR Study of Undergraduate Students and Information Technology 2012*, EDUCAUSE Center for Applied Research, available at: <http://net.educause.edu/ir/library/pdf/ERS1208/ERS1208.pdf> (accessed 30 May 2015).

Du, S and Lin, J (2012). Research on System Design and Security Management for Campus Mobile Learning. 2012 IEEE International Conference on Computer Science and Automation Engineering (CSAE). Retrieved from: <http://dx.doi.org/10.1109/CSAE.2012.6273001>

EMarketer (2014). Smartphone users worldwide will total 1.75 billion in 2014 <http://www.emarketer.com/Article/Smartphone-Users-Worldwide-Will-Total-175-Billion-2014/1010536> assessed on the *August 15, 2017*.

Elusoji, A. A. et al. (2015). *Android based mobile learning environment based system-a case study of undergraduates learners*. A case study published by Yaba College of Technology, Nigeria.

"Feature Phone". *Phone Scoop*. Retrieved August 15, 2017.

Froese, A. D., Carpenter, C. N., Inman, D. A., Schooley, J. R., Barnes, R. B., Brecht, P. W., and Chacon, J. D. (2012). Effects of classroom cell phone use on expected and actual learning. *College Student Journal*, 46(2), 323-332.

Retrieved from

<http://web.a.ebscohost.com/ehost/pdfviewer?vid=5&sid=c47a113c-266f-4e8a-9da84c55fc6c2d2f%40sessionmgr4001&hid=4106>

Hong, F.-Y., Chiu, S.-I., & Huang, D.-H. (2012). A model of the relationship between psychological characteristics, mobile phone addiction and use of mobile phones by Taiwanese university female students. *Computers in Human Behavior*, 28(6), 2152–2159.

Marie, J. and Carl, v. (2010). "The use of Mobile Phones in enhancing Academic performance in Distance Education: An African's perspective. Pp.33-38.

Nepal Telecommunications Authority (March, 2011). *Management information system*, 112(64). Retrieved from <http://www.nta.gov.np/en/mis-reports-en>.

Nepal Telecommunications Authority (May, 2015). *Management information system*, 126(78). Retrieved from <http://www.nta.gov.np/en/mis-reports-en>

North, D., Johnston, K., and Ophoff, J. (2014). The use of mobile phones by South African university students. *Issues in Informing Science and Information Technology*, 11, 115-138.

NTC (2016) *Annual Report*, Kathmandu: NTC.

Ogunyemi, O. (2010). *Consumption and (in)appropriate use of mobile phone among teenage Africans in the UK*. Lincolnshire, England.

Papert, S.(1980). *Mindstorms:Children, Computers and Powerful Ideas*. Brighton : Harvester Press.

The Kathmandu Post (2017). Mobile telephony market's explosive growth continues. Retrieved September 9, 2017, from <http://www.ekantipur.com/the-kathmandu-post/2011/06/12/money/mobiletelephony-markets-explosive-growthcontinues/222813.html>

Upadhaya R.P (2004) Tourism and Environment in the Mount Everest Region. *The Geographical Review*, 15: 93-95.

Walsh, S., White, K., and Young, R. (2010). Needing to connect: The effect of self and others on young people's involvement with their mobile phones. *Australian Journal of Psychology*, 62(4), 194–203.

Wang, Y.S.et al. (2003). Determinants of user acceptance of internet banking: an empirical study. *International journal of service industry management*, Vol-14, pp-501–519.

Yang, N. and Arjomand, L. H. (1999). Opportunities and challenges in computer-mediated business education: an exploratory investigation of online programs. *Academy of educational leadership journal*. Vol-3 (2), pp-17-29.

Zeitoun, H. (2008). *E-learning: concept, issues, application, evaluation*, Riyadh: Dar Alsolateah Publication.

CHAPTER 3

RESEARCH METHODOLOGY

To achieve the set of objectives of the study, the following methodology was adopted:

3.1 Research Design

Quantitative data was collected from the research questions. For collection of data through quantitative data-likert-type, yes/no type, multiple choice and rank order were used. Observation method are also used to supplement the data collected through the questionnaire.

3.2 Population

The population frame of the research comprised all the students of first and third semesters of MLIS students 2017. The total number was consisted of 36 students.

3.3 Sampling Procedure

Census method was used for collecting data i.e. those students who were willing to participate in the seminar of smartphone use in academic activity was taken in the sampling process. A set of questionnaires was used to collect the data from the respondents as questionnaire was the tool. Such questionnaire was distributed to the students having smartphones and also asked them to answer. The researcher was present as a facilitator to explain the questions that the students found difficulty to understand. Then the researcher collected the filled-up questionnaires and analyzed them for further process

3.4 Data Collection Procedure

Researcher collected the data from the primary sources by using a set of questionnaire. Before doing a survey, a plan was made to conduct the survey. The sampling plan was divided into the following four steps:

Step 1: Half day seminar was organized for the interested students having smartphone and willing to participate in the survey of use of smartphone in academic purpose.

Step 2: In the seminar, lectures were provided regarding potential use of smartphone in academic purpose.

Step 3: Participants were given the questionnaire to express their opinion as given in the questionnaire.

Step 4: Filled up questionnaire was the sample from the total population.

For secondary sources of data, the researcher visited the libraries, reference books, and web-pages.

Variables and Measures

Variables:

A variable is something that can be changed, such as a characteristics of persons, things, events, ideas, feelings or value.

- A variable which gets changed because of independent or other variables is known as dependent variable.
- A variable which is not affected by any other variables under study but rather brings changes to other variable is called independent variable.

Measures:

Measures is an instrument for measuring the data. Such as open ended questions, yes or no questions, etc.

One set of questionnaire was designed for collecting data. There were different sections in the questionnaire for collecting quantitative data. The first section of quantitative data aimed to collect information for characteristics of the respondents i.e. age, gender, status, etc. These were collected through single measures. The subsequent sections aimed to collect information on usefulness of smartphone (brand,

purpose, time, etc), smartphone for academic purpose (purpose in academic, reasons, etc), academic related application (applications, storage apps, reading apps, operating system, etc), internet on smartphone (internet connection, frequency of internet, search engine, information access through internet). These were collected through yes/no question, multiple choice questions, etc.

3.5 Data Analysis Procedure

This was exploratory study, the data analysis was done to get descriptive information. To address the research questions, responses to all the items were compiled. A set of questionnaires was used to collect the data from the respondents. The results were analyzed, interpreted, and presented systematically using descriptive statistics such as tables and percentage using the software SPSS. Diagrams were presented where appropriate.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

The data was collected through questionnaire. It was analyzed, interpreted, and presented systematically using descriptive statistics such as measures of central tendency, tables and percentage using the software SPSS. Diagrams were presented where appropriate.

