MEASURING INFORMATION LITERACY COMPETENCY OF SOME SELECTED PUBLIC UNIVERSITY STUDENTS: A STUDY

MASTER OF PHILOSOPHY

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SUPERVISOR'S CERTIFICATE

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This thesis is an original study carried out by her under my supervision and guidance. I also certify that the works have not submitted for the award of any degree or diploma.

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DECLARATION

I do hereby declare that the thesis entitled "**Measuring Information Literacy Competency of Some Selected Public University Students: A Study**" submitted to the department of Information Science and Library Management, University of Dhaka for the award of the degree of Master of Philosophy (MPhil) is my original work done under the guidance and supervision of **Dr. Kazi Mostak Gausul Hoq**, Professor of the Department of Information Science and Library Management.

This work has not been submitted earlier by me in any other universities or institutions for the award of any degree or diploma.

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For the degree of Master of Philosophy (MPhil) of the

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DEDICATED

-To My Parents

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LIST OF ABBREVIATION/ACRONYMS

AAHE	American Association for Higher Education
ACRL	Association of College and Research Libraries
AECT	Associations for Educational Communications and Technology
AILS	Australian Information Literacy Standards
ALA	American Library Association
ALIA	Australian Library and Information Association
ANZIIL	Australia and New Zealand Institute for Information Literacy
BA	Bachelor of Arts
BBS	Bangladesh Bureau of Statistics
BLIS	Bachelor in Library and Information Science
BRUL	Begum Rokeya University
BSMMUL	Bangabandhu Sheikh Mujib Medical University Library
BUL	Barisal University Library
BUETL	Bangladesh University of Engineering and Technology Library
BUPL	Bangladesh University of Professionals Library
CAUL	Council of Australian University Librarian
CD-ROM	Compact Disk Read Only Memory
CILIP	Chartered Institute of Library and Information Professionals
CQU	Central Queensland University
DILL	Digital Library Learning
DUL	Dhaka University Library
EDDS	English Department Drama Society
EDLC	English Department Language Club
ERIC	Education Resource Information Center
FCPS	Fellow of the College of Physicians and Surgeons
ICT	Information and Communication Technology
IFLA	International Federation of Library Association and Institutions
IL	Information Literacy
ILCP	Information Literacy and Competency Program
ILCI	Information Literacy Curriculum Integration
ILE	Information Literacy Education

ILP	Information Literacy Program
ISLM	Information Science and Library Management
IT	Information Technology
IUB	Independent University, Bangladesh
JNUL	Jahangirnagar University Library
JUL	Jagannath University Library
LAS	Literacy Assessment Survey
LIANZA	Library and Information Association of New Zealand Aotearoa
LISTA	Library, Information Science & Technology Abstracts
MA	Master of Arts
MEP	Mass Education Program
MPhil	Master of Philosophy
NSTUL	Noakhali Science and Technology University Library
OPAC	Online Public Access Catalogue
PhD	Doctor of Philosophy
RUL	Rajshahi University Library
SAARC	South Asian Association for Regional Co-operation
SACS	Southern Association of Colleges and Schools
SCONUL	Society of College, National and University Libraries
SPSS	Statistical Package for the Social Sciences
UGC	University Grand Commission
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
WWW	World Wide Web

ABSTRACT OF THE STUDY

The prime aim of this study is to assess Information Literacy (IL) Competencies and proficiencies of the selected public university students of Bangladesh and to determine their strengths and weaknesses. In general it was found that students had limited skills in the area of the information literacy. The study exposed that, the information literacy competency of the students is not in a good position.

Mixed methods of both quantitative and qualitative approaches were used, combining questionnaire survey to examine public University students views and experiences with information literacy; their opinions has been encapsulated and data findings that was analyzed and presented in light of the responses of public university students of Bangladesh.

The findings of this study show the information literacy competency of the students is not in a good position and information literacy and competency level is low. Most of the students have not clear concept about information literacy and most of them vague concept. Insufficient facilities and negligence of the department and university authority are the basic problem to provide information literacy program. The study exposed that, students who responded to the questionnaire, their information literacy is not so good. Students are agreed to include IL program, IL education and training courses in their departments.

The study presents a viewpoint of the students of public University in information literacy program and provides some insights into students' knowledge about the concept of information literacy and information literacy education. This study appeared that knowledge needed for increasing information literacy capability such as how to access to information, when information is needed.

Keywords: Information Literacy, Information Competency, Information and Communication Technology, Public University, University Students, Bangladesh.

CHAPTER ONE: INTRODUCTION

1.1 Prologue

The present society has been transformed by the rapid development and diffusion of information and ICT into fields such as education, business, health, agriculture and so on. That is why today's society is increasingly being called an 'information society' and we are witnessing an unprecedented growth of the production of information all over the world. This enormous growth of information is also posing numerous challenges in our personal and professional life, because over abundance of information may lead to confusion in the information-seeker's mind while deciding which information is going to be useful or not (Bruce, 2004).

The process of identifying and selecting information has become complex. It has become more difficult for information seekers to carry out a successful quest for his/her desired information. It is, thus important to explore various information policies and standard concerning information access and use. This realization has led to the emergence of the term 'Information Literacy' (IL) which has very significant implication for today's knowledge-based society. IL is also important in higher education as universities prepare people for professional carries and help to enter and adopt of all branches of knowledge. IL enables individuals to participate with greater understanding in community affairs (CILIP, 2004).

