IMPACT OF STUDENTS DIGITAL LITERACY ON INFORMATION USE BEHAVIOR

A Thesis Submitted to the Department of English Education

In Partial Fulfilment for the Master of Education in English

Submitted by

Regan Shrestha

Faculty of Education

Tribhuvan University, Kirtipur

Kathmandu, Nepal

2019

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DECLARATION

I hereby declare that to best of my knowledge this thesis is original; no part of it was earlier submitted for candidature of research degree to any university.

Date: 28-04-2019 …….....

Regan Shrestha

RECOMMENDATION FOR ACCEPTANCE

This is to certify that **Mr. Regan Shrestha** has completed his thesis entitled **Impact of Students Digital Literacy on Information Use Behavior** under my guidance and supervision.

I recommend the thesis for acceptance.

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DEDICATION

This thesis is dedicated to my parents, siblings and teachers whose unyielding love, support and encouragement have enriched my soul and inspired me to pursue and complete this research.

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ABSTRACT

This research entitled **Impact of Students digital literacy on Information Use Behavior** was an attempt to identify the digital literacy level of students and its impact on their information use behavior. This study aimed to investigate campus level students' digital literacy, its impact on their information use behavior and to compare students' information use behavior in digital and non-digital environment. The sample for this study consisted of forty students of Nilkantha Multiple Campus, Nilkantha-3, Dhading and simple random sampling method was used to select the sample population. To fulfil the objectives of this study, a survey design was used to collect the data. A questionnaire including open-ended and closed-ended questions as a tool of survey research was administered to the students of Bachelor level to collect the data. The data have been analyzed both quantitatively and qualitatively following simple statistical tools as well as item analysis. The research findings reveal that a large number of students are able to access and integrate digital information in their learning process and create new information whereas they lacked the ability to evaluate information, consider ethical aspects and give proper citation and reference. Comparing the information use behavior in digital and non-digital environment, it is found out that the purpose of seeking any information and types of information they preferred for learning in digital and non-digital environment is same. Except them all other aspects related to information use behavior differed. This denotes that students lack and need to be provided proper knowledge on information use behavior in digital environment.

This thesis is organized into five chapters. The first chapter deals with background of the study, statement of the problem, objective of the study, research questions, significance of the study, delimitations of the study and operational definitions of the key terms. The second chapter incorporates review of the related literature, implications of the review for the study and conceptual framework. In the same way, third chapter presents design of the

study population of the study, sample and sampling strategies, data collection tools, data collection procedures and data analysis and interpretation procedures. The fourth chapter deals with the analysis, discussion and interpretation of results. Fifth chapter deals with findings, conclusion and recommendations in terms of three different areas, i.e. policy, practice and further research related. The final part of the thesis consists of references and appendices.

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ACRONYMS AND ABBREVIATIONS

CALL	-	Computer Assisted Language Learning
CAN	-	Computer Association Nepal
CD	-	Compact Disk
ELT	-	English Language Teaching
ICS	-	Internet Connectivity to the School
ICT	-	Information Communication Technology
ICTHRD	-	Information Communication Technology Human Resource Development
ICTID	-	Information Communication Technology Infrastructure Development
IDCD	-	Interactive Digital Content Development
IT	-	Information Technology
M. Ed.	-	Master's in Education
B. ED	-	Bachelor in Education
NCF	-	National Curriculum Framework
SSDP	-	School Sector Development Plan
SSRP	-	School Sector Reform Program
SWA	-	Sector Wide Approach
T.U.	-	Tribhuvan University
TPD	-	Teacher Professional Development
UNESCO	-	United Nations Educational, Scientific and Cultural Organization

CHAPTER ONE
INTRODUCTION

The present research aimed to explore the impact of students' digital literacy on their information use behavior and compare students' information use behavior in digital and non-digital environment. This chapter deals with background of the study, statement of the problem, objectives of the study, research questions, significance of the study, delimitations of the study and definition of operational terms which are specific to this research study.

1.1 Background of the Study

Digital literacy refers to an individual's ability to find, evaluate, produce and communicate clear information through writing and other forms of communication on various digital platforms. Digital literacy includes use of digital devices such as smartphone, tablets, laptops and desktop PCs. Digital literacy initially focused on digital skills and stand-alone computers but now its focus has shifted to network devices including the Internet and use of social media. Digital literacy does not replace traditional forms of literacy, instead builds upon the skills that form the foundation of traditional forms of literacy. People use digital media for a range of activities like exploring, connecting, creating, and learning.

In today's world, it is a requirement to be digitally literate in order to be capable and more successful. Digital literacy helps to function effectively whether it is at home, school, at our jobs or even looking for a job. It has become unavoidable in learning as it helps students with learning their lessons in an interesting way as well as enhances creativity and productivity of the learners. Our environment has evolved into a digital environment and it is essential to be digitally literate to become successful in this digital environment. Almost everything we do today requires some sort of digital knowledge or literacy to be successful from surfing the internet, searching for a job to being able to perform our jobs.

DigEuLit (2006) has identified that Digital literacy is the ability to succeed in encounters with the electronic infrastructures and tools that make possible the world of the twenty-first century. Digital literacy has become a central enabling agent in the educational enterprise, as a result of a number of trends.

The utilization of Information and Communication Technology (ICT) in education has recently started to appeal the potential and significant process in language teaching and learning. The use of ICT in teaching and learning fosters Computer Assisted Language Learning (CALL), nearly appeared in 1980s including the activities like CDs, teaching computer programs, computer test and encyclopedias. Education is furiously adopting electronic means to enhance its quality. The students of present era should have ability, knowledge and skills to cope with modern technology since educational sector is highly influenced by digitalization.

Information and communication technologies (ICTs) have penetrated all areas of contemporary life. In this context, digital literacy comprises a set of basic skills which include the use and production of digital media, information processing and retrieval, participation in social networks, creation and sharing of knowledge, and a wide range of professional computing skills. The present world is becoming e-permeated, means that the people having the knowledge of electronic devices are benefited in terms of opportunities, success, employment, education and other aspect of life. Thus, there is the demand of digital citizens, who are responsible for how they utilize technology to interact with the world around them.

Traditionally, literacy is defined as print-based knowledge. The ability to read and write printed documents was known as literacy in the past. Early descriptions of computer-related literacy also focus on the acquisition of sets of rules and technical capabilities. However, by the end of the 20th century, this definition had expanded considerably. According to the working definition, agreed at the UNESCO June 2003 Expert Meeting in Paris, “literacy is the

ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts".

Lanham (1995, as cited in Lankshear & Knobel, 2006, p. 198) claims that literacy has extended its semantic reach from meaning 'the ability to read and write' new meaning 'the ability to understand information however presented'. This means with the innovation on modern science and technology, the definition of the literacy does not confine to traditional view; ability to read and write rather it accepts the ability to deal with Information Communication Tools.

Wagner and Kozma (2009, as cited in Horning, 2012, p. 79) point out that technology is changing what it means to be a literate person. They go on to note that in addition to basic reading and writing skills and state:

> New skills are needed to: search for, organize and manage information; interpret and analyze data, work with distributed teams; communicate with others and to use information to solve problems and create new knowledge and cultural artifacts. With these skills, citizens of today's world will be better prepared to search for, create and use information to extend their education, and to advance their economic, health and living conditions.

Thus, with the increasing digitalization in present era, the term literacy comprises of digital literacy, electronic literacy, critical literacy and information literacy. The ability to use ICT and the Internet becomes a new form of literacy- "digital literacy". In this regards Martin (2005) says:

> Digital literacy is the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to

> identify, assess, manage, integrate, evaluate, analyze and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others and enable to constructive social action in order to reflect upon this process (p. 135).

It means digital literacy is the ability to use digital tools, analyze the information and construct new information. It is a prerequisite for creativity and innovation without which students as well as teachers can neither participate fully in society nor acquire the skills and knowledge necessary to live in the 21st century. It enables students to encounter with electronic devices and tools to make their work easier, faster and comfortable. It changes the way students seek for information and use them in their daily works and learning as information use behavior in digital and non-digital environment differs according to the level and skills of learners. Digital literacy of the learners determines the information use behavior of learners in digital environment or context.

1.2 Statement of the Problem

It is very essential for the learners to have knowledge and skills on operating digital technologies to achieve success in learning. Only the learners who are familiar with modern digital world can survive smoothly in this 21st century world. Learners familiar with digital tools learn in effective manner, gains information faster and have high possibility to get any kind of job or occupation. Learners need to be conscious of their level of use of digital devices and then they should consider the purpose, medium, way of using digital devices for information seeking as well as use behavior. So, it is needed to address the issues related to digital literacy of students.

Digital advancement in teaching and learning has brought paradigm shift in present scenario of teaching and learning process. Information use behavior in the digital and non-digital environment differs in learner in every aspects of information use behavior. Teachers as well as students should have knowledge, skills and abilities to deal with digital devices and enhance information use behavior for accomplishing purposeful tasks. Both the teaching and learning processes have been influenced by the use of digital devices like computer, smart phone and technologies. Digital literacy and information use behavior involves a complex process from purpose of information search, path of collection, information types, information use and criteria of evaluation. Thus, it is necessary to evaluate ones digital literacy level for information use behavior.

According to Chapelle (2003), besides having effective and faster positive impact on students' achievement compared to conventional learning activities, technology-based learning activities offer more advantages and opportunities for natural learning. The increased availability and use of technology by children is potentially advantageous to the educational environment. However, access to technological tools is not useful if the student is not proficient in applying them in a practical environment. So, students' digital literacy and its impact on information use behavior need to be examined.

Digital literacy is the current trend of literacy in our context. The learners should have digital literacy to participate in digital learning in order to increase their learning pace and rate of success. Digital literacy and second or foreign language instruction should be integrated, and not taught separately. Digital literacy is now an essential skill for participation in today's digital world. The use of digital tools and ICTs in Nepalese ELT context is increasing day by day. Teaching and learning methods are being digitalized. Hence, nowadays, digital literacy becomes an interesting area of study in the field of educational research. Several studies have been carried out in this area but no study has analyzed the effect of digital literacy on information use behavior. So, this

study addresses the issue of finding out the digital literacy level of the B.Ed. level students and its impact on their information use behavior as well as compares their information use behavior in digital and non-digital environment.

1.3 Objectives of the Study

The objectives of the study were as follows:

a) To explore students' digital literacy level and its impact on information use behavior;

b) To compare students' information use behavior in digital and non-digital environment; and

c) To suggest some pedagogical implications.

1.4 Research Questions

This study was guided by the following research questions:

a) How does digital literacy level of students impact their information use behavior?

b) To what extent students' information use behavior differs in digital and non-digital environment?

1.5 Significance of the Study

The present study is beneficial and significant to those who are involving and interested in digital literacy in general and digital literacy for learning in particular. The study provides students with knowledge on their digital literacy level and its impact on information use behavior. It provides information on the differences in information use behavior of students in digital and non-digital environment and as well as provide teachers with the competence that a student needs to be provided when dealing with digital learning.