4.1 Academic and Demographic Information

In academic and demographic information, status, gender and age group of the students were presented. They were as follows:

4.1.1 Status

The status of the respondents was as follows:

Table 1: Status of the respondents

| Status | | Count |
|----------|----------------|-------|
| Semester | First Semester | 23 |
| | Third Semester | 13 |

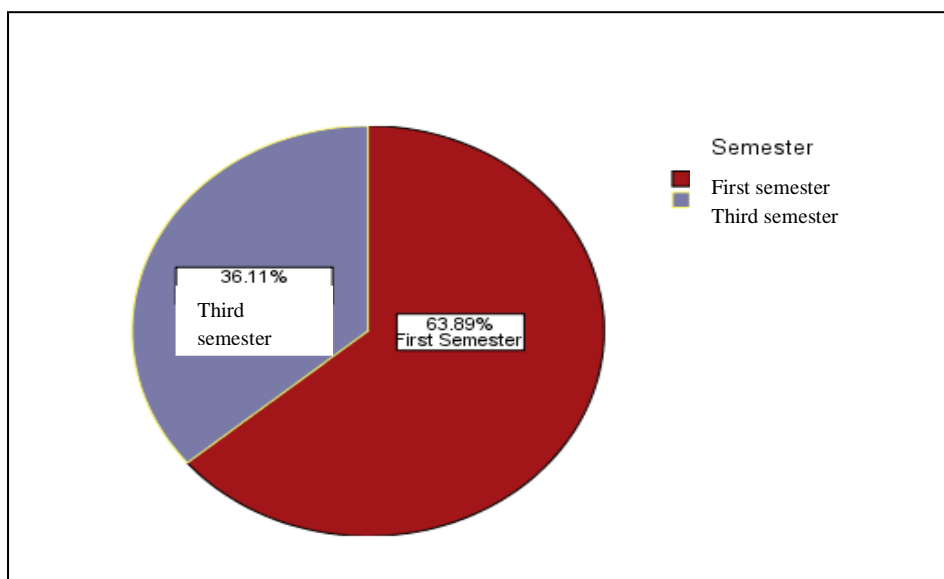


Figure 1 Status of the respondent

Total respondents were 36, among them 23(63.89%) respondents are from first semester and 13 (36.11%) respondents were from second semester.

4.1.2 Age Group

The age groups of the respondents are as follows:

Table 2 Age groups of the respondents

Table 2 Age group

| | Count |
|-----------------|-------|
| Age group 20-30 | 27 |
| 30-40 | 6 |
| Above 40 | 3 |

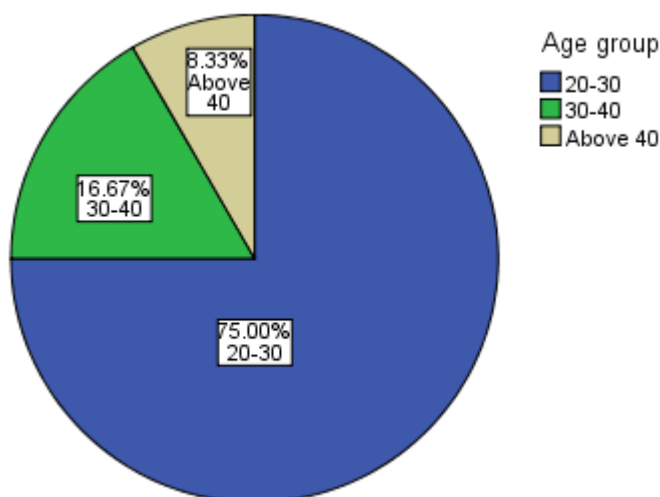


Figure 2 Age groups of the respondent

Total respondents were 36, among them most of the respondents i.e. 27 (75%) fall into the age group 20-30. In the age group 30-40 there were 6(16.67%) respondent. 3(8.33%) students were above 40.

Most of the students were between 20-30, who were very much habitual of using smartphone for the academic purposes.

4.1.3 Gender

The genders of the respondents were as follows:

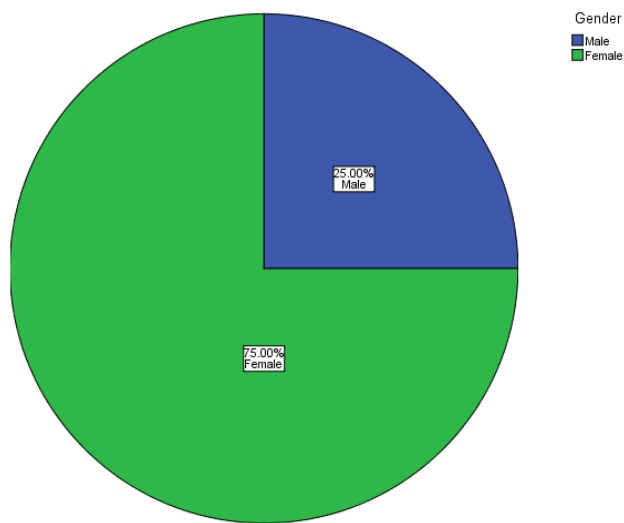


Figure 3 Gender

Figure 3, shows that most of the respondents 75% were female and 25% were male. Hence it can be concluded that female are more interested in learning Library and Information Science than male.

4.2 Information Regarding Use of Smartphone

Now-a-days smartphone has been used by almost all the students. To know the uses/purpose of smartphone, the respondents were asked different questions which were as follows:

4.2.1 Brand of Smartphone

The respondents were asked about the brand of smartphone.

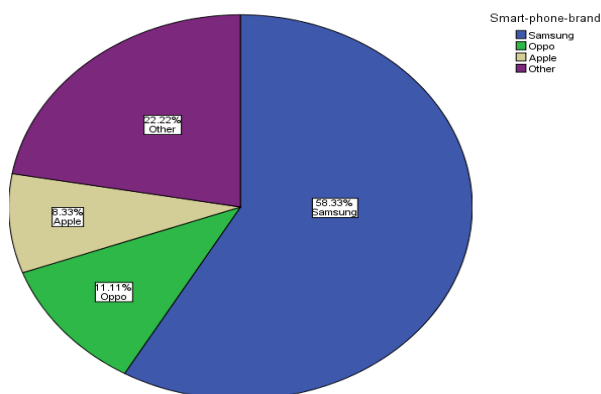


Figure 4 Brand of Smartphone

There were number of smartphone brands available in the market of Nepal. Ranging from Apple to Samsung. Among the participants, the largest group (58.33%) used Samsung, the next largest group (11.11%) used Oppo and other smartphone brands(22.22%). The data indicate that only a few respondents (8.33%) used Apple phones, as they are more expensive than the others.