The 21st century has brought considerable changes in higher education throughout the world as a result of new information and technological developments. For students, IL competencies would facilitate independent and authentic learning rather than independence on the teacher to provide answers to questions or problems that they are faced with. But as a developing country in Bangladesh, there is a little awareness about the concept of IL and its impact (Salam and Islam, 2009). This study addresses to assess the perception of IL in some selected public university students in Bangladesh.

1.2 Meaning and Definition of Information Literacy

Information Literacy (IL) is described as the ability to use, organize, evaluate, and access information from various resources. The origins of information literacy can be traced back to the nineteenth century (Rockman, 2004). It is the knowledge of commonly used research techniques. Infrequently Information Literacy referred to as information competency. Being information literate requires knowing how to clearly defines a subject or area of investigation; select the appropriate terminology that express the concept or subject under investigation; formulate a search strategy that takes into consideration different sources of information and the variable ways that information is organized; analyze the data collected for value, relevancy, quality and suitability; and subsequently turn information into knowledge (ALA, 1989). IL used primarily in the library and information studies field and rooted in the concepts of library and bibliographic instruction. It is the ability "to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information" (Presidential Committee on Information Literacy, 1989). In this view, IL is the basis for life-long learning. In the UK, Chartered Institute of Library and Information Professionals (CILIP, 2004) defined information literate as "IL knows when and why you need information, where you find it and how to evaluate, use and communicate it in an ethical manner".

Shapiro and Hughes (1996) provide a broader vision by defining IL as "a new liberal art that extends from knowing how to use computers and access information to critical reflection on the nature of information itself, its technical infrastructure, and its social, cultural and even philosophical context and impact". Doyle's (1992) has defined IL as the "ability to access, evaluate and use information from a variety of sources".

Behrens (1994) has identified the following characteristics of IL:

- it has to be taken into consideration with regard to the manner in which they can assist information handling, and the skills which are required for their use;
- particular attitudes, such as the awareness of a need for information, a willingness to locate and use information, the appreciation of the value of information and the accurate application of the information are required;
- higher order critical thinking skills such as understanding and evaluating information are necessary; mere location of information is insufficient;

- although libraries are regarded as major repositories of information sources, they should not be seen as the only resources;
- library skills are not sufficient for achieving IL; neither are computer skills;
- user education programs require a paradigm shift in order to accommodate the full range of skills required for IL;
- in an information society, IL could be seen as an extension of the literacy realm;
- IL is a prerequisite for active, responsible citizenship;
- goal of IL is the attainment of lifelong skills which enable the person to be an independent learner in all spheres of life;
- IL teaching can enhance the attempts at educational reform which aim at producing independent learners.
- teaching of IL is a combined librarianship and educational issue that requires a partnership between the two disciplines;
- in order for IL teaching to be effective in the educational sphere, the skills should be taught across the curriculum in a resource based learning approach;
- various information skills are required for IL: a) knowing when there is a need for information, b) identifying the information needed in order to address a problem, c) finding the needed information, d) evaluating the located information, e) organizing the information, f) using the information effectively to address the problem.

National Forum on Information Literacy, United States (2005) defines, IL as the ability to know when there is a need for Information, to be able to identify, locate, evaluate and effectively use that Information for the issue or problem at hand. The aspects which constitute the IL are represented by:

- ✓ **Tool literacy**, or the ability to understand and use the practical and conceptual tools of current information technology relevant to education and the areas of work and professional life that the individual expects to inhabit.
- ✓ **Resource literacy,** or the ability to understand the form, format, location and access methods of information resources, especially daily expanding networked information resources.
- ✓ **Social-structural literacy**, or knowing that and how information is socially situated and produced.
- ✓ **Research literacy** or the ability to understand and use the IT-based tools relevant to the work of today's researcher and scholar.

- ✓ **Publishing literacy**, or the ability to format and publish research and ideas electronically, in textual and multimedia forms (including via World Wide Web, electronic mail and distribution lists, and CD-ROMs).
- ✓ **Emerging technology literacy**, or the ability to permanently adapt to, understand, evaluate and make use of the continually emerging innovations in information technology so as not to be a prisoner of prior tools and resources, and to make intelligent decisions about the adoption of new ones.
- ✓ **Critical literacy** or the ability to evaluate critically the intellectual, human and social strengths and weaknesses, potentials and limits, benefits and costs of information technologies.

State University of New York (1997) defines IL as "the abilities to recognize when information is needed and to locate, evaluate, effectively use and communicate information in its various formats". Radar (1995) gave a much broader definition of IL Emphasizing that IL is essential for survival in the future, she argued that information literate citizen will be characterized by an ability to acquire and use information appropriate to any situation, within and beyond the library, both locally and globally. This will be brought about by a variety of rather general competencies, so that information literate people will be able to:

- survive and be successful in an information/technology environment;
- lead productive, healthy and satisfying lives in a democratic society;
- deal effectively with rapidly changing environments;
- ensure a better future for the next generation;
- appropriate information for personal and professional problem solving;
- have writing and computer proficiencies.