The outcomes of this study assist learners in adopting a framework that promotes foundational concepts to accessing information, information management, evaluating information, integration and communication in an authentic way. The outcomes of this study assist the learners to know about their information use behavior in digital environment.

This research study is beneficial for learners of modern era. They get chance to be familiar with digital literacy, differences in their information use behavior in digital and non-digital environment and impact of students digital literacy on information use behavior. Regarding educators, my study helps them to digitalize their teaching and learning activities. Furthermore, it is very significant for syllabus designers to design digital literacy oriented syllabus, trainers to conduct trainings and seminars by considering level of digital literacy and other stakeholders to be digital citizens in modern era.

1.6 Delimitations of the Study

Delimitations are boundaries that are set by the researcher in order to control the range of a study. They specify the information related to research design, population, sample, sampling strategies, and study area and data collection tools. This study focused only on students' self-reported performance level regarding their information use behavior, impact of digital literacy on their information use behavior and comparison of their information use behavior in digital and non-digital environment. It was specific to B.Ed. level students of English specialization, Nilkantha Multiple Campus, Dhading. Moreover, the research design was survey. I used simple random sampling strategy for selecting sample from representative population. The sample included forty students of Bachelor level in English specialization. To collect the required data, I employed questionnaire including both closed-ended and open-ended questions as the main research tool. Moreover, I analyzed the collected data statistically and descriptively.

1.7 Operational Definitions of the Key Terms

The operational definitions of some key terms used in this research study are presented below:

Digital literacy: Digital literacy has been defined as the ability to find, decode, evaluate, and organize information into personal learning networks. It is the ability to use digital devices and facilities to identify, assess, communicate, create, analyze, and construct knowledge and information, not just being literate at using a computer or digital devices.

Digital citizen: Digital citizen refers to people who utilize information technology in order to engage in education, occupation, social works, politics or any field.

Digital devices: Digital devices refer to modern electronic devices used by digital citizens such as computer, mobile, tablet, e-book and smart phone used for participating in lifelong e-learning.

Digital literacy areas: In this study, digital literacy areas refer to different literacies like Network literacy, Technical literacy, Media literacy, Information literacy etc. essential in the 21st century era.

Digital literacy skills: In this study, digital literacy skills refer to self-reported skills of the students which include cultural skill, cognitive skill, and communicative skill, confident, creativity, critical and civic skill.

Digital literacy level: In this study, digital literacy level refers to self-reported ability of the students to access, use and produce new information in digital environment.

Digital technology: Technology in which data is processed, stored, transmitted, displayed and created is called digital technology.

E-learning: E-learning refers to the web based learning, learning using internet or electronic facilities that is supported or enabled by the use of digital tools and content.

Information use behavior: In this study, information use behavior is defined as a series of individual actions, such as resource type selection and frequency or time spent using the equipment and resources.

CHAPTER TWO
REVIEW OF THE RELATED LITERATURE AND CONCEPTUAL FRAMEWORK

This section includes the review of related theoretical and empirical literature along with the implication of literature review. Furthermore, it deals with conceptual framework of the study.

2.1 Review of Related Theoretical Literature

The review of related literature provides clear concepts about research work. The researcher conceptualizes the whole ideas to carry out the research in scientific and systematic way. This section provides widen area of body of knowledge of theoretical perspectives related to digital literacy, digital citizenship, digital literacy areas, digital literacy skills, elements of digital literacy, importance of digital literacy for students and teachers, impact of digital literacy in teaching and learning, and review of policies and provisions for enhancing ICT in education in context of Nepal.

2.1.1 Concepts of Digital Literacy

Digital literacy is variously referred to as internet literacy, multimedia literacy, cyber literacy, online literacy, and information literacy. It may also be defined as a capacity supporting the user in engaging in social and cultural activities through the utilization of various media. Hobbs (2010) argues that digital media literacy is related to the ability to use a computer, social media, and the internet, and people with high levels of digital media literacy are more active in social affairs and better able to express their opinions. Van Deursen and Van Dijk (2009) have demonstrated that differences in the level of digital literacy depend mainly on age and education level. Generally, a digitally literate person is able to search and understand desired information, express and share opinions or thoughts freely, and have a better understanding of those of others.

Eshet-Alkali and Amichal-Hamburger (2004) consider digital literacy as a kind of a comprehensive framework for expressing the technological, social, and cognitive skills required in a digital environment. Tyner (1998) classifies the concept of literacy indicating various abilities for using and sharing ICT and digital information into the two areas of tool literacy and symbol literacy. The former included computer literacy, network literacy, and technology literacy and the latter included information literacy, visual literacy, and media literacy.

Digital literacy is the ability to 'understand' and 'utilize' electronic resources including those concepts described above (Bawden 2001; Gilster 1997). Gilster (1997) refers to four essential elements of digital literacy (i.e. a combination of knowledge, Internet search, hypertext search, and content evaluation), emphasizing critical thought. Bawden (2001) has a comprehensive view of literacy under which digital literacy is more broadly defined to include the ability to identify, access, and use electronic information from networks as well as the skills to decipher texts, sounds, or images. Fastrez (2009) divides the areas of literacy into those of technical, cognitive, and social. Therefore, digital literacy refers to the ability of a person to produce and share their own knowledge, and sympathize with the knowledge produced by others.

According to the European Commission for Education and Culture (2003):

> The ability to use ICT and the Internet becomes a new form of literacy- "digital literacy". Digital literacy is fast becoming a prerequisite for creativity, innovation and entrepreneurship and without it citizens can neither participate fully in society nor acquire the skills and knowledge necessary to live in the 21st century (p. 3).

Likewise, International Technology and Engineering Educators Association (2007, as cited in Alba and Maria, 2015) mentions that literacy proficiency

involves more than reading or producing text in print. It also includes the ability to use, manage, access, and evaluate technology and digital media in order to function effectively in a global economy. It means digital literacy is not only the ability to read and write printed information but one's ability to use, manage, create and evaluate the information given in digital media.

Similarly, European Union (as cited in Belshaw, 2012) has clearly mentioned that digital literacy is "the skills required to achieve digital competence, the confident and critical use of ICT for work, leisure, learning and communication and equivocates by equating digital literacy to internet skills and using a computer" (p. 4). This definition clarifies that digital literacy is a skill which enables a person to be a digitally competent, confident and critical user of ICT as it provides essential knowledge and skills to be familiar and use any digital tools in any kinds of work or occupation.

In similar way, Eshet-Alkalai (2004) argues:

> Digital literacy involves more than the mere ability to use software or operate a digital device; it includes a large variety of complex cognitive, motor, sociological, and emotional skills, which users need in order to function effectively in digital environments (p. 1).

It means digitally literate person must have cognitive, sociological and emotional skills along with capacity to use technologies.

2.1.2 Concepts of Information Use Behavior

Information use behavior refers to the way people search for and utilize information. It is related with the investigation of how people behave in seeking and using information as a consequence of a need to satisfy some goal. It involves human behavior in relation to sources and channels of information,

including both active and passive information seeking and use. The digital world is changing human behavior and process of information seeking and use. There has been limited number of researches revealing the insights of how users utilize information from various sources and what impact of information is made to one's knowledge structure.

Information use behavior involves various aspects. Some of them are as follow:

1. **Purpose of information use**

This aspect deals with the purpose of using several digital information found across different digital resources. The purpose of using information can be writing paper, solving academic challenges, perform various projects, preparation for a class, preparation for a presentation or identifying trends.

2. **Information acquisition path**

Information acquisition path refers to the sources from where the necessary information can be obtained. It includes sources like personal collection, colleague, library, publishers and bookstores, seminars, exhibitions etc.

3. **Types of information preferred**

The types of information preferred by the digital user is another concern related to information use behavior. The types of information preferred can be books, academic article, research report, thesis, seminar data, trending information and statistics.

4. **Information selection criteria**

Information selection criteria deals with on what basis we select the information. The basis for selecting the information can be recency, ease of acquisition, reliability, accuracy and scope of provision of full text.

5. Specialized information service used

Specialized information service used takes into account different services which can provide us new and tending information. It involves use of search services, communities and blogs, trend analysis service and information consulting services.

Information use behavior is seen in digital environment as well as non-digital environment. The aspects related to information use behavior may be similar or different in terms of change in the environment. One can demonstrate similar information use behavior or can show some difference in their behavior. It depends upon users' digital literacy level and knowledge on information use behavior in different environment of information use. Therefore it is important to analyze the changes in information use behavior of the students in digital and non-digital environment.

2.1.3 Digital Citizenship

A digital citizen refers to a person utilizing information technology (IT) in order to engage in society, politics and government. Mossberger, Tolbert and Hamilton (2012) define digital citizens as "those who use the Internet regularly and effectively". Digital citizens often use IT extensively, creating blogs, using social networks, and participating in online journalism. Digital citizenship can be defined as the norms of appropriate, responsible behavior with regard to technology use. Lack of access toward becoming a digital citizen can be a serious drawback of successful life. So, to become a digitally literate person we should have digital citizenship. Ribble (2008) mentions the nine elements of digital citizenship in following ways:

1. Digital access

This is perhaps one of the most fundamental blocks to being a digital citizen. It refers to availability of internet, computers and other forms of digital

technology. However, due to socioeconomic status, location, and other disabilities- some individuals may not have digital access

2. **Digital commerce**

This is the ability for users to recognize online economy. It also deals with the understanding of the dangers and benefits of online buying, using credit cards online, and so forth. As with the advantages and legal activities, there is also dangerous activities such as illegal downloads, gambling, drug deals, pornography, plagiarism, and so forth.

3. **Digital communication**

This element deals with understanding the variety of online communication mediums such as email, instant messaging, Facebook messenger, the variety of apps, and so forth. There is a standard of etiquette associated with each medium.

4. **Digital literacy**

This deals with the understanding of how to use various digital devices. For example, how to properly search for something on a search engine? How to use various online logs? Oftentimes many educational institutions will help form an individual's digital literacy.

5. **Digital etiquette**

As discussed in the third element, digital communication, this is the expectation that various mediums require a variety of etiquette. Certain mediums demand more appropriate behavior and language than others.

6. **Digital law**

This is where enforcement occurs for illegal downloads, plagiarizing, hacking, creating viruses, sending spams, identity theft, cyber bullying, and so forth.

7. Digital rights and responsibilities

This is the set of rights digital citizens have such as privacy, speech, and so forth.

8. Digital health

Digital citizens must be aware of the physical stress placed on their bodies by internet usage. They must be aware to not become overly dependent on the internet causing eye strain, headaches, stress problems, and so on.

9. Digital security

This simply means that citizens must take measures to be safe by practicing using difficult passwords, virus protection, backing up data, and so forth.

2.1.4 Digital Literacy Areas

The discussion around digital literacy is continuously evolving. Chase & Laufenberg (2011, p. 535) state that the fluidity associated with the term, is one of the factors that defines it. According to Tiernan (2015, p. 17):

> The term digital literacy has many variations which, while often used interchangeably, is increasingly being replaced with the original term 'digital literacy' itself. Examples include digital competence (Ferrari, 2012), electronic literacy (Warschaeur, 1998), silicon literacy (Snyder, 2002), e-literacy (Martin, 2003), techno-literacy (Lankshear et al, 2000), net literacy, online literacy and new literacies (Markauskaite, 2006).