4.2.2 Use of Smartphone by University Students

The use of smartphone by university students were as follows:

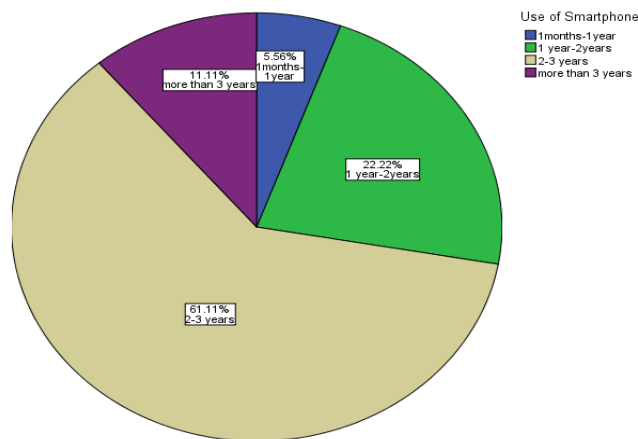


Figure 5 Use of Smartphone

As shown in figure 5, the largest group (61.11%) of students had been using smartphones for 2-3 years. The next largest group (22.22%) had been using smartphone for 1-2 years followed by 1month to 1year (5.56%). And few students (11.11%) had been using smartphones for more than 3 years at the time of this study.

4.2.3 Purpose of Using Smartphone

The different purpose used by the university students were as follows:

Table 3 Purpose to use smartphone

| | | Responses | |
|---------------------------|---------------|-----------|---------|
| | | N | Percent |
| purpose to use smartphone | Study | 26 | 18.1% |
| | Email | 20 | 13.9% |
| | Internet | 23 | 16.0% |
| | Entertainment | 25 | 17.4% |
| | Greeting | 5 | 3.5% |
| | Communication | 24 | 16.7% |
| | Alarm | 21 | 14.6% |
| Total | | 144 | 100.0% |

Table 3 indicates that the main purpose of the smartphone was to study (18.1%), followed by entertainment (17.4%) and Communication (16.7%).

4.2.4 Smartphone help in Classroom

The use of smartphone as well as helpfulness in the classroom.

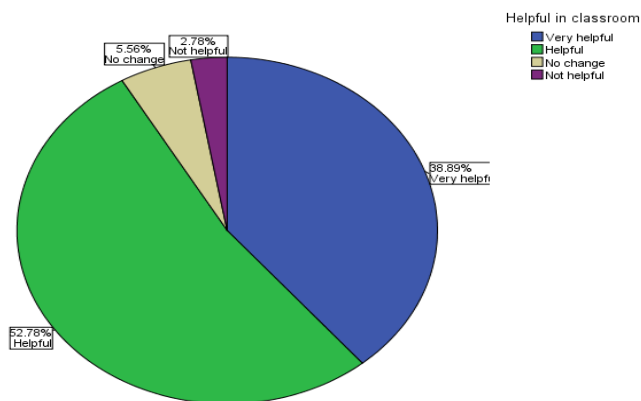


Figure 6 Helpfulness of smartphone

The above data shows most (52.78%) of the users said that the smartphone is helpful in their classroom, 38.89% respondents claimed that it is very helpful, however 5.56% respondents claimed no change and a few 2.78% respondents said smartphone is not helpful in their classroom.

4.3 Smartphone For Academic Purpose

4.3.1 Smartphone for academic purpose

| | | Responses | |
|--------------------------------------|----------------------------|-----------|---------|
| | | N | Percent |
| use in academic purpose ^a | Reading full-text articles | 6 | 9.1% |
| | Recording class notes | 8 | 12.1% |
| | Preparing class routine | 3 | 4.5% |
| | Watching learning videos | 24 | 36.4% |
| | Library references | 20 | 30.3% |
| | Other | 5 | 7.6% |
| Total | | 66 | 100.0% |

Table 4 Smartphone for academic purpose

The above table shows that the largest group (36.4%) stated that they watch learning videos, the next largest group used them for library references(30.3%), followed by those who used smartphones for recording class notes (12.1%), reading full text articles (9.1%) and for preparing class routine (4.5%). The rest of the students (7.6%) gathered other academic information through their smartphones.

4.3.2 Downloading Apps

It is one of the systems in smartphone. It can only be success with the help of internet. There are different apps which could help for the academic purpose. The students who download the apps are as follows:

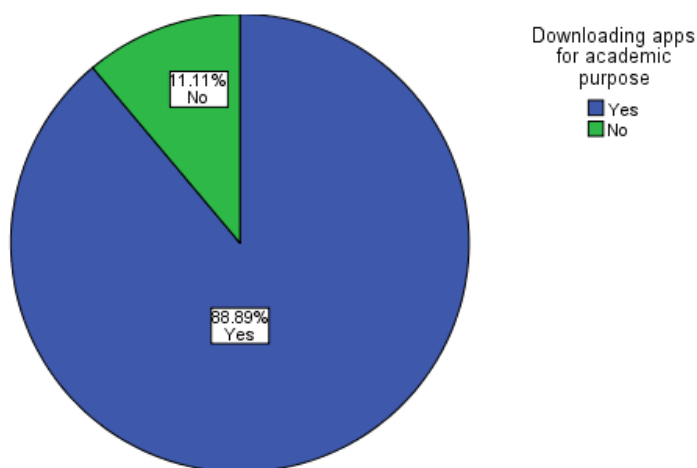


Figure 7 Downloading apps for academic purpose

Among all participants, the vast majority (88.89%) was interested in downloading apps on their smartphone for academic purpose.