1.3 Historical Overview

In 1974, Paul Zurkowski used the term "Information Skills" firstly. To refer the meaning of information skill is a parson who solves the information related problem by using Information and Communication Technology (ICT) based tools and technology. Later in 1980s the term "Information Literacy" used generally ability to use, organize, evaluate, manage and access information from various resources (Behrens, 1994; Webber & Johnston, 2000; Boekhorst, 2004). In 1990s decade, "Information literacy" term was very much populated. The American Library Association (ALA) presidential committee promoted lack of clarification about information literacy. Firstly ALA formulated and used definition, namely

to be "information literate a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information". It implies that an information literate person will have the competencies to find information manually, to use information technology to retrieve and disseminate information and to use information independently (American Library Association, 1989).

In 1990 the American Patricia Senn Breivik founded the National Forum on Information Literacy with the aim of raising awareness of and sharing new developments in information literacy among educational, governmental, technological, and business organizations (Gibson, 2004 and Rockman, 2004).

In 1990s many user education programs were replaced by initiatives aiming to achieve information literacy, but uncertainty and antagonism towards it still prevailed (Behrens 1994).

To address the problem, various library associations started to identify skills that people must master before they will be able to perform all the functions necessary to become information literate. A set of information literacy competency standards for the United States of America was published by a division of the American Library Association (ALA), the Association of College and Research Libraries (ACRL, 2000).

In 1999 the Society of College, National and University Libraries (SCOCUL) published a model for information literacy for the United Kingdom (Society of College, National and University Libraries, 1999: online). In 2001 the Council of Australian University Librarians (Council of Australian University Librarians, 2001) published a document containing what Australian librarians regarded as information literacy standards. After collaborative work between Australia and New Zealand a second edition of information literacy standards was published by the Australian and New Zealand Institute for Information Literacy in 2004 (ANZIL, 2004). In the year 2000, the International Federation of Library Associations and Institutions (IFLA) published guidelines for professional library and information educational programs (IFLA, 2000: on-line). These publications formed the basis for frameworks and models for information literacy internationally.

Three notable models of IL can be compared and summarized as foll0ows (Andretta 2005):

SL	ALA IL Standards	ANZIIL IL Standards	SCONUL Information Skills
An information literate person is able to:			
1	Determine the extent of information needed.	Recognise a need for information and to determine the extent of information needed.	Recognize a need for information.
2	Access the required information effectively and efficiently.	Find information effectively and efficiently.	Distinguish ways in which the information gap may be addressed.
3	Evaluate information and its sources critically and incorporate selected information into his/her knowledge.	Critically evaluate information and the information seeking process.	Construct strategies for locating information base and value system.
4	Use information effectively to accomplish a specific purpose.	Manage information collected or generated.	Locate and access information.
5	Understand many of the economic, legal and social issues surrounding the use of information, and access and use information ethically and legally.	Apply prior and new information to construct new concepts or create new understandings.	Compare and evaluate information obtained from different sources.
6	----	Use information with understanding and acknowledge cultural, ethical, economic, legal and social issues surrounding the use of information.	Organize, apply and communicate information to others in ways appropriate to the situation.
7	-----	-----	Synthesize and build upon existing information, contribution to the creation of new knowledge.

Table 1.1: Summary of the three major IL models.

1.4 Information Literacy Process

Information literacy is not a static concept. It refers to a dynamic process of recognizing information needs, the retrieving, evaluation, use and dissemination of information to acquire, extend or create new knowledge as well as to make decisions for self-actualization

and development (Boekhorst, 2004). Information literacy is not a single act of collecting facts, but the product of a process of information education (Marais, 1994).

1.5 Background of the Study

In 1983, the seminal report 'A Nation at Risk: The Imperative for Educational Reform' declared that a 'rising tide of mediocrity' was eroding the very foundations of the American educational system. It was, in fact, the genesis of the current educational reform movement within the United States. Ironically, the report did not include in its set of reform recommendations the academic and/or the public library as one of the key architects in the redesign of our K-16 educational system. This report and several others that followed, in conjunction with the rapid emergence of the information society, led the American Library Association (ALA) to convene a blue ribbon panel of national educators and librarians in 1987. The ALA Presidential Committee on Information Literacy was charged with the following tasks: a) to define IL within the higher literacy and its importance to student performance, lifelong learning, and active citizenship; b) to design one or more models for IL development appropriate to formal and informal learning environments throughout people's lifetimes; and c) to determine implications for the continuing education and development of teachers. In the release of its Final Report in 1989, the American Library Association Presidential Committee on Information Literacy summarized in its opening paragraphs the ultimate mission of the National Forum on IL (ALA, 1989).

How our country deals with the realities of the Information Age will have enormous impact on our democratic way of life and on our nation's ability to compete internationally. Within American's information society, there also exists the potential of addressing many long-standing social and economic inequities. To reap such benefits, people--as individuals and as a nation must be information literate. To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information. Producing such a citizenry will require that schools and colleges appreciate and integrate the concept of IL into their learning programs and that they play a leadership role in equipping individuals and institutions to take advantage of the opportunities inherent within the information society. Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning,

because they can always find the information needed for any task or decision at hand (Bawden, 2001).