Alongside these name permutations, discussions around what it means to be digitally literate have begun to draw on other areas of influence, with some

authors arguing that digital literacy conflates to a number of “literacies of the digital” (Goodfellow, 2011). Examples include the following:

1. **Network literacy**

Network literacy is an emerging digital literacy that deals with computer network knowledge and skills. Network literacy relates to the basic knowledge and skills required for citizens to participate in the networked society. Understanding of network systems and network devices is vital for full participation in many modern societies.

2. **Technical literacy**

Technical literacy is the ability to effectively use, manage and understand technology to access, evaluate, integrate, create and communicate information to enhance the learning process through problem-solving and critical thinking.

3. **Media literacy**

Media literacy concerns with both the interpretation of media practices, and an understanding of production using media (Buckingham, 2009, p. 85). Media literacy is wide-ranging in its scope and ranges from understanding media (print and digital) in terms of decoding, evaluating and analyzing information and creating media, in terms of aesthetic appreciation, expression and competence.

4. **Computer literacy**

Computer literacy is an understanding of the concepts, terminology and operations that relate to general computer use. It is the essential knowledge needed to function independently with a computer. This functionality includes being able to solve and avoid problems, adapt to new situations, keep information organized and communicate effectively with other computer literate people.

5. Information literacy

Eshet-Alkalai (2004) defines information literacy as the “ability to locate, evaluate and use information” (p. 5), seeing information literacy as a filter which identifies false, irrelevant or biased information. The Educational Testing Service (2005) associates information literacy with the ability to “find, use, manage, evaluate and convey information effectively” (p. 1). Similarly, it is the capacity to access, manage and evaluate information from a variety of electronic and non-electronic sources to differentiate necessary and unnecessary information.

6. Social/ cultural media literacy

Social/ cultural media literacy enables interconnectedness and interaction among people via communication and sharing of information. These competences allow one to communicate in a suitable manner in the social environment of communication and sharing of content.

7. Bit literacy

Bit Literacy means developing the skills necessary to use technology in a healthy, productive way. It is the process of mastering the technology you use to do your work.

8. ICT literacy

ICT literacy has developed from the teaching of basic computer skills by IT professionals.

9. New literacies

New literacies are concerned with the understanding of information presented on social media sites and mobile devices such as letters, symbols, colors, sounds and graphics, which extend the ways in which we communicate.

10. Critical literacy

Critical literacy is concerned with critically evaluating the purposes and motivations of media productions of all kinds examining whose voice is being heard, and equally important, whose voice is not. Critical literacy involves ways of looking at written, visual, spoken, multi-media and performance texts to question and challenge the attitudes, values and beliefs that lie beneath the surface.

While much research has been carried out on the need for digital literacy, examples of digital literacy in practice are less prominent. Studies indicate that the use of digital technologies has penetrated university study (Lea and Jones, 2011), however there is little evidence around what students are currently able to achieve in relation to digital literacy, and their motivations for engaging with digital tasks. Buckingham (2009) cautions educators on simply accepting the mantra that somehow technology is good for learning and will lead to a better learning experience instead urging educators to examine why technology is being used, and how it is being used to promote genuine learning.

2.1.5 Elements of Digital Literacy

The most important elements of digital literacy are common for future computer users and ICT professionals. They are accessing, managing, evaluating, integrating, creating, and communicating information individually or collaboratively in a networked, computer- supported and web-based environment for learning, working, or leisure. Below is an overview of the relationships of digital literacy elements and basic competences.

1. Accessing information

It is defined as identifying information sources as well as having the techniques for collection and retrieval of such information. Digital literacy significantly broadens the scope of potential sources of knowledge.

2. **Information management**

This element furnishes students with information management skills to use resources whose validity and authenticity is relatively easier to assess.

3. **Evaluating information**

Evaluating information deals with making judgments about its adequacy, currency, usefulness, quality, relevance, or efficiency. It refers to being able to determine the authority or time of the information retrieved.

4. **Integration**

It is another element that involves the interpretation and representation of information using ICT tools. Here, the most challenging task is to synthesize, summarize, compare, and contrast information from multiple sources. Integration requires visual as well as verbal literacy, because texts, charts, and images have to be contrasted and interrelated.

5. **Creation of new knowledge**

It deals with generating new information digitally by adapting, applying, designing, inventing, or authoring information. ICTs are considered technical skills that support creative processes.

6. **Communication**

Finally, this element considers use of ICTs for transmitting information faster, more persuasively, and to a wider audience than any communication tool ever before.

Digital literacy has overlapping areas with Information Literacy, Media Literacy, ICT Literacy and Internet Literacy (Kirsti,2011) and all of that is composed of 8 elements; 1) Access 2) Manage 3) Integrate 4) Evaluate 5) Create 6) Communicate 7) Analysis, and 8) Synthesis.

By analyzing the elements of digital literacy, it is understood that digital literacy means the ability to use the digital technology, communication devices, and the network in digital environments to live life efficiently.

2.1.6 Importance of Digital Literacy for Students and Teachers

Teachers and students need to have digital competence to compete in this digital world. Every occupational and educational sector is affected by technology and digital literacy. Rivoltell (2008) says that the need for technology skills and knowledge in schools, the workforce, and society is an obvious extension and consequence of living in the digital environment.

Digital literacy is gaining recognition as the most valuable tool for lifelong learning with the increased importance of technology in society. Essentially, as citizens of a global society, the influence of social media, technology, and online resources is massive. For children and adults, the ever evolving tech world can either help them succeed or hold them back.

Embracing technology and digital literacy is a key factor to encourage learning from infancy through adulthood. Technology has greater importance and impact on learning and to encourage academic advancement. Regarding the importance of digital literacy to young generation Hague and Payton (2010) state:

> Digital literacy is an important entitlement for all young people in an increasingly digital culture. It furnishes children and young people with the skills, knowledge and understanding that will help them to take a full and active part in social, cultural, economic, civic and intellectual life now and in the future (p. 1).

A strong sense of digital citizenship in our students can be fostered when digitally literate teachers employ these skills in the classroom. However, the

importance and scope of digital literacy extends beyond this simple theory. Here, we've laid out seven reasons why digital literacy skills are important for today's learners and teachers:

1. **Moving beyond Google**

Google is a powerful tool. Students with access to a computer and the Internet are able to find the answers to incredibly complex problems. Simply Googling an answer does not provide students with true, deep learning. And while most students understand how to use a search engine, they should be provided with the additional skills to bring the answers to the next level.

2. **Teaching digital citizenship**

Being a good digital citizen means understanding and applying appropriate and responsible uses of internet and technology. Knowledge on academic plagiarism, i.e. anti-plagiarism policies and learning social norms that apply to online behavior, i.e. cyber bullying falls under digital citizenship

3. **Closing the digital divide**

Digital divide is the gap between those with regular, effective access to digital technologies and those without. The divide is spreading and emphasises destructive achievement gaps. Digitally literate learners advocate for change and seek innovative solutions.

4. **Expanding conceptions of the digital world**

Students may be good at using digital tool but their understanding of what these tools can do is often limited. Digitally literate students should be inspired to use today's technology as a powerful toolset to expand their learning opportunities.

For example, students use Instagram to post photos but don't think to use the platform for art or history projects. They record themselves with a voice memo

app but do not realize those apps could also be used for journalism projects or a historical narrative piece.

5. Enabling differentiation

Differentiation in the classroom is essential to meet the needs of all learners but it is time consuming. Technology can be used to mitigate learners' differences using them creatively and correctly. Teachers can lead the class through a lecture, while visual learners follow along with illustrations on their laptops and audio learners record the lecture for later review. Technology like this enables teachers to give their students choice in the kind of work they create for projects, such as a video, podcast or written story. Digital literacy is required in order to set the standards and boundaries for this kind of differentiation.

6. Making thoughtful cultural and platform decisions

Good teachers know how their students engage and learn and can use that knowledge to employ technology that will unlock new teaching potential. These skills become increasingly important in diverse classrooms in which students are bringing different cultural contexts into the mix. Both effectiveness of the content and the technologies chosen may vary according to student's familiarity with the tools and the various norms within their culture. A sensitive teacher will make digital choices that reflect these varied cultural contexts.

7. Improving the technology

Teachers can offer important pedagogical and practical insights for edtech companies developing learning technology for students. Teachers today see the need for digital solutions in their classrooms. As teachers master digital literacy with their lessons, they can collaborate with peers to share technology and work toward improving learning outcomes for their students.

Therefore, it is crucial that school and district administrators emphasize teacher digital literacy to avoid policies that simply mandate placing technology into the hands of students without thought for how that technology will be used. Digitally literate teachers see technology for all of its creative potential, rather than something they are mandated to do as fashion. Digital literacy doesn't require that teachers become experts, but it requires that they understand the digital tools that can unlock their deeper teaching potential.

2.1.7 Impact of Digital Literacy on Learning and Teaching

It's impossible to imagine a life without digital media. Digital media is found everywhere and is an important tool for professional success. Most of the current educational theories recognize the enormous potential of ICTs to personalize teaching and learning processes through making them more adaptive and interactive.

Digital pedagogy can be promoted by enhancing the teaching and learning processes through digital solutions and facilitating access to educational resources. Digital pedagogy demands a constant adaptation of tools to both teaching and learning methods. Knowledge on use of ICTs is essential for teaching, learning, assessment, management, and communication in schools. It helps in shared decision-making, information sharing, collaboration and innovation.

Moreover, it is also recognized that technology can promote democracy through open access, literacy skills through e-mail and the internet, and access to education. In this regards Meurant (2014) states:

> Opportunities for computer-mediated second language learning need to be increased, providing multimedia-capable, mobile web solutions that put the Internet into the hands of all students and teachers. Wi-Fi networked campuses allow any campus space to

> act as a wireless classroom. Every classroom should have a teacher's computer console. All students should be provided with adequate computing facilities, that are available anywhere, anytime (p. 224).

Computer-assisted language teaching and learning technique dominates the classroom activities. So, the ability to use, disseminate, share, create and communicate information and materials from digital tools and programmes is essential. It is the digital skill that creates computerization in education. Likewise, Martin (2005) says:

> Education, like other social sectors, is rapidly adopting electronic means. But the evolution of electronic tools for education has run alongside, and been to some extent fuelled by, a paradigm shift in approaches to learning and teaching. In moving towards student-centered and constructivist learning models, electronic tools are seen as key factors in realizing learning environments. Mastery of the tools thus becomes an entitlement for the student if she is to learn successfully (p. 131).