4.3.3 Frequency of Agreement with Statements and Importance of Smartphones

Respondent are asked whether they use their smartphone or not for academic purpose and how important they feel smartphone could help in achieving their academic goal.

a)Group:

| Perception of helpfulness of Smartphone | Yes(in %) | No(in %) |
|--|-----------|----------|
| 1. Facilitating learning | 97.22% | 2.78% |
| 2. Saving time and increasing productivity | 91.67% | 8.33% |
| 3. Develop skill and training | 88.89% | 11.11% |
| 4. Finding up-to- date information | 97.22% | 2.78% |

Table 5 Perception of helpfulness of Smartphone

The table indicates that the highest helpfulness factor of Smartphone were facilitating learning and finding up-to- date information(97.22%) followed by saving time and increasing productivity (91.67%) and Develop skill and training (88.89%).

b) Group

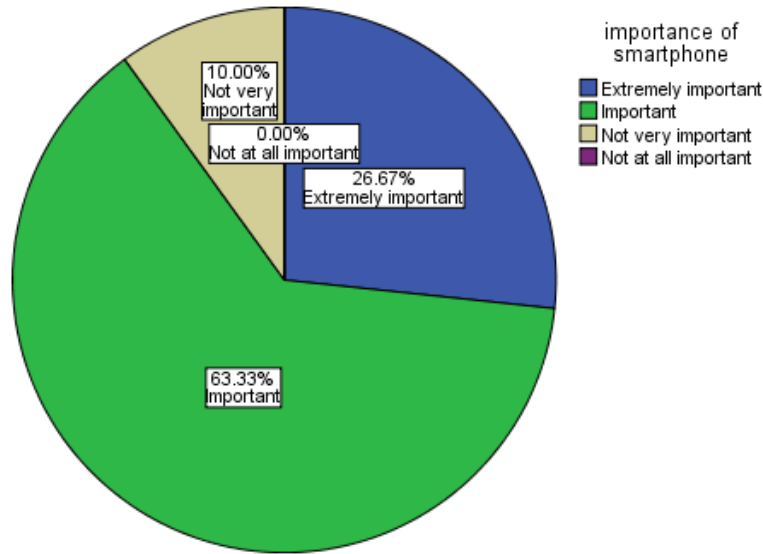


Figure 8 Smartphone help to achieve academic goal

In the above figure 8 to figure 11, regardless of whether the participants use their smartphone for academic purposes or not, there was a highly favorable agreement across the board with regard to statements about smartphones being used for academic work. Overall, the respondents were very positive about the possibility of using smartphones for academic purposes.

Again, from the results presented in figure 12, it is indicated that the largest group (63.33%) of students stated that smartphones are “important” for academic purposes. The next largest group (26.67 %) thought that they are “extremely important”. Only a few students felt that they are either “not very important” (10.00 %) or “not at all important” (0.00 %) for academic work.

The survey instrument asked the students the application they attempted to use in academic purpose. They were provided with the following list of applications:

- a) TED
- b) Evernote
- c) Cam scanner
- d) Easy Bib
- e) Mendeley
- f) One note

The table given below shows frequency distribution of applications and ranking it according to usefulness:

Table 6 Applications used by the students

| Application used in academic purpose | Code | Count | % of responses | Rank |
|---|-------------|--------------|---------------------------|-------------|
| TED | 1 | 5 | 13.8 | 4 |
| Evernote | 2 | 2 | 5.5 | 6 |
| Cam scanner | 3 | 7 | 19.4 | 3 |
| Easy Bib | 4 | 8 | 22.2 | 2 |
| Mendeley | 5 | 10 | 27.7 | 1 |
| One note | 6 | 4 | 11.1 | 5 |
| Total responses | | 36 | 100 | |

The table indicates that the highest use of application in academic purpose were Mendeley (27.7%) followed by Easy bib (22.2%) and cam scanner (19.4%).

Reasons to Use Smartphone

The responses of the respondents about the reasons to use smartphone are as follows:

Table 7 Reasons to use Smartphone

| | | Responses | |
|--|-------------|------------------|----------------|
| | | N | Percent |
| Reasons to use smartphone ^a | Socializing | 36 | 62.1% |
| | Safety | 14 | 24.1% |
| | Privacy | 7 | 12.1% |
| | Other | 1 | 1.7% |
| Total | | 58 | 100.0% |

Table 7 shows the statements pertaining to reasons to use mobile phones, the main reason of university students use a smartphone seem to be for socializing, followed by for safety and privacy purposes. A few university students use their smart phone as other purposes.

4.4 Academic Related Application

4.4.1 Academic related application

The academic related application use in smartphone by the respondent were as follows:

Table 8 Academic related application

| | | Application Frequencies | |
|------------------------------|------------------|-------------------------|---------|
| | | Responses | |
| | | N | Percent |
| Academic related application | Dictionary | 23 | 28.8% |
| | Calculator | 13 | 16.2% |
| | Google Docs | 19 | 23.8% |
| | Mendeley | 5 | 6.2% |
| | Polaris Office | 1 | 1.2% |
| | Voice recording | 15 | 18.8% |
| | Callibre library | 4 | 5.0% |
| Total | | 80 | 100.0% |

Table 8, shows that most of the respondents 28.8% used dictionary in their smartphone followed by 23.8% used google docs, 18.8% of them used voice recording, 16.2% of them used calculator, and very few of them used 6.2% mendeley, 5.0% callibre library and 1.2% polaris office.

4.4.2 Storage Apps Used in Smartphone

The storage apps used by respondents in their smartphones were as follows:

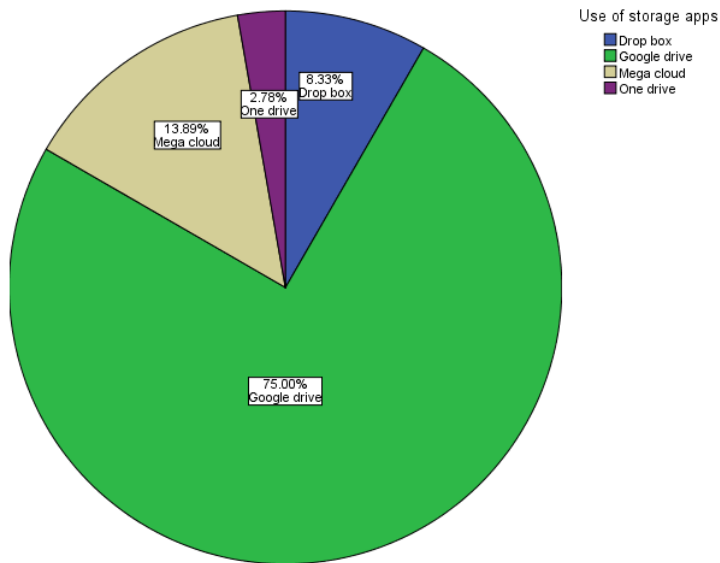


Figure 9 Use of storage apps

In the above figure, most of the respondents 75.00% used google drive, 13.89% used mega cloud, similarly 8.33% used drop box and few respondents 2.78% used one drive apps in their smartphone.