Acknowledging that the major obstacle to people becoming information literate citizens, who are prepared for lifelong learning "is a lack of public awareness of the problems created by information illiteracy", the report recommended the formation of a coalition of national organizations to promote IL. Thus, in 1989, the ALA Presidential Committee established the National Forum on Information Literacy, a volunteer network of organizations committed to raising public awareness on the importance of IL to individuals, to our diverse communities, to our economy and to engage citizenship participation. Bruce (2002) noted that IL has emerged with the advent of information technologies and grown to become recognized as the critical literacy for the twenty-first century. Currently, IL is inextricably associated with information practices and critical thinking in the information and communication technology environment. IL has been an area of increasing interest to librarians and information professionals since 1974 and there is a large volume of literature covering various aspects of the topic (Virkus, 2003).

At present there are 40 (forty) public universities in Bangladesh and the academic activities of these universities are conducted by the UGC (2018). To achieve the areas of research, researcher selected 10 (Ten) universities of Bangladesh basis of convenient sampling method. Research is exclusively limited within these university students to measure the IL competency.

1.6 Information Literacy Skills

Bellardo (1985) defined information literacy; especially on-line searching is not a single activity, but a large number of complex tasks including query analysis, strategy formulation, creative problem-solving and vocabulary manipulation. Information literacy skills were summarized by Barry (1997); DeMars, Cameron and Erwin (2003) and Eisenberg and Berkowitz (1995) into the following sequential stages:

- Define, formulate and analyze the task or problem
- Describe services typically available in libraries
- Choose appropriate reference sources for a particular information need
- Employ an efficient search strategy for a research paper or speech
- Search library catalogues, research data bases and the Internet effectively

- Locate, access and extract relevant information in sources
- Evaluate sources in terms of accuracy, authority, bias and relevance
- Record and store collected information
- Organize and synthesis information in the required format from multiple sources
- Apply information ethics by citing sources appropriately and observing copyright
- Evaluate how well the task was completed or the problem solved

The attributes of information literacy belongs in three groups, the first being information skills, that is, to employ traditional and modern information technology to retrieve, manage and present information in an ever widening array of information sources. The second being the cognitive skills of analyzing, problem solving, critically thinking, critically evaluating, synthesizing, organizing and communicating information. The third is embanked in values and beliefs resulting in using information wisely and ethically as well as with social responsibility and community participation (Andretta, 2005 and Scott *et al*., 2000).

Andretta (2005) identified higher- and lower-order thinking associated with information literacy. Lower-order thinking involves activities such as the identification of keywords, synonyms and related terms when a search strategy is formulated. Higher-order thinking at the other end of the scale involves abstraction to develop a new hypothesis. Information literacy skills are generic in the sense that they are general skills common to all learning areas. Research proved however that these skills are most effectively taught when they are incorporated into a specific discipline. Various successful integration of information literacy teaching into course curriculum has been reported (Rockman, 2003).

Grafstein (2002) listed the following generic information skills:

- **Searching/information retrieval skills:** formulate need, choose keywords, use controlled vocabularies, formulate search strategy and locate information

- **Critical thinking/source evaluation skills:** evaluate all sources for appropriateness regarding timeliness, authority, bias, verifiability and logical consistency

Discipline-specific skills are according to Grafstein (2002) skills that are embedded within the research paradigms and procedures of their disciplines. Students need specialized knowledge of a discipline to:

- Evaluate the content of arguments
- Assess the validity of evidence
- Propose original solutions

1.7 Scope and Sample of the Study

Though IL is a vast concept, researcher focuses some related topics and ideas of interest that are aptitude measuring IL. The scope of the study is somewhat limited. In order to better understand of the student opinions and experiences with IL, the present study is taken only ten Public University students' opinions. These universities are namely:

Sl. No.	Name of the University	Established
1	University of Dhaka (DU)	1921
2	Bangladesh University of Engineering and Technology (BUET)	1962
3	Jagannath University (JNU)	2005
4	Jahangirnagar University (JU)	1970
5	Begum Rokeya University (BRU)	2008
6	Rajshahi University (RU)	1953
7	University of Barisal (BU)	2011
8	Bangabandhu Sheikh Mujib Medical University (BSMMU)	1965
9	Noakhali Science and Technology University (NSTU)	2005
10	Bangladesh University of Professionals (BUP)	2008

Table 1.2: Selected universities for the study

1.8 Information Literacy Framework

In 2000, Georgian College adopted the Information Literacy Competency Standards for Higher Education (ACRL, 2000), which were approved in January 2000 by the Board of Directors of the Association of College and Research Libraries (ACRL), a division of the American Library Association. These delivery standards have been adopted by most colleges and universities in Ontario, as well as other jurisdictions. Information literacy is defined as the ability to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ACRL, 2000).

The ACRL (2000) lists five standards which are broken down into performance indicators, which are then divided further into a total of 87 performance outcomes:

- **Standard One:** The information literate student determines the nature and extent of the information needed;
- **Standard Two:** The information literate student accesses needed information effectively and efficiently;
- **Standard Three:** The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system;
- **Standard Four:** The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose;
- **Standard Five:** The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally (ACRL, 2000).