In addition, digitally literate students have more access to e-learning environments than that of digitally illiterate have. Paper of Department of E-learning on Digital Literacy (2015) has stated:

> Being digitally literate means being able to shift through so much information, being able to understand a message and to communicate it effectively to others in different formats. It means creating, collaborating, communicating, working ethically and

> understanding when, if and how technology should be used to reach efficiently an objective. So, digital literacy involves the critical use of technology. It involves the awareness of and critical analysis of agendas and possible dangers with which technology invades our daily lives. It involves educating students to move from a passive consumer of information to an active producer both as individuals and as part of a community (p. 6).

Therefore digital literacy has a greater impact on teaching and learning. It motivates students to learn from digital devices in their own pace. Similarly, it creates variation in learning techniques and motivates them to be self-directed learners. It offers distant mode of learning or online education. It enables students to communicate with students in other countries with e-mail and chat, or participating in subject-based discussion forums. It is useful for using authentic texts, reading or listening to current news and creating opportunities for real communication. It offers a form of teaching which is adopted to individual students, learning styles and abilities. Digitally literate student can use technologies appropriately for enhancing rate of his/her success in life.

2.1.8 Review of Related Policies and Provision of ICT in Nepal

In the context of Nepal, the government has launched different programs and plans for enhancing ICT in education sector. Regarding this Acharya (2014) states:

> The establishment of Computer Association of Nepal (CAN) in 1992 and Internet User Group in 1997 is the most notable effort. Ministry of Education Nepal (2067) has also started to launch the advanced guru planning such as, Interactive Digital Content

> Development (IDCD), ICT Human Resource Development (ICTHRD), ICT Infrastructure Development (ICTID) and Internet Connectivity to the Schools (ICS) (p. 4).

Some of the major plans for enhancing ICT in education are; National Curriculum Framework (NCF, 2007), School Sector Reform Plan (SSRP. 2009-2015), ICT Master Plan (2013-2017), School Sector Reform Program/Sector Wide Approach (SSRP/SWA, 2014-2016), National ICT Policy (2015) and School Sector Development Program (SSDP, 2016- 2023) which have made a number of policies and provisions for integrating ICT in teaching and learning activities.

National Curriculum Framework (2007) defines ICT as a means of receiving and retrieving, storing and collecting, developing and applying, communicating and disseminating knowledge and information. It has stated the use of ICT in education for communicating and transmitting information related to school administration, as a tool to teaching other subjects and offering ICT as a separate subject (p. 17). It also focused on paper less offices, one student one laptop program and internet access in school. It also stated that measures will be taken to enable all and equal participation of women and youths in creating the information society (p. 16).

Along with this, it has stated some problems like:

> ICT has not properly been addressed by curricula: ICT as a separate subject or a tool for teaching and learning: and lack of basic infrastructure, conducive environment and efficient resource persons (p. 18).

The issue with this is to systematize ICT as a separate subject and as a tool of teaching learning and to create conducive environment by maintaining by

mitigating the above mentioned setbacks have still remained as a challenge" (p. 18).

Information Communication Technology (ICT) programme included in School Sector Reform Plan (2009-2015) has stated:

> A decade of rapid developments within the field of ICT offers new and cost-effective avenues for capacity development. One example is the Ministry's on-going implication of its ICT Master's plan that aimed at improving the speed of internal communication and staff access to essential making documents and information. Much more needs to be done to fully understand and develop a strategy on how the Ministry can benefit from the opportunities offered by modern ICT (p. 44).

School Sector Reform Program/Sector Wide Approach (2014-2016) is the continuation of School Sector Reform Plan (2009-2015). This program discusses the ICT in its training packages of Teacher Professional Development (TPD). Similarly, it has mentioned, online-offline training to the trainers and teachers to enhance the distance learning (p. 13). Moreover, it has stated that "building capacity of school teachers in the use of ICT in schools, as well as priority is also given to digital literacy" (p. 13). This programme reflects the positive direction towards the implementation of ICT in schools and has focused on promoting teachers' skill and quality in ICT in schools.

The ICT Master Plan (2013-2017) is the main document for planning ICT in education. This plan sought for digital literacy at personal and pedagogical level. It has emphasized to use ICT in order to achieve goals of education successfully. Regarding teacher's professional development, it has stated about the teacher training course for ICT which generally subsumes basic skill,

concept and importance of ICT in education. Similarly, it has focused on ICT based pedagogical practices in classroom, and the use of mini-scale project.

National ICT Policy (2015) intended to create foundational groundwork for an overarching vision of 'Digital Nepal'. One of its major policies is stated regarding human resource as follow:

> Initiatives will be taken to ensure that educational institutions imparting ICT course and specific skills are incentivized to align their courses offering with technological dynamism shaping the sector. Among these lines, institutional capacity of such institutions along infrastructure and human resource dimensions will be enhanced (p. 9).

This document has discussed broad vision, strategy and detailed policy on ICT in education, research and development. The policy is stated as:

> Appropriate measures will be taken to facilitate and promote the integration of ICTs within the entire Nepali educational system to support administration, pedagogy, learning and research, with a view to improving the quality of education and training at all levels and enhancing access to education (p. 9).

Furthermore, it has committed to formulate and launch E-schools and other necessary initiatives to promote E-learning, E-Education, and life-long learning. This policy has stated to employ ICTs at all levels of education system targeting to improve educational achievements by expanding access to education and training. Similarly, it has stated strategies to implement the policy as follows:

> To promote the E-learning systems in order to extend the reach of educational services including teacher training programs. Teacher training institutions will be capacitated to introduce programs on teacher education in ICTs. The development, deployment and utilization of electronic-based distance education, training and learning system will be promoted in education system to complement and supplement regular classroom based education and training (p. 21).

School Sector Development Program (SSDP, 2016-2020) realizes the need of Knowledge of ICT in educational sector with the increasing role of information and communication technology (ICT) in all areas to provide students with 1CT skills and use of ICT to improve classroom delivery, to increase access to learning materials and to improve the effective and efficiency of educational performance and management.

This plan has stated objectives and strategies regarding ICTs in education. The objectives include; the appropriate use of ICT to improve classroom delivery by establishing an ICT enabling learning environment based on need and context, appropriate development access to learning materials and supporting professional development packages and the use of ICT for the improvement and increased effectiveness and efficiency of overall educational governance and management.

These policies, programmes and provisions are expected to integrate digital tools in teaching and learning process at school level throughout the country. These policies aim to ensure use of ICTs in school and teacher education for developing digitally literate human resources. Though the policies are made to implement effectively still there is gap between implementation and policies.

Until the gap is not minimized the school or universities will be unable to produce digitally literate students.

2.2 Review of Empirical Literature

Research work requires the knowledge of previous study to validate the present study. So, this section is an attempt to review the related studies, articles and reports. This includes the critical synthesis of previous research works conduced in this related field. I have reviewed some of the studies conducted in use of ICT in teaching and learning, e-learning and digital literacy as the related literature in this section.

Kshetri (2011) carried out a research on "Digital Literacy of Secondary and Higher Secondary Level English Teachers". His objective was to find out the level of digital literacy of secondary and higher secondary level English teachers of Bhimdattnagar municipality, Kanchanpur district. It also aimed to generalize the findings throughout the country and suggest some pedagogical implications. To achieve the objectives of the study, he selected fifty two teachers (keeping the equal level of distribution of secondary and higher secondary level teachers, male-female teachers, rural-urban areas teachers). He used survey research design and a set of questionnaire as research tool to elicit the data from required sample. This research study aimed to find out the digital literacy of teachers on the basis of use of ten digital tools like radio, cassette player, CD/DVD player, computer, internet, mobile, E-mail, OHP projector (traditional), modern multimedia computer projector and pen drive. The findings of this study showed that the digital literacy of secondary and higher secondary level English teachers was not satisfactory.

Acharya (2014) conducted a research on "Use of ICT/Web Tools in ELT in Nepal". The research study aimed to explore the use of ICT/Web tools in ELT and the uses of such tools to carryout effective classroom activities. The sample population of the study consisted of 40 English teachers of private Secondary and Higher Secondary Schools of Kathmandu. He used judgmental non-

random sampling from Kathmandu, Lalitpur and Bhaktapur districts in a proportionate way. To fulfil the objectives of the study, he employed survey research design and questionnaire consisting of both close ended and open-ended questions had been used as a data collection tools. From this research study, he explored that the ICT tools such as mobile phone, laptop, multimedia projector and web tools like YouTube, Facebook, wiki, email, blog are used in ELT and have positive impact on ELT.

Yadav (2016) carried out a research on "Students Perception on Use of Online Resources". The main objectives of the study was to find out the students' perception on the use of online resources in term of: a) Websites, b) G-mail, c) E-book, d) Blogs, e) Facebook and to explore the usefulness of online resources for students' academic development. The sample was selected purposively. Questionnaire has been used to collect data. The findings of the study showed that enough resources and teachers training are not available in the college. Majority of the students agreed that online resources are the most important source of learning but in their practicality of them were found to passive about it.

Neupane (2016) conducted a research entitled, "Teachers' and Students' Perceptions on Digital Divide in English Language Learning". The research aimed to document teachers' and students' perceptions on digital divide in English language learning. He employed survey research design in this study. The sample population of this study included 10 English language teachers and 30 M.Ed. students of English of University Campus. He adopted purposive non-random sampling method to select sample population. He used questionnaire as the tool for data collection in his research. The findings of the study showed that English Language teachers and learners who have the access to new technology are benefitted; they can promote their independent learning and improve their language skills.

Dhami (2018) carried out a research on “Digital Literacy of Students: Skills and Its Impact on Learning”. The objectives of this study were to explore students self-reported digital literacy skills and to explore effects of students’ digital literacy in their study. She conducted survey research among 40 students of University Campus, Department of English Education, kirtipur. She used purposive sampling strategy for selecting sample population. The findings of the study showed that large number of students were good at all digital literacy skills. Students’ digital literacy skills help them to enhance knowledge, to download authentic books, to submit assignments and so on. It showed that digital literacy skills have positive impact on learning.

The present study entitled “Impact of Students Digital Literacy on Information Use Behavior” is different from those of the above reviewed research works. There is no particular study that has yet been carried out at the Department of English Education, T.U., Kirtipur related to this research problem. So, my research study is a new work in existing research area. It will add new dimension on research area related to ICTs and digital literacy.

2.3 Implications of the Review for the Study

The literature review is an integral part of the entire process and makes a valuable contribution to almost every operational step. In this research study, I reviewed different research works, articles, books and reports. As Kumar (2014) states, “the process of reviewing the literature helps you to understand the subject area better...” the review of theories related to my research area helped to expand my horizon of knowledge on digital literacy, digital literacy areas, digital literacy skills and use of digital literary in teaching and learning Furthermore, it guided me to develop theoretical root of my study as well as to develop conceptual framework of the study.