4.4.3 Reading Apps in Smartphone

The responses of the respondents on what reading apps are they used in their smartphone which are as follows:

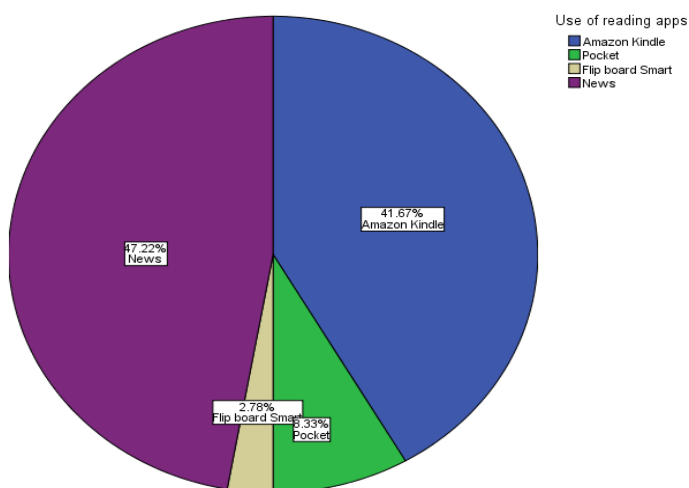


Figure 10 Use of reading apps

The above data shows that 47% of the respondents used news for reading, 41.67% used amazon kindle, 8.33% used pocket and 2.78% used flip board smart reading apps in their smartphone.

4.3.4 Operating system in smartphone

The responses of the respondents on what operating system are they used in their smartphone which are as follows:

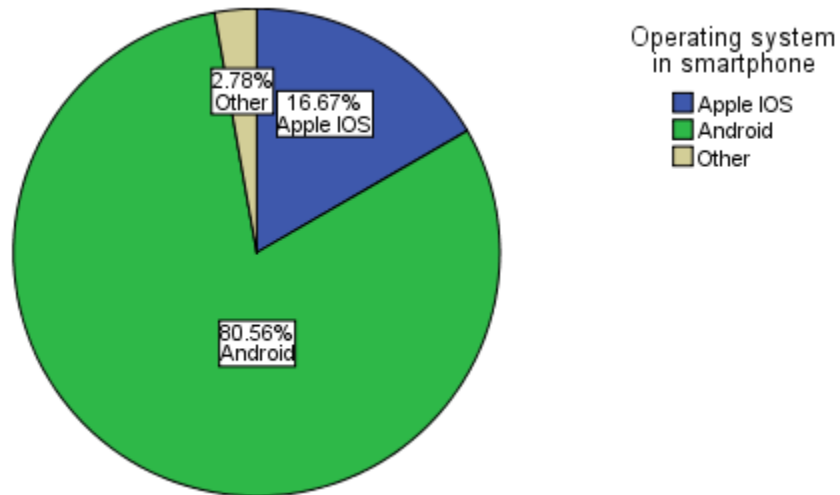


Figure 11 Use of operating system

The above figure shows that most of the respondents 80.56% used android, followed by 16.67% apple IOS and very few of them used other type of operating system in their smartphone.

4.3.5 Smartphone for recording classnotes

Respondents are asked how often did they use smartphone for recording class notes which are as follows:

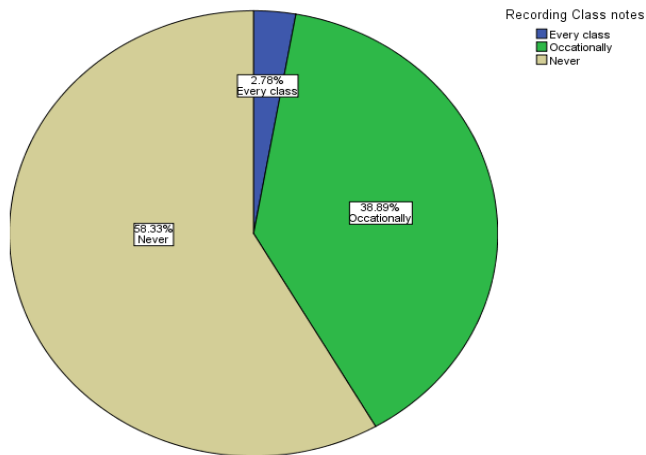


Figure 12 Smartphone for recording class notes

The above figure shows that most of the respondents 68.33% never used their smartphone for preparing their classnotes, however 38.89% of them were used occasionally and very few of them 2.78% of them used in every class.

4.5 Internet in smartphone

Internet is one of the most important part of the smartphone. Respondents were asked whether they use internet or not? If yes where they use and how they access? Responses are as follows:

4.5.1 Access of internet

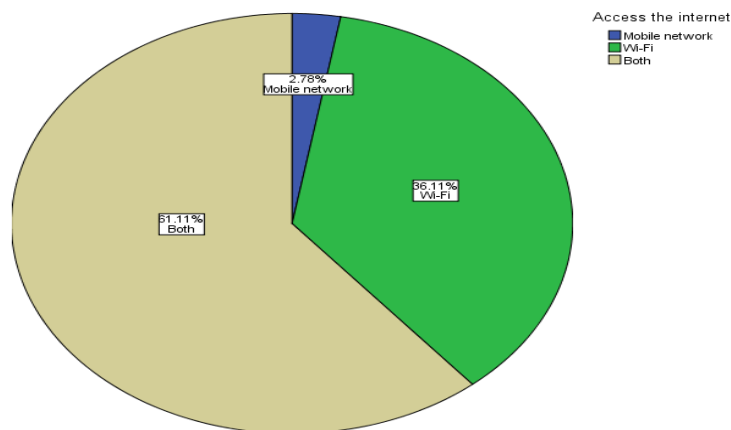


Figure 13 Access of internet

All respondents indicated that they used the internet on their smartphones. As shown in figure 17, the largest group of participants 61.11% accessed the internet via both mobile network and Wi-Fi connections. The next largest group 36.11% used only Wi-

Fi networks for accessing the internet, followed by those who accessed the internet only through their mobile networks 2.78%.