1.9 Objectives of the Study

The present study has put focus on the following areas:

1) to measure the IL competencies of selected public university students;
2) to find out the problems with regard to provide IL to public university students;
3) to explore the perceptions of IL by the students of public university;
4) to find out the information seeking strategy of the students of public university; and
5) to develop a series of recommendations to enhance IL activities of the students of those public universities.

1.10 Research Question of the Study

The study will try to identify the answer the following questions:

RQ-1 What are the IL competencies of selected public university students?

RQ-2 What are the problems of providing IL to public university students?

RQ-3 What are the perceptions of IL by the students of public university?

RQ-4 How do the public university students use information seeking strategies?

RQ-5 What are problems do they face and how do they can overcome these problems?

1.11 Data Collection Technique

Data is the main ingredient for any research. Data will be collected from selected public Universities of Bangladesh. The study will combine both qualitative and quantitative data along with review of related literature. The conceptual and textual information related to the present study will be collected both from primary and secondary sources of information.

a. **Primary Data or Information:** For collecting Primary data or information interview method will be followed. Primary information will be collected through face to face interview and discussion.
b. **Secondary Data or Information:** For secondary data or information different types of publications will be consulted. These will include journals, research reports, thesis etc.

1.12 Limitations of the Study

A larger sample size would definitely provide more specific information. Since the general students have limited knowledge and they are not familiar with the role and responsibility about IL. That is why the questionnaire and interview result does not reflect the exact condition. They may find it difficult to provide satisfactory answers. However, the researcher takes these limitations to consideration.

1.13 Chapter Outline

The research is organized into ***7 (seven)*** chapters. A schematic diagram is drawing below showing the steps for conducting the study:

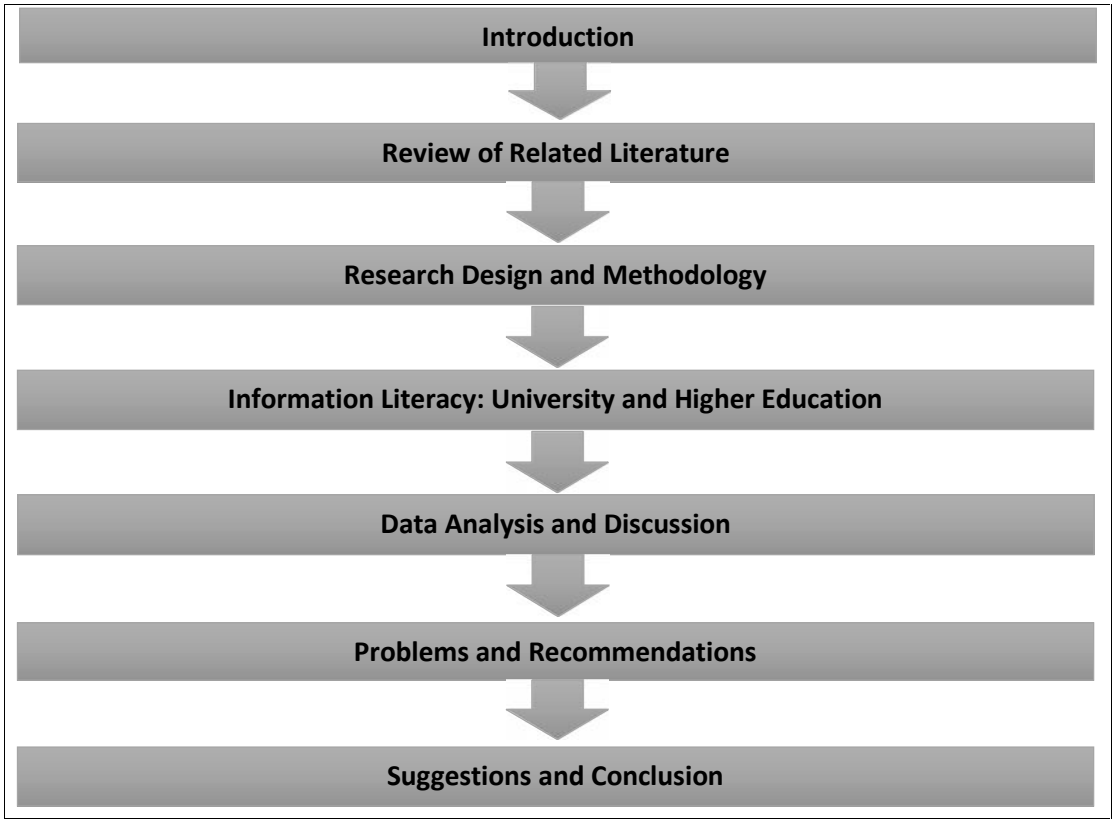

Figure 1.1: Chapter outline

Chapter One: Chapter one included introduction, meaning, definition of IL, background of the study, scope of the study, information literacy framework, objectives of the study, research design and methodology, procedures of data analysis, data collection techniques, limitations of the study, the research problem, followed by the methodology, definitions of basic terms used in the research, the delimitations of scope of the research, outline of the thesis salient points raised in the chapter.

Chapter Two: Chapter two covers the literature reviewed for the research, giving an overview of IL relevant for this study.