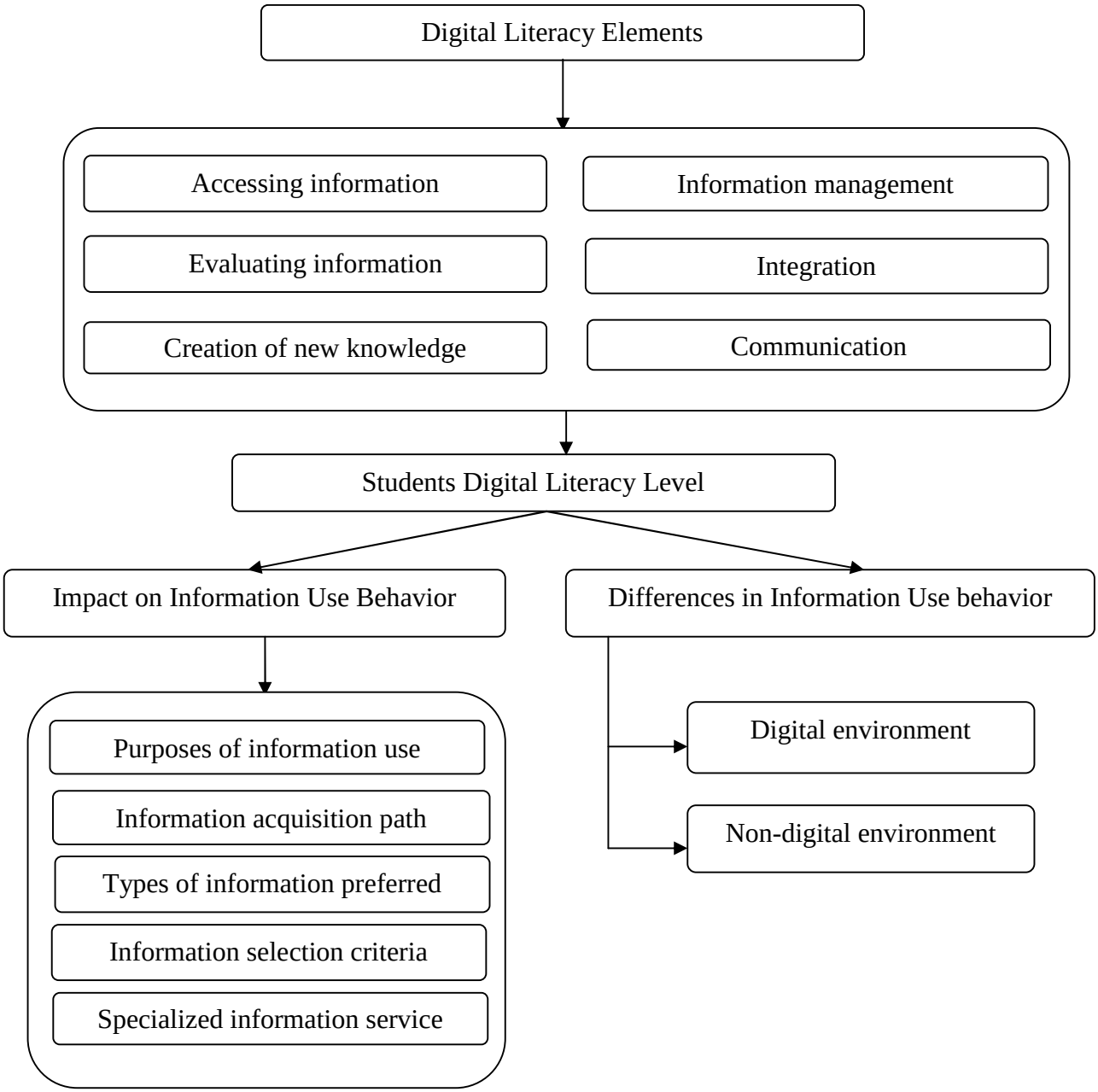
The research work of Goodfellow (2011) helped to get theoretical insights on digital literacy areas. In the same way, the research study Dhami (2018)

supported me to develop conceptual framework and find the research gap and select the problem by reading her thesis.

Dhami (2018) provided me the idea to prepare questionnaire related to impact of digital literacy on student's information use behavior. The review of empirical literature have acquainted me with what aspects of related research area have been examined by others, what they have found out about those aspects, what gaps they have identified and what suggestions they have made for further research. Similarly, from literature review I got insights for selecting appropriate procedures, tools, design and to produce measurable objectives of the research study. In addition, it also increased my confidence level in theoretical as well as methodological knowledge.

2.4 Conceptual Framework

Conceptual framework is the visual representation of the task. It consists of the scheme in which research study is embedded. The main purpose of conceptual framework is to show the relationship among the various concepts and variables of the study. In this context, Miles and Huberman (1994, p. 18) define conceptual framework as "a written or visual representation that explains either graphically or in narrative forms." While carrying out this research I consulted different documents related to the study and literature review. On the basis of all the reviewed documents I had developed the following conceptual framework to process this study ahead.


Digital Literacy Elements
Accessing information
Information management
Evaluating information
Integration
Creation of new knowledge
Communication
Students Digital Literacy Level
Impact on Information Use Behavior
Differences in Information Use behavior
Purposes of information use
Information acquisition path
Types of information preferred
Information selection criteria
Specialized information service
Digital environment
Non-digital environment

CHAPTER THREE
METHODS AND PROCEDURES OF THE STUDY

This chapter deals with methodology which was adopted in the study. This chapter consists design and method of the study, population, sample and sampling strategies, research tools, sources of data, data collection procedures, data analysis procedures and ethical considerations.

3.1 Design and Method of the Study

Research is a kind of inquiry to find out the truth or evidence. It is the ways of collecting accurate, sound and reliable information. Kumar (2014, p. 3) states, "Research is an integral part of good professional practice in many professions and has been responsible for greatly influencing the practice procedures and outcomes in these professions." Similarly, based on Nunan (1992), research is a systematic process of inquiry consisting of three elements or components: (1) a question, problem or hypothesis, (2) data, and (3) analysis and interpretation of data. Thus, research is an effort to search new facts, knowledge and principles in a scientific manner.

A research design is a structure, blueprint or detailed plan of research study to be completed. According to Kumar (2014, p. 121), "A research design is a road map that you decide to follow during your research journey to find answers to your research as validity, objectively, accurately and economically as possible." Thus, research design is a detailed plan for how research plan is to be completed.

Survey research is a design that is widely used in social and educational research studies. Specially, it is used to carry out research in a large number of populations to explore an attitude, belief or behavior on particular issues.

According to Cohen, Manion and Morrison (2011, p. 256) "Typically, surveys gather data at a particular point in time with the intention of describing the nature of existing conditions, or identifying standards against which existing

conditions can be compared, or determining the relationships that exist between specific events."

The design of this study was mixed because I followed both approaches; quantitative and qualitative in general and survey design in particular.

In survey design, a researcher will seek to gather large-scale data from representatives as sample population. In this research, I followed survey design since it is effective to collect required data from representative sample population. The researcher only asks participants to provide data or observes them. Hence, I also asked participants to fulfil a set of questionnaire. It is more realistic in nature.

This research used questionnaire for gathering the information or data from the respondents. The researcher designed two sets of questionnaire to gather the necessary data from the field. One set of questionnaire was used to gather the information about impact of students' digital literacy level on information use behavior and another set of questionnaire was used to compare their information use behavior in digital and non-digital environment. The questionnaire was administered to the respondents at a single time to gather the data at once. In order to collect data in natural setting, the researcher visited the participants and requested to fill up the questionnaire. It helped me to complete the study successfully.

3.2 Population, Sample and Sampling Strategy

The population of this study consisted the B.Ed. English specialization students of Nilkantha Multiple Campus, Nilkantha-3, Dhading. It was based on survey design. I selected only 40 students out of whole population. I used simple random sampling strategy to select the participants for this study.

3.3 Sources of Data

Both primary and secondary sources of data were utilized for this study.

3.3.1 Primary Sources of Data

The randomly selected 40 students of English specialization of Nilkantha Multiple Campus, Dhading who are studying in Bachelor level were the primary sources of data in this study.

3.3.2 Secondary Sources of Data

For the secondary sources of data, I studied and consulted different books, theses, articles, and journals, materials available in internet and other published materials related to this study like Eshet-Alkalai (2004), Cohen, Manion and Morrison (2011), Belshaw (2012), Nunan (1992), Meurant (2015), Yadav (2016) and so on.

3.4 Data Collection Tools and Techniques

To meet the objectives of this research study, questionnaire was used as the main research tool. The questionnaire was used to explore impact of students' digital on their information use behavior and differences in their information use behavior in digital and non-digital environment. The questionnaire included both open-ended and closed ended questions.

3.5 Data Collection Procedures

At first, I visited Nilkantha Multiple Campus and informed participants about the study and explained briefly about my research study and its objectives. I distributed the questionnaire to the participants selected by using simple random sampling procedure. Then, I requested them to complete it within two days. Finally, I collected the questionnaire and thanked the respondents for their kind cooperation and information.

3.6 Data Analysis and Interpretation Procedures

The data collected from participants were analysed and interpreted descriptively and statistically. The learners' responses in items of questionnaire

were tabulated using statistical tools like frequency count and percentage. Then, the results were interpreted descriptively in qualitative manner in order to derive findings of the study.

3.7 Ethical Considerations

Ethical considerations are the ethical principles or standards which should be taken into consideration while conducting a research work. In my research study, I sought to promote accuracy honesty, truthfulness in research for valid and reliable work. I gave priority to fairness, justice and respect people's rights and dignity. I distributed questionnaire with the permission of participants and I avoided deceiving the participants. Similarly, I avoided plagiarism by giving proper citation of the works cited in the text. I disclosed objectives of my study honestly and clearly. While analyzing the data, I was objective and straightforward. I respected the privacy and anonymity of participants and avoided the information that would harm the participants.

CHAPTER FOUR
ANALYSIS AND INTERPRETATION OF RESULTS

This chapter deals with the analysis and interpretation of the collected data obtained through primary sources. The main concerns of this study were to find out students digital literacy level and its impact on information use behavior and to compare the students' information use behavior in digital and non-digital environment. The analysis and interpretation of the data is based on the objectives and items incorporated to achieve the objective. The detailed analysis and interpretation of the data and summary of the findings are presented below:

4.1 Analysis of Data and Interpretation of Results

This chapter is primarily concerned with the analysis and interpretation of the collected data. In order to derive the findings related to students' digital literacy level and its impact on information use behavior and to explore the differences in students' information use behavior in digital and non-digital environment, a set of questionnaire was administered to the respondents. The questionnaire included both open-ended and closed-ended questions. Most of the questions were closed-ended with "Yes" and "No" alternatives. The response (tick) on "Yes" alternative denotes that students deal with that particular skill whereas response (tick) on "No" alternative denotes that students do not deal with that particular skill. The questionnaire dealt with the digital literacy level on the basis of digital literacy elements and skills.

The closed-ended questionnaire was categorised under different six elements of digital literacy. They are: accessing information, information management, Evaluating information, integration, creation of new knowledge and communication. The digital literacy elements related questionnaire were used to find out students digital literacy level which in was further used to explore impact of students digital literacy on information use behavior. The obtained responses have been tabulated using frequency and percentage. Here,

frequency is denoted by “F” and percentage by “%”. Forty B. Ed. Students of Nilkantha Multiple Campus, English specialization were included as sample for data. Their digital literacy level was explored through closed-ended questions. Similarly, there were five closed-ended and five open-ended questions which dealt with information use behavior in digital and non-digital environment and were used to explore the differences in information use behavior of students in digital and non-digital environment.