4.5.2 Frequency of internet access

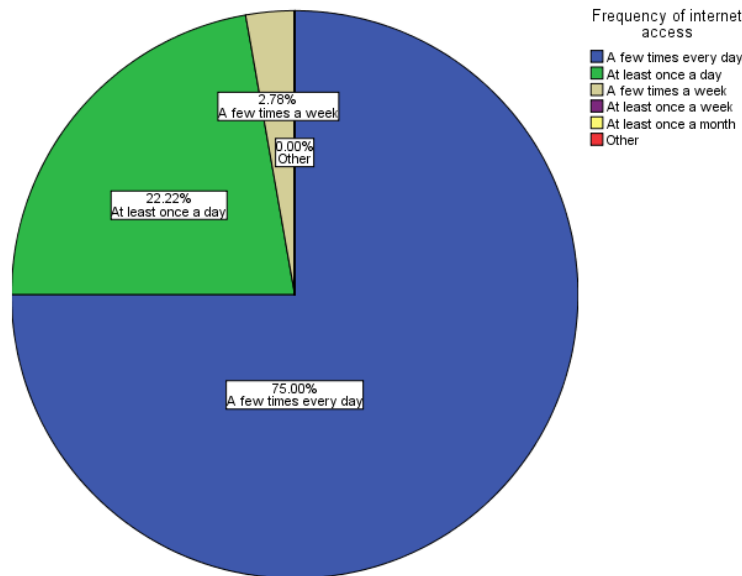


Figure 14 Frequency of internet access

Figure 14 shows that the largest group 75.00% of students accessed the internet a few times every day using their smartphones. The next largest group 22.22% used the internet at least once a day, followed by those who accessed the internet a few times a week 2.78%, and other 0.00%.

4.5.3 Search engine in Smartphone

The responses of respondents on what are the search engine did they prefer for information access, which were as follows:

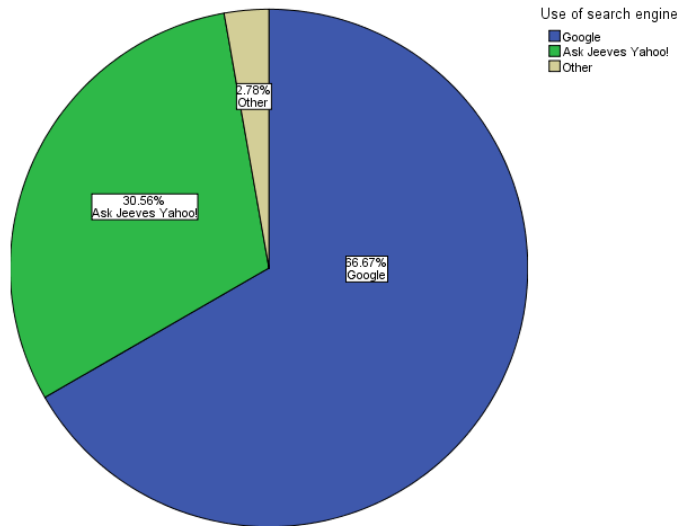


Figure 15 Search engine in smartphone

Among the participants, the largest group 66.67% used Google as their preferred search engine. The next largest group 30.56% used ask jeeves yahoo. The remaining respondents 2.78% used other search engines for accessing the internet in their smartphone .

4.5.4 Access of information on internet

The respondents were asked about the access of information on internet in their smartphone, which are as follows:

Table 9 Access of information through smartphone

| | | Responses | |
|-----------------------|-------------------------|-----------|---------|
| | | N | Percent |
| Access of information | Academic | 28 | 26.7% |
| | Sports | 5 | 4.8% |
| | Music | 19 | 18.1% |
| | Entertainment | 19 | 18.1% |
| | Social networking sites | 26 | 24.8% |
| | News | 7 | 6.7% |
| | Other | 1 | 1.0% |
| Total | | 105 | 100.0% |

Information Frequencies

| | | Responses | |
|-----------------------|-------------------------|-----------|---------|
| | | N | Percent |
| Access of information | Academic | 28 | 26.7% |
| | Sports | 5 | 4.8% |
| | Music | 19 | 18.1% |
| | Entertainment | 19 | 18.1% |
| | Social networking sites | 26 | 24.8% |
| | News | 7 | 6.7% |
| | Other | 1 | 1.0% |
| Total | | 105 | 100.0% |

In the above table, to inquire about the type of information accessed through their smartphones, the largest number of respondents 26.7% indicated that they used them for accessing academic information, followed by those who used them for accessing social media sites 24.8%, music and entertainment 18.1% and reading news 6.7%. A few participants 1.0% noted that they used their smartphones for other purposes.

CHAPTER 5

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The purpose of the study was to investigate the utilisation of Smartphone on enhancing satisfactions and learning style and its problems of using smart phone by the students of M.L.I.Sc. in Central Department of Library and Information Science. To address the issues it was adopt both qualitative and quantitative research design and sample population was select from Centre Department of Library and Information Science. This chapter presents a summary of findings and conclusion drawn from the study. It also makes recommendations for action and suggests area for further study to improve upon the utilization of Smartphone in learning. This study examined how library students are using mobile computing devices such as the iPhone and other android device in library education and practice, and how they envision them being used in the future. However, this type of study in the field of library and information science is new research work and it will help to improve the further study of students in the use of smartphone.

5.1. Findings

Findings brought to very insight information with much to learn about students use and appropriation of smartphone. By investigating, all the students uses the smartphone in masters level. The age groups were between 20 to 30 (75%). The brands of the smartphone which they used were samsung. Most of the students used smartphone for 2 to 3 years (61.11%). 80.56% of them were used android operating system. The reasons behind it were to study, entertainment, and also to communicate with their family and friends. Most of them said smartphone is helpful in the classroom.

Maximum of them were used it for academic purpose. As they record audio of the class notes, library references, and watching learning videos. And the next reasons were for socializing and safety. On socializing most of the students used facebook and viber and for safety they prefer SMS. Smartphone has become the web enable devices that constantly connected to the internet. Most of the students used internet than just

phone calls or sms. Largest group (75%) of students accessed the internet a few times every day using their smartphones. Students used smartphone occasionally to prepare their classnotes. As they installed lots of applications in their phone, most of the applications (88.89%) were for academic purpose. They installed self-empowerment applications like Dictionary (28%), Google Docs (23%), Voice recording (18.8%), Calculator (16%), Mendeley(6.2%), Callibre library(5%) and Polaris office (1.2%). The storage applications were Google drive (75%), Megha cloud (13.89%), Drop box (8.33%), and One drive (2.78%). Most of the student used reading applications like News(47%), Amazon Kindles(41.67%), Pocket(8.33%) and Flip board smart(2.78%).

5.2. Conclusion

Smartphones are becoming increasingly common in both personal and professional spheres. In particular, the smartphone's potential as an educational tool is an area which is starting to gain recognition. University students utilized smart phones as a regular mobile phone, as a computer with an internet connection. The results in this study suggest that students use smartphones and social media for their education even though this technology has not been formally included in the curriculum. This might present an opportunity for educators to design educational methods, activities, and material that are suitable for smartphones and allow students to use this technology, thereby accommodating students' current diverse learning approaches.

In conclusion, it appears most library students believe a smartphone would be a useful addition to their education, although financial barrier must be overcome before the device is more universally accepted.

5.3 Recommendations

Based on the finding and conclusions of the study, the following recommendations were made.