Chapter Three: Chapter four covers the research design and methodology with all the related aspects, and also describes both the theoretical framework and theoretical perspective for the research. It also includes questionnaire review, response rate, a brief description of data analysis and presentation procedure and data analysis techniques are also covered in this chapter.

Chapter Four: Chapter four includes about information literacy in university and higher education.

Chapter Five: Data analysis as well as the presentation and discussion of findings cover in chapter five.

Chapter Six: Chapter six covers the problems and recommendations of the research.

Chapter Seven: Finally suggestions and conclusion of the research is given in chapter seven.

1.14 Conclusion

This chapter has provided brief introduction and the background for the study with a about the research as a whole and what will be discussed in subsequent chapters. In short, a general overview of the research has been elaborated, and the immediate chapter will be literature review.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Introduction

A literature review is an evaluative report of information found in the literature related to the selected area of study. The review should describe, summarize, evaluate and clarify this literature. It should give a theoretical base for the research and help to determine the nature of the research. Works which are irrelevant should be discarded and those which are peripheral should be looked at critically (Literature Review Tutorial, 2018).

A literature review uses as its database reports of primary or original scholarship, and does not report new primary scholarship itself. The primary reports used in the literature may be verbal, but in the vast majority of cases reports are written documents. The types of scholarship may be empirical, theoretical, critical/analytic, or methodological in nature. Second a literature review seeks to describe, summarize, evaluate, clarify and/or integrate the content of primary reports (Cooper, 1988). A literature review may be purely descriptive, as in an annotated bibliography, or it may provide a critical assessment of the literature in a particular field, stating where the weaknesses and gaps are, contrasting the views of particular authors, or raising questions. Such a review will not just be a summary but will also evaluate and show relationships between different materials, so that key themes emerge. Even a descriptive review however should not just list and paraphrase, but should add comment and bring out themes and trends. (http://libguides.library.cqu.edu.au/litreview) This literature review provides an overview of the concept of information literacy in relation to university education and the role of librarians in information literacy instruction.

This chapter gives an overview of the concept of Information Literacy (IL), looking at the various definitions, models and standards of IL. The need for IL education, integration of IL into curriculum and the preferences of information sources by students were also discussed. Searches were conducted in online publishers and databases like Sage, Emerald, ERIC, Elsvier, LISTA and E-journal and in other search engines like Google, Google Scholar using.

Various books, magazines and journals on IL, as well as organizational websites like CILIP, were also consulted to get different views on the topic. Only articles and other materials written in English language were consulted. Originally, there was no range limit in terms of dates for materials retrieved but in order to get current information on the topic, the search was later narrowed to materials ranging. As a result, few materials related to the topic were retrieved.

2.2 Information Literacy: National and International Perspectives

Globally so much has been written on information literacy knowledge and skills. In the age of the information explosion, there is no doubt that the Internet and other web technology has improved access to information. As more information is available on the web, people need the skills and knowledge to find, access and use it effectively. As a result, information literacy is gradually becoming a necessity in the information world. The term 'Information Literacy' (IL) refers to the broad set of skills and understandings that enable a person to recognize information needs, decide which resources will best answer those needs, know how to use the resources effectively, and evaluate the information they found (Bundy, 2004). In this definition Zurkqwski suggested that 1) information resources are applied in a work situate on 2) techniques and skills are needed for using information tools and primary sources; and 3) information is used in problem solving (Behrens, 1994). He pointed out that while the population of the United States was nearly 100% literate, only perhaps one-sixth could be characterized as information literates (Seaman, 2001). Information literacy is assumed to be the knowledge and skills necessary to correctly identify information needed to perform a specific task or solve a problem, cost-efficiently search for information, organize or reorganize it, interpret and analyze it once it is found and retrieved (e.g. downloaded), evaluate the accuracy and reliability of the information, including ethically acknowledging the sources from whence it was obtained, communicate and present the results of analyzing and interpreting it to others if necessary, and then utilize it for achieving actions and results (Lau, 2006).

Information literacy, as defined by the American Library Association (ALA), refers to the ability to "recognize when information is needed and […] to locate, evaluate, and use it effectively" (American Library Association, 1989). Information skills and literacy have been defined as, "the process of acquiring knowledge of attitudes towards and skills in

information, as a major determinant of the way in which people exploit reality, develop, live, work and communicate in an information society" (Marais, 1992).

Abdullah (2010) highlighted that the differences between data collected from evidence which is based on the actual performance of individuals who have gone through IL programs, as opposed to just perception-based data (PBD) which is predicated primarily on opinions (whether laymen or experts). He also carried out the outcomes of IL programs can be better measured based on the tangible performance of individuals who have completed an IL program, rather than by the perceptions of students or librarians. Evidence-based data are particularly useful for managers because they provide concrete evidences about specific areas of strengths and weaknesses that need improvement, and/or are otherwise valuable in planning and implementing IL programs in general.

Information literacy is recognized as one of a range of knowledge, values, skills and understandings that are required for lifelong learning. To become lifelong learners, individuals must have access to needed information, and must also be able to judge the quality of the information to which they are exposed (Candy, 2002).