In the analysis of the data, the total number of respondents for each response was counted and converted into percentage. Both statistical and descriptive strategies were used to analyze and interpret the data.

4.1.1 Informants’ Response on Accessing Information

This section deals with the analysis and interpretation of respondents’ responses obtained through the items related to accessing information in digital environment. There were six different items. The data obtained from those items are presented in the table, analysed descriptively and result are drawn accordingly.

Table 1

Accessing information

S.N.	Statements	Responses in frequency and percentage			
		Yes		No	
		F	%	F	%
1	Use digital technology for accessing various information distributed through digital networks	38	95	2	5
2	Downloads documents, audio or video clips	36	90	4	10

	from Internet				
3	Is able to send and receive information through emails	36	90	4	10
4	Reads Internet newspapers	34	85	6	15
5	Gains information on people, places or goods through the Internet	36	90	4	10
6	Participation in e-learning	33	82.5	7	17.5

This shows that majority of students, i.e. 95% used digital technology for accessing various information distributed through digital networks while only 5% did not use it. Similarly, 90% of the respondents downloaded documents, audio or video clips from the Internet while the remaining did not do so. Likewise, 90% of the respondents were able to send and receive information through emails whereas the rest were not able to do so. In similar way, 85% of the respondents read internet newspapers. Similarly, 90% of the respondents had the ability to gain information on people, places or goods through the Internet. Only 82.5% of the respondents responded that they participated in e-learning.

From table 1, it can be said that the average 88.75% of students had the ability regarding different aspects related to accessing information in a digital environment whereas only 11.25% of students lacked the abilities related with accessing information in a digital environment. This shows that learners in today's world mostly used digital technology and knowledge to access any kind of information.

4.1.2 Informants' Response on Information Management

Information management aspects deals with the ability of respondents to manage information they acquire from different sources in a way that they can be easily obtained in future when necessary. It also includes management of personal information in digital environment. There were three different items. The responses on those items are tabulated in frequency and percentage below:

Table 2

Information management

S.N.	Statements	Responses in frequency and percentage			
		Yes		No	
		F	%	F	%
1	Has and manages personal information through Internet (website, profile, etc.)	30	75	10	25
2	Ability to understand and use the functions of hardware and software of computers to store and manage information	20	50	20	50
3	Utilizes additional functions of mobile phone to manage information	33	82.5	7	17.5

This depicts that 75% students had and managed personal information through Internet (website, profile, etc.) whereas 25% did not. Only 50% respondents had the ability to understand and use the functions of hardware and software of computers to store and manage information. Moreover, 82.5% respondents utilized additional functions of mobile phone to manage information.

From table 2, it can be stated that the average 69.17% of students had the ability to manage information in a digital environment whereas 30.83% of students lacked it. It can be summarized that the learners relatively were weaker in managing information than accessing information in digital context.

4.1.3 Informants' Response on Evaluating Information

Evaluating information area deals with respondents' ability to evaluate the various aspects of information they acquire to prove the information factual and authentic. There were three different items. The responses under evaluating information are statistically presented in following table:

Table 3

Evaluating information

S.N.	Statements	Responses in frequency and percentage			
		Yes		No	
		F	%	F	%
1	Differentiate between wanted and unwanted information and knowledge in an appropriate way	29	72.5	11	27.5
2	Checks uploading date, author, and other metadata of information found on Internet	17	42.5	23	57.5
3	Ability to evaluate and judge the credibility of various information distributed through digital networks	20	50	20	50

This presents that 72.5% students could differentiate between wanted and unwanted information and knowledge in an appropriate way. Only 42.5%

respondents checked uploading date, author, and other metadata of information found on Internet. Likewise, 50% of the respondents had the ability to evaluate and judge the credibility of various information distributed through digital networks.

From table 3, it can be explained that the average 55% of students had the ability regarding different aspects related to evaluating information in a digital environment whereas 45% of students lacked it. From the table above, it can be concluded that the learners did not have proper knowledge to evaluate information they access for learning in digital context.

4.1.4 Informants' Response on Integration

Integration refers to ability to utilize different technology, programs and information to create new information from the existing ones. There were three different items. The table below presents the response on those items:

Table 4

Integration

S.N.	Statements	Responses in frequency and percentage			
		Yes		No	
		F	%	F	%
1	Ability to select, edit, process, and convert various information to the knowledge necessary	36	90	4	10
2	Ability to utilize computers to prepare documents	38	95	2	5
3	Use internet and digital resources for various assignments	35	87.5	5	12.5

This reveals that 90% students had the ability to select, edit, process, and convert various information to the knowledge necessary. Likewise, 95% respondents had the ability to utilize computers to prepare documents. Similarly, 87.5% respondents used internet and digital resources for various assignments.

From table 4, it can be summarized that the average 90.83% of students had the ability regarding different aspects related to integration of digital tools in learning whereas 9.17% of students did not have it. Therefore, it can be generalized that integration aspects of learners seems high in their learning.

4.1.5 Informants' Response on Creation of New Knowledge

Creation of new knowledge refers to the process of developing new information by modifying and utilizing the information which can be found and accessed in digital world. There were four different items. The responses on those items are presented in the following table:

Table 5

Creation of new knowledge

S.N.	Statements	Responses in frequency and percentage			
		Yes		No	
		F	%	F	%
1	Can create or edit picture files	35	87.5	5	12.5
2	Can prepare a document by using computer programs such as Hangeul and MS-Word	36	90	4	10
3	Creates new information or knowledge by referring to information or opinions on Internet	34	85	9	15

4	Can conduct activities related to creation by using blogs, Wikis, picture sharing, and other tools for uploading online contents	26	65	14	35

This displays that 87.5% of the respondents could create or edit picture files. In the same way, 90% of the respondents could prepare a document by using computer programs such as Hangeul and MS-Word. Similarly, 85% of the respondents created new information or knowledge by referring to information or opinions on Internet. Likewise, 65% of the respondents could conduct activities related to creation by using blogs, Wikis, picture sharing, and other tools for uploading online contents.

From table 5, it can be revealed that the average 81.88% of students had the ability regarding different aspects related to creation of new knowledge whereas 18.12% of students lacked it. From the information obtained, it can be said that learners used information in digital world in a large amount in order to create new knowledge to accomplish their works.

4.1.6 Informants' Response on Communication

Digital tools are mostly used for the purpose of communication in present era. Communication can take place for personal, official, educational purpose or any other purpose. There were three different items and the responses on those items are tabulated below:

Table 6

Communication

S.N.	Statements	Responses in frequency and percentage			
		Yes		No	
		F	%	F	%
1	Can communicate and express things in own language through several different channels on the Internet (blogs, email, Facebook message, Skype, Twitter etc.)	38	95	2	5
2	Can conduct communicative activities for problem solving	35	87.5	5	12.5
3	Participates on social websites on a regular basis for communication	36	90	4	10

This shows that 95% of the respondents could communicate and express things in own language through several different channels on the Internet (blogs, email, Facebook message, Skype, Twitter etc.). Similarly, 87.5% of the respondents could conduct communicative activities for problem solving. Likewise, 90% of the respondents participated on social websites on a regular basis for communication.

From table 6, it can be said that the average 90.83% of students had the ability regarding different aspects related to communication in a digital environment whereas 9.17% of students did not. Analysing the data, it can be said that the learners mostly used digital tools for communication. The purpose varied according to their need and interest.

4.1.7 Informants' Response on Purposes of Information Use

Purpose of information use differs from person to person. It differs among people in terms of their nature of learning, work, occupation and business. The purpose of information use for learning is focused here. There were five different items related with purpose of information use in learning. The data obtained from those items are analysed and presented in the table below:

Table 7

Purposes of information use

S.N.	Items	Responses in frequency and percentage			
		Yes		No	
		F	%	F	%
1	Writing paper	5	12.5	35	87.5
2	Academic challenges	33	82.5	7	17.5
3	Perform various projects	35	87.5	5	12.5
4	Preparation for a class	37	92.5	3	7.5
5	Identifying trends	13	32.5	27	67.5

This presents that only 12.5% of the respondents used information for writing paper, 82.5% of the respondents used information for academic challenges, 87.5% of the respondents used information to perform various projects, 92.5% of the respondents used information for preparation for a class and 32.5% of the respondents used information for identifying trends.

From table 7, it can be stated that most of the students' purposes for information use in digital environment were preparation for class, perform various projects and solve academic challenges while very few others used information for writing paper and identifying trends.

4.1.8 Informants' Response on Information Acquisition Path

Information acquisition path is related with different sources used to acquire information in digital context. It is related with the receiving information from different media such as internet, e-library colleague, major professionals etc. There were eight different items related with information acquisition path to enhance learning. The table below presents the analysis of the data obtained from the responses of the respondents:

Table 8

Information acquisition path

S.N.	Items	Responses in frequency and percentage			
		Yes		No	
		F	%	F	%
1	Personal collection	12	30	28	70
2	Publishers and bookstores	2	5	38	95
3	Colleague	10	25	30	75
4	Societies, seminars, exhibitions	10	25	30	75
5	Major professionals	8	20	32	80
6	Internet	40	100	0	0
7	Library	11	27.5	29	72.5
8	Social networking sites	20	50	20	50

This displays that only 30% of the respondents had personal collection of digital resources for enhancing learning. Only 5% respondents acquired information from publishers and bookstores. Similarly, 25 % respondents got information from colleague and societies, seminars, exhibitions. Likewise, 20% respondents received information from major professionals. On the contrary to all above items, all the respondents, i.e. 100% used internet for acquiring information. Use of library also is seen to be limited to very few respondents, i.e. 27.5% for acquiring information. Social networking sites is seen as the information acquisition path for respondents after internet search but only half the respondents, i.e. 50% had responded positively regarding social networking sites use as an information acquisition path.

From table 8, it can be summarized that internet search was the main information acquisition path for the learners. Very few learners used other information acquisition paths than internet search which showed that their information acquisition was very much limited to internet search only.

4.1.9 Informants' Response on Types of Information Preferred

Types of information preferred is associated with different materials found in digital world such as digital books, seminar data, journals, reports, articles, thesis, statistics and so on. There were seven different items related with types of information preferred in context of digital learning. The data obtained from the analysis of the response of the respondents are tabulated as follow:

Table 9

Types of information preferred

S.N.	Items	Responses in frequency and percentage			
		Yes		No	
		F	%	F	%
1	Book	35	87.5	5	12.5
2	Seminar data	7	17.5	33	82.5
3	Academic article	13	32.5	27	67.5
4	Trend information	5	12.5	35	87.5
5	Research report	30	75	10	25
6	Statistics	4	10	36	90
7	Thesis	9	22.5	31	77.5

This shows that large number of the respondents, i.e. 87.5% preferred digital books as types of information preferred. Only 7% of the respondents liked seminar data to gain information. Likewise, 32.5% of the respondents looked for academic articles to receive information. Similarly, 12.5% of the respondents preferred trending information. More number of respondents, i.e. 75% preferred research report. Only 4% and 9% respondents preferred statistics and thesis respectively.