- This study was limited in only 36 students from two semesters of library and Information Science Department. More research should be done in the other faculty.

- Department should incorporate smartphone learning application so as to promote smartphone learning among the students.
- Department must be more alive to their responsibilities by ensuring conformity to the college laid down rules and regulations on student's use of smartphone device during class session.
- The lecturer/professors should give orientation on the use of smartphones especially for information to maximize their use as an aid to learning processes.
- Campus should provide wi-fi facilities so that students can use the internet without worrying the mobile data charges.

REFERENCES

- Abbad, M. et al (2009). Looking under the bonnet: Factors affecting student adoption of e-Learning systems in Jordan. *The international review of research in open and distance learning*, Vol-10(2).
- Alfawareh, H.M. & Jusoh, S.(2014). Smartphones usage among university students: Najran university case. *International journal of academic research*. Vol.6. No.2(3) 321- 326.
- Algahtani, A.F. (2011). *Evaluating the effectiveness of the e-learning experience in some universities in Saudi Arabia from male students' perceptions*. A doctoral thesis of Durham University, England.
- Ally, M. (2005). Multimedia information design for mobile devices. In M. Pagani (Ed.), *Encyclopedia of multimedia technology and networking*. Hershey, PA: Idea Group Inc.
- Almosa, A. (2002). *Use of computer in education*, (2nd ed). Riyadh: Future Education Library.
- Alrasheedi, M and Capretz, L F (2015). Determination of Critical Success Factors Affecting Mobile Learning: A Meta-Analysis Approach. *TOJET: The Turkish Online Journal of Educational Technology* 14(2): 41–51.
- Amenya, A.M. (2009). Higher education in Ghana. Retrieved from <http://www.ghanawem/Home Page/News Archive/article.php?ID=160902>.
- Andrew Nusca (August 20, 2009). *Smartphone vs. feature phone arms race heats up; which did you buy?* ZDNet. Retrieved December 15, 2011.
- Baike, L. (2012). On the use of cell phones and other electronic device in the classroom evidence from a survey of faculty & students. Retrieved from ERIC:<http://eric.ed.gov/id=EJ894136>

- Balakrishnan, V. & Raj, R. G. (2012). Exploring the relationship between urbanized Malaysian youth and their mobile phones: A quantitative approach. *Telematics and Informatics*, 29(3), 263–272.
- Betteridge, J. (2016), *Answering Back: The Telephone, Modernity and Everyday Life*, *Media, Culture and Society* 19 (1):585-603.
- Bishowkarma, B. (2007). Mobile in the class. *Sikshak*, 3(36), 18–22.
- Bomhold, C. (2013), “Educational use of smart phone technology: a survey of mobile phone application use by undergraduate university students”, *Program: Electronic Library and Information Systems*, Vol. 47 No. 4, pp. 424-436.
- Cederagren, S. and Hellman, K. (2012). *Smart phone applications: The future tool for learning?* An unpublished B.Sc. thesis of Royal Institute of Technology: Stockholm.
- Crompton, H (2013). The Benefits and Challenges of Mobile Learning. *Learning & Leading with Technology*, September/October 2013: 38–39.
- Dahlstrom, E. (2012), *ECAR Study of Undergraduate Students and Information Technology 2012*, EDUCAUSE Center for Applied Research, available at: <http://net.educause.edu/ir/library/pdf/ERS1208/ERS1208.pdf> (accessed 30 May 2015).
- Du, S and Lin, J (2012). Research on System Design and Security Management for Campus Mobile Learning. 2012 IEEE International Conference on Computer Science and Automation Engineering (CSAE). Retrieved from: <http://dx.doi.org/10.1109/CSAE.2012.6273001>
- El-Hussein M.O.M and Cronje, J.C. (2010). Defining Mobile Learning in the Higher

Education Landscape. Educational Technology & Society: *Faculty of Informatics and Design, Cape Peninsula University of Technology, Cape Town* (online). 13(3) 12-21.

Available WWW.<http://ebSCOhost.com>. (Accessed date August 15, 2017).

. Elusoji, A. A. et al. (2015). *Android based mobile learning environment based system-a case study of undergraduates learners*. A case study published by Yaba College of Technology, Nigeria

Emarketer (2014). Smartphone users worldwide will total 1.75 billion in 2014

<http://www.emarketer.com/Article/Smartphone-Users-Worldwide-Will-Total-175-Billion-2014/1010536> assessed on the August 15, 2017.

Ericsson. (2016). Ericsson Mobility Report. [Online] Available at: <http://www.ericsson.com/res/docs/2016/ericssonmobility-report-2016.pdf> Accessed

20 Aug. 2017.

"Feature Phone". *Phone Scoop*. Retrieved August 15, 2017.

Fong, Michelle W.L.(2009). Technology Leapfrogging for Developing Countries. Pp-3707-3713.

Froese, A. D., Carpenter, C. N., Inman, D. A., Schooley, J. R., Barnes, R. B.,Brecht,

P. W., and Chacon, J. D. (2012). Effects of classroom cell phone use on expected and actual learning. *College Student Journal*. 46(2). 323-332.

Retrieved from

<http://web.a.ebSCOhost.com/ehost/pdfviewer?vid=5&sid=c47a113c-266f-4e8a-9da84c55fc6c2d2f%40sessionmgr4001&hid=4106>

Hong, F.-Y., Chiu, S.-I., & Huang, D.-H. (2012). A model of the relationship between

- psychological characteristics, mobile phone addiction and use of mobile phones by Taiwanese university female students. *Computers in Human Behavior*, 28(6), 2152–2159.
- John, F. (2012). Motivations for using the mobile phone for mass communications and entertainment. *Telematics and informatics* 12(1), 42-52.
- Khadka, T.(2017).(9thed.). *Contemporary Issues*.Kirtipur : J.B.Publication.
- Kulik, C.L., & Kulik, J.A. (1991). Effectiveness of computer-based Instruction: An updated analysis. *Computers in Human Behavior*, 7, 75-94.
- Livingston, A. (2009). The Revolution No One Noticed: Mobile Phones and Multimobile Services.
- Marie,J.&Carl,v.(2010).”The use of Mobile Phones in enhancing Academic performance in Distance Education:An African’s perspective. Pp.33-38.
- Nepal Telecommunications Authority (March, 2011). *Management information system*, 112(64). Retrieved from <http://www.nta.gov.np/en/mis-reports-en>.
in Higher Education. *Educause Quarterly*, 32(1).
- Nepal Telecommunications Authority (May, 2015). *Management information system*, 126(78). Retrieved from <http://www.nta.gov.np/en/mis-reports-en>
- North, D., Johnston, K., & Ophoff, J. (2014). The use of mobile phones by South African university students. *Issues in Informing Science and Information Technology*, 11, 115-138.
- Ogunyemi, O. (2010). *Consumption and (in)appropriate use of mobile phone among teenage Africans in the UK*. Lincolnshire, England.
- Pea, R., & Maldonado, H. (2006). WILD for learning: Interacting through new

computing devices anytime anywhere. In Sawyer, K. (Ed.). *Cambridge handbook of the learning sciences*. New York: Cambridge University Press. 427-442.