Today's information society transcends all political, social, and economic boundaries. In modern learning environment with an abundance of information resources and formats information literacy skills become crucial. Information literacy is defined as "a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ALA, 1998). The term of information literacy and its interpretations are within the present researchers' interest domain. There are certain elements that link dentitions of information literacy: understanding the information need, information search, its use, evaluation, application for personal needs, communication.

Very often the term is identified as computer or IT literacy, electronic, media, net, hyper or internet, digital literacy or even "informacy". Skill-based literacy's (computer, IT, electronic, etc.) characterize abilities for a particular area, for example, to work with a computer or search information in a library. Conversely, information literacy defines much more general abilities such as self-directed learning, abilities to utilize a variety of information resources and formats, have deep understanding and knowledge of the information world, and

internalize values that motivate ethical and legal use of information. Information literacy conception incorporates other literacy's necessary to function efficiently in the modern society. Some authors argue that different ideas of information literacy and often too narrow interpretation of the concept encourages students' surface approach to learning, for example, understanding information literacy as library instruction. Thus, information literacy being a more general concept, embraces more specific literacies of a particular area. The significance of the term is associated with complexity of information environment, information products, digital space (Bawden and Robinson, 2002; Behrens, 1994).

Bawden (2001) carried out in his literature "Information and Digital Literacies; a review of concepts" highlighted two terms: "Information Literacy and Digital Literacy" that form the basis of Information Science studies. They are associated with issues as varied as information overload, lifelong learning, knowledge management, and the growth of the information society. He also discussed several literacy skills- library literacy, media literacy, computer literacy etc. In regards to library literacy he refers to competencies in the use of libraries, and is arguably a precursor to information literacy, and with a particular emphasis on being able to make informed decisions about sources of information. The other refers to the involvement of libraries in literacy programs in the traditional sense. Information literacy and lifelong learning are interrelated with each other, he also discussed this significant term.

Keen (1992), for example, notes that competencies refer to the ability to operate in ill-defined and ever-changing environments, to deal with non-routine and abstract work processes, to handle decisions and responsibilities, to work in groups, to understand dynamic systems, and to operate within expanding geographical and time horizons. In other words, competencies are a combination of complex cognitive skills (that encompass problem solving, qualitative reasoning, and higher-order skills such as self-regulation and learning-to-learn), highly integrated knowledge structures (e.g., mental models), interpersonal skills and social abilities, and attitudes and values. In addition, competencies assume the ability to flexibly coordinate these different aspects of competent behaviour (Kirschner, 1999).

Information literacy standards and rubrics provide behavioral descriptors to guide curriculum design and evaluation of student learning. These activities are further informed by a variety of models used to describe information problem solving in inquiry, discovery, and problem-based learning activities. Models usually describe this process in terms of six to

ten steps and have been developed in many countries, among them the UK, USA, Canada, Scotland, Australia, and New Zealand. These models are perhaps the most familiar face of information literacy in schools and provide educators with a framework within which specific information skills can be targeted and their coordination can be fostered. They form one focus of the school library programmes that are typically a major force for information literacy promotion. School library programmes usually also address literature appreciation and may include understanding information "as something that is created, organised and shared and … something that is affected by both creators and consumers" (Oberg, 2001).

Secker (2004) mention on his literature "E-learning and Information literacy" described how the development of e-learning is changing the education and makes it more flexible and also described how it provides support in the learning and information literacy sector. While the information professionals evolving and adopting themselves in the new technologies and new media they also introduced themselves into the new knowledge which makes them smarter and they would be able to meet the information needs of the changing demands of the users and they would also be skilled to provide appropriate instructions to use library resources both traditional and electronic resources using new technologies. Salam and Islam (2009) focused on an exclusive work entitled "Information literacy: perceptions and skills of graduates of the Institute of Education and Research" where they carried out to assess the IL perceptions and skills of the graduates of the Institute of Education and Research (IER) and also give focuses to determine their strength and weakness. They also mentioned that students had limited skills in the area of IL. They urged that incorporation of IL concepts and courses in the curriculum of IER could be widening the scope of IER graduates to be more information literate.

Bruce, a well-known Australian information literacy researcher, notes: The idea of information literacy, emerging with the advent of information technologies in the early 1970s, has grown, taken shape and strengthened to become recognized as the critical literacy for the twenty-first century. Sometimes interpreted as one of a number of literacies, information literacy is also described as the overarching literacy essential for twenty-first century living. Today, information literacy is inextricably associated with information practices and critical thinking in the information and communication technology environment' (Bruce, 2002). Lupton (2004) refers to information literacy as "a means of personal empowerment" which enhances a person's ability for lifelong learning and

proposes that there is a distinction between information literacy and information seeking and use. It is the process of analyzing and resolving issues through the effective use of information that facilitates constructive learning.

Yang (2009) focused on his study which entitled “Information literacy online tutorials: An introduction to rationale and technological tools in tutorial creation” carry out a survey on the current technologies used in creating information literacy online tutorials in academic libraries. The one challenge in the age of information exploration students and the faculty members are faced with are the difficulties to identify their relevant information sources and library instruction guidelines are necessary to overcome this problem. The findings indicate that about 33 percent of the surveyed libraries have developed their own online tutorials. The study provides the findings of a survey of current technologies used in creating information literacy online tutorials in academic libraries. It also informs readers of the technological tools available to develop good online tutorials. “Information literacy is a prerequisite for lifelong learning and is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to engage critically with content and extend their investigations, become more self-directed, and assume greater control over their own learning” (CAUL, 2004).