From table 9, it can be revealed that digital books and research report were the major types of information preferred by the learners in digital environment. Other types of information were less preferred in comparison to digital books and research report.

4.1.10 Informants' Response on Information Selection Criteria

Different criteria for information selection comes under this area such as recency, accuracy, ease of acquisition, scope of provision of full text and reliability. There were five different items related with information selection criteria. The response obtained from the respondents are tabulated and analysed below:

Table 10

Information selection criteria

S.N.	Items	Responses in frequency and percentage			
		Yes		No	
		F	%	F	%
1	Recency	10	25	30	75
2	Accuracy	23	57.5	17	42.5
3	Ease of acquisition	36	90	4	10
4	Scope of provision of Full text	17	42.5	23	57.5
5	Reliability	33	82.5	7	17.5

This shows that only 25% respondents looked for recency as information selection criteria. Likewise, 57.5% respondents viewed accuracy of information before selecting and using them. Most of the respondents, i.e. 90% respondents considered ease of acquisition of information as criteria for selecting any information. Very few, i.e. 17% looked for the scope of provision of full text to select any information in their learning process. Only 33% respondents considered reliability of any information as criteria for selection and use in learning.

From table 10, it can be concluded that ease of acquisition mattered to the learners most for selecting and using any information in digital environment. Then after, reliability and accuracy mattered. Other aspects mattered very less for the selection and use of information.

4.1.11 Informants' Response on Specialized Information Service Used

Specialized information service used denotes use of several information providing services available in digital world. These include search services, communities and blogs, trend analysis service and information consulting service. There were four different items related with specialized information service used for information acquisition. The data obtained from the responses of the respondents are analysed and tabulated as follow:

Table 11

Specialized information service used

S.N.	Items	Responses in frequency and percentage			
		Yes		No	
		F	%	F	%
1	Search services	36	90	4	10
2	Communities and blogs	12	30	28	70
3	Trend analysis service and.	6	15	34	85
4	Information consulting services	11	27.5	29	72.5

This shows that large number of respondents, i.e. 90% use search services such as Google, Bing and others for information acquisition. Few respondents used other specialized information service. Few respondents, i.e. 30% respondents only used communities and blogs. Similarly, 15% used trend analysis service and only 27.5% used information consulting services.

From table 11, it can be explained that search services were the most used specialized information search service while the rest were used by very few respondents only.

4.1.12 Informants' Response on Open-ended Items

Apart from the closed-ended items, the selected informants were asked a few open-ended items to achieve their views on information use behavior in non-digital environment of information use. The analysis and interpretation of their views are subsumed under following sections.

a) Purpose of Information Use in Non-digital Environment

The respondents were asked about their several purposes for using any information in non-digital environment. Some of the responses presented by the respondents are as below:

S6 said:

> I use information in non-digital environment for the purpose of preparation for class, preparation for exams, academic challenges and to perform various projects related to my study.

Similarly, S13 stated:

> The various purposes for using any information in non-digital environment are preparation for a class, academic challenges and perform various projects.

Likewise, S15 stated:

> I use any information in non-digital environment for the purpose of solving academic challenges, preparation for a class and preparing presentation.

It can be concluded from the responses obtained from the respondents that students mainly use information in non-digital environment to enhance their study and education. Only few students use information in non-digital environment for the other purpose rather than study purpose.

b) Information Acquisition Path in Non-digital Environment

Students acquire information from different sources whether it is in digital environment or non-digital environment. The responses of the students on the question "What are the information acquisition paths for non-digital resources you use to enhance your learning?" are presented below:

S9 responded:

> I acquire information from personal collection, library, publishers and bookstores and colleagues for non- digital resources to enhance my learning.

Likewise, S18 stated:

> The information acquisition paths for non-digital resources are library, colleague, library, publishers and bookstores and major professionals.

Summarizing all the respondents' response, it can be said that publishers and bookstores, as well as libraries are the primary and colleagues, major professionals and their own personal collection are the secondary information acquisition paths for non-digital resources.

c) Types of Non-digital Information Preferred in Non-digital Environment

There are several types of non-digital information we can find in different forms like books, articles, journals, magazines, newspapers etc. Different views

on the types of non-digital information preferred by students in non-digital environment are presented as follow:

S23 said:

> The types of non-digital information I prefer to enhance my knowledge are books, articles and reports.

Similarly, S39 stated:

> I prefer books, articles, journals and newspapers to enhance my knowledge.

Likewise, S40 responded:

> The types of non-digital information I prefer to enhance my knowledge are books, articles and thesis.

It can be concluded that books, articles, journals and thesis are the most preferred types of information in non-digital environment by the students.

d) Information Selection Criteria in Non-digital Environment

The various information selection criteria can be reliability, validity, objectivity, scope of provision of full text, accuracy, recency and so on. The students' response on the information selection criteria they consider while using information in n non-digital environment are as follow:

S1 said:

> Regarding information selection criteria I consider provision of scope of full text, recency, and reliability.

In the same way, S37 stated:

> While using information in non-digital environment I prefer the criteria like recency, accuracy and reliability.

Likewise, S32 responded:

> I consider validity, recency and reliability as the major criteria while using information in non-digital environment.

Therefore, it can be said that the students are conscious and look after necessary information selection criteria like recency, reliability, validity, accuracy, scope of provision of full text etc. which are necessary criteria to be considered in non-digital environment.

e) Ethical Aspects Considered While Using Information in Non-digital Environment

Regarding ethical aspects considered while using non-digital information for the study, the students responded as follow:

S7 responded:

> I give credit to the authors whose information I use.

Similarly, S19 stated:

> I properly cite and give reference to any information I use in non-digital environment.

Summarizing all the responses, it can be stated that students consider ethical aspects, give proper citation, reference and credit to the information being used in non-digital environment.

CHAPTER FIVE
FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter summarizes the major findings of the research study derived from the systematic analysis and interpretation of the collected data. Similarly, it includes conclusion of the study which is derived on the basis of the findings and recommendations made for policy makers, practitioners, and further researches on the basis of the findings of the study.

5.1 Findings

After the analysis and interpretation of the data obtained from the informants of the study; I come off with the following summary of findings of this research:

i. Most of the students, i.e. 88.75% on average possessed the ability to access digital information.

ii. Nearly 69.17% of the total respondents had the ability to manage digital information and use as per need and situation.

iii. Learners are unable to evaluate information in digital environment in an appropriate way. Approximately, 55% of the total respondents had the ability to evaluate digital information.

iv. A large number of the students, i.e. 90.83% of the students had the ability to integrate digital tools and digital information in producing new information as required and desired.

v. Majority of the students, i.e. 81.88% of students had the ability to create new knowledge by using the existing ones.

vi. Maximum percentage of the informants, i.e. 90.83% had the ability regarding different aspects related to communication in a digital environment.

vii. Nearly, 82.5% of the students used information for academic challenges.

viii. About, 87.5% of the students used information to perform various projects.

ix. Majority of the students, i.e. 92.5% of the students used digital information for preparation for a class.

x. Most of the students' purpose of information use in digital environment is to prepare for a class, perform various projects and deal academic challenges.

xi. All the respondents, i.e. 100% used internet for acquiring digital information.

xii. Except internet other information acquisition paths like e-library, colleague, major professionals, publishers and bookstores are rarely used.

xiii. E-books and research report are the most preferred information types in digital context of information use.

xiv. Most of the students, i.e. 90% selected and used digital information on the basis of ease of acquisition.

xv. Reliability and accuracy of the information also mattered along with ease of acquisition.

xvi. Majority of the students, i.e. 90% used specialized search services such as Google, Bing and others for information acquisition.

xvii. Students mainly use information in non-digital environment to prepare for a class, enhance their study and education which is similar to purpose of information use in digital environment.

xviii. Publishers, bookstores and libraries are the primary and colleagues, major professionals and their own personal collection are the secondary information acquisition paths for non-digital resources. Students used every information source to acquire information.

xix. Books, articles, journals and thesis are the most preferred types of information in non-digital environment by the students. We can find similarities in terms of the types of information preferred in digital and non-digital environment.

xx. Students look for information selection criteria like recency, reliability, validity, accuracy, scope of provision of full text etc.

xxi. Ease of acquisition is prioritized more than other aspects while searching digital information while recency, reliability, validity and accuracy are prioritized more than ease of acquisition while searching non-digital information.

xxii. Most of the students consider ethical aspects, give proper citation, reference and credit to the information being used in non-digital environment whereas most of the students lack this ability in using information in digital environment.

5.2 Conclusions

Digital literacy is important because we live in a tech-dependent world. According to American Library Association (1989), “Digital literacy is the ability to use information and communication technologies to find, evaluate, create and communicate information, requiring both cognitive and technical skills.” So, digital literacy is the set of skills which includes ability to operate, use, evaluate, communicate, organize, upload, download, and create new information in digital form. These skills are crucial to the students as well as teachers to foster e-learning environment. In this era, students should have digital literacy skills for effective learning. We need to become digitally literate to keep up with the changing times. Considering all these factors, this study aimed to explore students’ digital literacy and its impact on information use behavior as well as compare students’ information use behavior in digital and non- digital environment. This study displays that internet is the major source

of acquiring any information in digital environment. Ease of acquisition is prioritized while searching for information in digital environment. Reliability and accuracy mattered next to ease of acquisition.

The findings of the study revealed that students learning process is directly affected by technologies. With the changing world which is digitalizing day by day in every sector, the area of education is also being digitalized. The students in this present era look for information in digital environment at first. They look for information in digital environment before they seek in non-digital environment and formats. Appropriate changes in information use behavior of students is necessary according to different environment of information being used. Students purpose and types of information they prefer in digital and non-digital environment remains same but they lack the ability to deal with different other areas necessary to utilize any information properly in digital environment namely selection criteria, evaluation aspects and ethical aspects.

Digital literacy is the fundamental ability for autonomous learner. Students have email ID, Facebook account, twitter, smartphone, laptops which provides opportunities to have e- learning, communication, creativity and enhance knowledge and social links. Only digitally competent student can take part in digital communication, submit assignment through e-mail, create presentation, paper and project work. Similarly, it creates a large number of opportunities to have global access to global opportunities. So, students should be digitally literate to improve their learning.

Regarding digital literacy and learning, information use behavior matters a lot and learners need to be conscious and able to deal with different areas of information use behavior to use any information in an appropriate way in digital environment. Learners can progress in their learning only if they possess abilities related with information use behavior. Their creation in digital environment and its authenticity matters on whether they have considered different criteria of information use behavior properly or not in their work.

They should have ability to use any information in digital environment appropriately. Student's success is determined by their information use behavior in digital environment.