Shrestha, S., J. Moore, and J. Abdelnour-Nocera, "The English Language Teaching and Learning Challenges in Public Schools of Nepal: Teacher's Diary Study," Proc. IfIP WG9.4 Conference: Social Implications of Computers in Developing Countries, 2011.

"Smartphone". *Phone Scoop*. Retrieved August 15, 2017.

<https://en.wikipedia.org/wiki/Smartphone>

The Kathmandu Post (2017). Mobile telephony market's explosive growth continues. Retrieved September 9, 2017, from <http://www.ekantipur.com/the-kathmandu-post/2011/06/12/money/mobiletelephony-markets-explosive-growthcontinues/222813.html>

Upadhaya R.P (2004) Tourism and Environment in the Mount Everest Region. *The Geographical Review*, 15: 93-95.

Walsh, S., White, K., & Young, R. (2010). Needing to connect: The effect of self and others on young people's involvement with their mobile phones. *Australian Journal of Psychology*, 62(4), 194–203.

Wang, Y.S.et al. (2003). Determinants of user acceptance of internet banking: an empirical study. *International journal of service industry management*, Vol-14, pp-501–519.

Woodcock, B., Middleton, A. and Nortcliffe, A. (2012), "Considering the smart phone learner: an investigation into student interest in the use of personal technology to enhance their learning", *Student Engagement and Experience Journal*, Vol. 1 No. 1, pp. 1-15.

- Yang, N. & Arjomand, L. H. (1999). Opportunities and challenges in computer-mediated business education: an exploratory investigation of online programs. *Academy of educational leadership journal*. Vol-3 (2), pp-17-29.
- Zeitoun, H. (2008). *E-learning: concept, issues, application, evaluation*, Riyadh: Dar Alsolateah Publication.

ANNEXURE-1 Questionnaire

Dear Participants, I am collecting data through following questions to fulfill the requirements of MLISc thesis entitled “**The Use Of Smartphone By Masters Of Library And Information Science Students In Central Department Of Library And Information Science.**”

I would like to request you to complete the questionnaire. The information provided by you will be kept confidentially and will be used only for this research. Your cooperation will be very much helpful for completing this study.

Section A: Academic and demographic information

Name of the student:

1. Faculty/Institute:

2. Status: 1st semester 3rd semester

3. Gender: Male Female

4. Age group: 21-24 years 25-29 years above 30

Section B: Smartphone use

5. Which brand of smartphone do you use currently?

Samsung Oppo

Apple Other, please specify

6. How long have you been using the smartphone?

1- 6 months 6 months to 1 year

1- 2 years 2-3 years

More than 3 years

7. How long do you use the smartphone a day?

below 30 minutes, 30 to 60 minutes, 60 to 120 minutes, above 120 minutes

8. For what purpose do you use the smartphone? (You can select multiple options.)

Study E-mail Internet Entertainment(Game,Music)
 Greeting message Communicate to family alarm

9. How helpful would it be to use a smartphone in your classroom?

Very helpful Helpful No change Not helpful

10. Is smartphone stimulate/encourage your curiosity?

Yes No

11. Are you satisfied your life with the use of Smartphone?

Yes No

Section C: Smartphone for academic purpose

12. If you have used your smartphone for academic purposes, for what purposes do you use your smartphone? (You can select multiple options.)

Reading full-text articles Recording class notes
 Preparing class routine Watching learning videos
 Library references Other, please specify.

13. Would you be interested in downloading apps for academic purposes?

Yes No

14. Regardless of whether you use your smartphone for academic purposes or not:

(a) Do you think a smartphone could help:

Facilitate learning? Yes No

Save time and increase productivity? Yes No

Skill development and training? Yes No

Finding up-to-date information? Yes No

(b) Overall, how important do you feel a smartphone could help you in achieving your academic goal?

Extremely important Important
 Moderately important Not very important
 Not at all important Do not know

15. What are the reasons to use smartphone?

Socializing Safety Other

16. On socializing, what apps do you use?

Facebook Viber WeChat

17. On safety, what apps do you use?

SMS Panic alarm Crime mapping

Section D: Academic related application

18. What are the self- empowerment application you use in smartphone?(You can select multiple option)

Dictionary Calculator Google Docs Mendelev
 Polaris office Voice recording Callibre library

19. What are the storage apps you use in your smartphone?

Drop box Google drive Mega cloud One drive

20. What are the reading apps do you use in smartphone?

Amazon Kindle Pocket Flip board Smart
 News

21. Which operating system do you use in your smartphone?

Apple IOS Android Other

22. Do you use smartphone for recording class notes? If yes how often?

Every class Occasionally Never

23. Do smartphone improve your academic work/study performance?

Yes No

24. If yes, rank the application do you use for academic purpose:

Note: 1=Low and 7=High

- | | |
|---------------|---------------|
| a. TED | 1:2:3:4:5:6:7 |
| b. Evernote | 1:2:3:4:5:6:7 |
| c. CamScanner | 1:2:3:4:5:6:7 |
| d. EasyBib | 1:2:3:4:5:6:7 |
| e. Mendeley | 1:2:3:4:5:6:7 |
| f. One note | 1:2:3:4:5:6:7 |
| g. Dropbox | 1:2:3:4:5:6:7 |

Section E: Internet in Smartphone

25. Do you use the Internet on your smartphone? Yes No

26. If yes, how do you access the Internet?

Mobile network Wi-Fi Both

27. Where do you use internet connection most in your smartphone?

At college At home

28. Do you share your smartphone's Internet connection with other devices such as a tablet or laptop? Yes No

29. How frequently do you access the Internet via your smartphone?

A few times every day At least once a day

A few times a week At least once a week

At least once a month Other, please specify.

30. Which search engine do you prefer to use on your smartphone for information access?

Google Ask Jeeves Yahoo!

Other, please specify.

31. What types of information on the Internet do you generally access through your smartphone? (You can select multiple options.)

Academic Sports Music Entertainment

Social networking sites News Other, please specify.

Thank You

Nirmala Subedi

Researcher.