As, DigEuLit (2006) points out that digital literacy is a key factor in enabling participation in education, employment, and other aspects of social life as well as a means of gaining some understanding of the world. Learners in today's context need to be aware of several elements of digital literacy that comprises information use behavior of a learner to deal with any information in digital world in an effective way. Learners although seem to use digital literacy for different purposes but lack other aspects related with effective information use behavior.

5.3 Recommendations

On the basis of the above mentioned findings and conclusion of the study, the following recommendation have been suggested at three different levels viz. policy level, practical level and further research level.

5.3.1 Policy Level

The recommendations at policy level are stated as follows:

i. The government should make policy to provide internet access to students in every educational institution. As far as possible government should make all schools, colleges and universities Wi-Fi free zone to enhance students' learning.

ii. The government should also make such a policy which incorporates the use of technology in teaching and learning process.

iii. The teaching methods and techniques should be assisted by digital tools. For e.g. computer-assisted language learning and teaching.

iv. The government should conduct one student one laptop program to foster use of digital tools and programmes in teaching and learning.

v. Students should be taught about the use of digital tools, operating systems and programmes to enhance their learning according to their level of study.

vi. Teachers should be provided different trainings to teach students about information use behavior in digital environment.

vii. The policy makers, school administrators and concerned bodies should know how digital literacy and students' information use behavior relate with the success of teaching and learning and the work we do every day in this modern world.

viii. The policy makers should integrate the course related to digital literacy and information use behavior into existing programmes or policies.

5.3.2 Practice Level

Practice level deals with application of theories and principles in real situations. The applicable recommendations for practice level are listed as follows:

i. Students should use digital devices for learning purposes. Similarly, the teachers should encourage students to learn through internet and digital resources.

ii. Different trainings, conferences, seminar and workshops related to digital literacy, information use behavior, online education, ICTs and so on should be provided to the students as well as teachers.

iii. Students should be involved in real practice of e-learning which develops and improves students' digital literacy competence, performance and information use behavior.

iv. Digital literacy and information use behavior may be best evaluated through direct observation of students when they are practicing their digital literacy competencies in real situations. So, digital assessment should be given and feedback should be provided in their works.

v. Teaching and learning environment of college, campus and university should encourage students to use digital information, books, movies, websites, blogs and e-libraries for learning.

vi. The students should be given opportunities to use a variety of materials and related information from digital media to enhance their digital literacy and information use behavior.

5.3.3 Further Research

The new researchers who are interested to explore more in the area of digital literacy, its importance in teaching and learning are suggested the following recommendations to carry out further research:

i. The new researchers can conduct research for analysing differences in students information use behavior based on their colleges, nationality etc. by applying the same standard of information use behavior.

ii. The new researchers can conduct their studies in experimental and case study designs with reference to this study.

iii. This study is not based on direct observation of the information use behavior that students demonstrate. So, the new researcher can conduct similar kind of studies focusing on the direct observation and practice of information use behavior.

iv. This study is confined to B.Ed. level students of Nilkantha Multiple Campus. Therefore, other levels (secondary, higher secondary, masters), learners can be investigated with reference to this study.

v. It is limited to the impact of students' digital literacy on information use behavior. So, new researchers are suggested to undertake their research on other dimensions of digital literacy like importance of digital literacy in teaching and learning, role of digital literacy in language learning, relationship between e-learning and information use behavior and digital literacy and importance of digital literacy and information use behavior for learners.

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APPENDIX-I

PARTICIPANT INFORMATION STATEMENT

Impact of Students Digital Literacy on Information Use Behavior.

1. What is the study about?

You are requested to take part in a research entitled “Impact of Students Digital Literacy on Information Use Behavior” which aims to explore students’ digital literacy level and its impact on information use behavior as well as to compare students’ information use behavior in digital and non-digital environment.

This participant information statement tells you about the research study. Knowing what is involved will help you decide if you want to take part in the research. Please read the sheet carefully and ask questions about anything that you do not understand or want to know more about the study. Participation in this research is voluntary. So, it is up to you whether you wish to take part or not.

By giving your consent to take part in the study you are telling me that you:

i. Understand what you have read.

ii. Agree to take part in the research study as outlined below.

iii. Agree to the use of your personal information as described.

You will be given a copy of this Participant Information Statement to keep.

2. Who is carrying out the study?

The study is being carried by Mr. Regan Shrestha as the basis for the degree of Master of English Education at the University campus of Kirtipur, Kathmandu. This study will take place under the supervision of Mr. Khem Raj Joshi, teaching assistant at Department of English Education, T.U., Kirtipur.

3. **What will the study involve for me?**

This study involves completing a set of questionnaire. This set of questionnaire contains a set of close ended items and open ended items. These questions are based on my research study.

4. **How much of my time will the study take?**

It will take about 30 minutes to complete the questionnaire for this research study.

5. **Who can take part in the study?**

All the students who are currently studying Bachelor in English Education at Nilkantha Multiple Campus can participate in this study.

6. **Do I have to be in the study? Can I withdraw from the study once I've started?**

Participation in this study is completely voluntary. Your participation in the study will not harm in your career and future. It will help to understand about digital literacy level and its impact on information use behavior. You are free to withdraw from the study. Submitting your completed questionnaire is an indication of your consent to participate in the study.

7. **Are there any risks or costs associated with being in the study?**

Besides from your time investing to response questionnaire, there will not be any risks or costs associated with taking part in this study.

8. **Are there any benefits associated with being in the study?**

This study will help you understand about the digital literacy, students' literacy level and what impact it has on students' information use behavior. You can be more familiar with digital literacy, digital literacy level and its role in your information use behavior.

9. What will happen to information about me that is collected during the study?

Your information will only be used for the purposes outlined in this participation information statement. Your information will be stored securely and your identity/information will be kept strictly confidential, except as required by law. The finding of the study may be published, but you will not be individually identifiable in these publications.

10. Can I tell other people about the study?

Yes, you are welcome to tell other people about the study.

11. What if I would like further information about the study?

If you would like to know more at any stage during the study, please feel free to contact Mr. Regan Shrestha (special_regan07@yahoo.com).

12. Will I be told the results of the study?

You will get the summary of the overall findings of the study and whole thesis paper through the Department of English Education, T.U., Kirtipur, Kathmandu.

13. What if I have a complaint or any concerns about the study?

The ethical aspects of this study have been approved by the Tribhuvan University, Department of English Education, T.U., Kirtipur, Kathmandu. As part of this process, I have agreed to carry out the study according to the ethical consideration.

APPENDIX-II
PARTICIPANT CONSENT FORM

Supervisor

Mr. Khem Raj Joshi

Teaching Assistant

Faculty of Education, Department of English Education, T.U., Kirtipur, Kathmandu, Nepal.

Impact of Students Digital Literacy on Information Use Behavior.

I..... (Participants name), agree to take part in this research study. In giving my consent I state that: I understand the purpose of the study, what I will be asked to do, and any risks/benefits involved.

1. I have read the Participant Information Statement and have been able to discuss my involvement in the study with the researchers if I wished to do so.
2. I have got answers to any questions that I had about the study and I am happy with the answers.
3. I understand that being in this study is completely voluntary and I do not have to take part.
4. I understand that I can withdraw from the study at any time before I submit my responses.
5. I understand that my responses cannot be withdrawn once they are submitted.
6. I understand that personal information about me that is collected over the course of this project will be stored securely and will only be used for purposes that I have agreed to.
7. I understand that information about me will only be told to others with my permission, except as required by law.
8. I understand that the results of this may be published, and that publications will not contain my name or any identifiable information about me.

I consent to completing the questionnaire. ☐ YES ☐ NO

Name: ……..... Signature: …… Date:…….

APPENDIX-III

Questionnaire for Respondents

Dear respondents,

This questionnaire has been prepared to complete a research work entitled "Impact of Students' Digital Literacy on Information Use Behavior in Learning". This questionnaire consists of both close and open ended items. Please read each instruction carefully and response. The results of this survey will be used only for research purposes, so please give honest answers. I value your response and thank you in advance for your time and honesty.

Thank you.

Researcher

Regan Shrestha

Department of English Education

T.U., Kirtipur, Kathmandu

Email: special_regan07@yahoo.com

APPENDIX – IV

Demographic Information

Name: Level:

Semester/ Year: Campus:

Signature: Date:

Digital literacy evaluation criteria on the basis of accessibility, usability and productivity in different elements of digital literacy.

Tick the digital literacy skills that you deal with.

Accessing information	Yes	NO
Use digital technology for accessing various information distributed through digital networks		
Downloads documents, audio or video clips from Internet		
Is able to send and receive information through emails		
Reads Internet newspapers		
Gains information on people, places or goods through the Internet		
Participation in e-learning		

Information management	Yes	No
Has and manages personal information through Internet (website, profile, etc.)		
Ability to understand and use the functions of hardware and software of computers to store and manage information		
Utilizes additional functions of mobile phone to manage information		

Evaluating information	Yes	No
Differentiate between wanted and unwanted information and knowledge in an appropriate way		
Checks uploading date, author, and other metadata of information found on Internet		
Ability to evaluate and judge the credibility of various information distributed through digital networks		

Integration	Yes	No
Ability to select, edit, process, and convert various information to the knowledge necessary		
Ability to utilize computers to prepare documents		
Use internet and digital resources for various assignments		

Creation of new knowledge	Yes	No
Can create or edit picture files		
Can prepare a document by using computer programs such as Hangeul and MS-Word		
Creates new information or knowledge by referring to information or opinions on Internet		
Can conduct activities related to creation by using blogs, Wikis, picture sharing, and other tools for uploading online contents		

Communication	Yes	NO
Can communicate and express things in own language through several different channels on the Internet (blogs, email, Facebook message, Skype, Twitter etc.)		
Can conduct communicative activities for problem solving		
Participates on social websites on a regular basis for communication		

Impact of digital literacy on students' information use behavior.

Tick the information use behavior that you deal with.

Purposes of information use			
Writing paper		Academic challenges	
Perform various projects		Preparation for a class	
Identifying trends			

Information acquisition path			
Personal collection		Publishers and bookstores	
Colleague		Societies, seminars, exhibitions	
Major professionals		Internet	
Library		Social networking sites	

Types of information preferred			
Book		Seminar data	
Academic article		Trend information	
Research report		Statistics	
Thesis			

Information selection criteria			
Recency		Accuracy	
Ease of acquisition		Scope of provision of Full text	
Reliability			

Specialized information service used			
Search services		Communities and blogs	
Trend analysis service and.		Information consulting services	

You are humbly requested to provide the responses regarding information use behavior in non-digital environment in your own words.

1. What are the several purposes for using any information in non-digital environment?

   ……
   ……
   ……
   ……

2. What are the information acquisition paths for non-digital resources you use to enhance your learning?

   ……
   ……
   ……
   ……

3. What types of non-digital information do you prefer to enhance your knowledge?

   ……
   ……
   ……
   ……

4. What information selection criteria do you consider while using information in non-digital environment?

   ……
   ……
   ……
   ……

5. What ethical aspects do you keep in mind while using non-digital information for your study?

   ……
   ……
   ……
   ……