SCONUL (2011) showed an awareness of how they gather, use, manage, synthesize and create information and data in an ethical manner and will have the information skills to do so efficiently. In other words, this new model defines the core competencies which include knowledge and skills that are the goals of information literacy development in higher education. Each core competency called a "pillar". Within each “pillar” a researcher can develop from “novice” to “expert” as they progress through their research life, although, as the information world itself is constantly changing and developing, it is possible to move down a pillar as well as progress up it. The pillars are envisioned as a circle or cycle, rather than a sequence, and individuals can achieve different levels of complexity within each pillar (Anuobi and Udem, 2015). The seven pillars are:

Pillar 1-Identify **:** A researcher is able to identify a need for information;

Pillar 2-Scope **:** A researcher can assess current knowledge and identify gaps;

Pillar 3-Plan **:** A researcher can construct strategies for locating information and data;

Pillar 4-Gather : A researcher can locate and access the information and data they need;

Pillar 5-Evaluate : A researcher can review the research process and compare and evaluate information and data;

Pillar 6-Manage : A researcher can organize information professionally and ethically; and

Pillar 7-Present : A researcher can apply the knowledge gained: presenting the results of their research, synthesizing new and old information and data to create new knowledge and disseminating it in a variety of ways.

Macklin (2001) carried out a work on the title "Integrating information literacy using problem based learning" he suggested the term IL which is used to increase the ability of the citizen to face any information related problem and help them to obtain the individual and independent views. Further said, an information literate person is a person who has the skills and knows the techniques for using information seeking tools in solving problems and has skills to utilize library resources optimally.

American Library Association (ALA) Presidential Committee on Information Literacy (1989) focused on the fact that students should have competency in six general areas:- i) recognizing a need for information, ii) identifying what information would address a particular problem, iii)finding the needed information, iv)evaluating the information found, v)organizing the information, vi) using the information effectively in addressing a specific problem. It also viewed IL in lifelong learning context producing such a citizenry will require that schools and colleges appreciate and integrate the concept of IL into their learning programs and that they play a leadership role in equipping individuals and institutions to take advantage of the opportunities inherent within the information society. This report was updated in (1998) and emphasized repeatedly the need for all people to become information literates, which means that they are not only able to recognize when information is needed, but they are also able to identify, locate, evaluate, and use effectively information needed for the particular decision or issue at hand. The information literate person, therefore, is empowered for effective decision making, freedom of choice, and full participation in a democratic society. "To respond effectively to an ever-changing environment," the report concluded, "people need more than just a knowledge base, they also need techniques for exploring it, connecting it to other knowledge bases, and making

practical use of it. It also reported that IL competency makes the people lifelong learners which leads them to become conscious citizens and they can keep contribute in the socio political perspective of the country.

Webber (2006) focused on an exclusive work entitled “Information literacy standards and statements” Information Literacy extensively used in the United Kingdom and around the world. He also focused that SCONUL's Seven Pillars of Information Literacy model forms the basis for discussing information literacy knowledge and skills in this study. In order words, SCONUL'S Seven Pillars of Information Literacy model frames this study. The United Kingdom's Society of College, National and University Libraries (SCONUL) published its information literacy model called the Seven Pillars of Information Literacy in 1999. However, in 2011 the SCONUL working Group on Information Literacy updated and expanded the model in order to reflect more clearly the range of different terminologies and concepts which are now understood as information literacy.

Each pillar according to SCONUL (2011) is further described by a series of statements relating to a set of competencies. In other words, each pillar deals with combination of knowledge and skills towards identifying a need for information; assessing current knowledge and identifying gaps; constructing strategies for locating information and data; locating and accessing the information and data needed; reviewing the research process and comparing and evaluating information and data; and organizing information professionally and ethically. SCONUL's Seven Pillars of Information Literacy model as discussed so far frames this study. This is because it explained in details what are expected from students or individuals in order to attain the information literacy competencies. In other words, it deals with attributes of information literate person which is the combination of knowledge and skills that make up information literacy competencies. This theoretical model is related to this study because it explained in details the information literacy knowledge and skills which the present study intends to measure.

Town’s presentation at the first International Conference on Information Technology and Information Literacy in Glasgow, in an attempt to explain information literacy knowledge stated that “ information literacy is knowledge rather than simple skill, achieved by education rather than training, created through partnership between professionals and is a lifelong attempt that is contextual in field and service access” (Town, 2002).

Horton (2007) includes the eleven stages of information literacy knowledge. He stated that a need or problem exists that requires information and its satisfactory resolution; know how to accurately identify and define the information needed to meet the need, solve the problem, or make the decision; know how to determine whether the needed information exists or not, and if it does not, know how to create, or cause to be created the unavailable information, also referred to as "creating new knowledge"; know how to find the needed information if you have determined that it does, indeed, exist; know how to create, or cause to be created, unavailable information that you need; sometimes called "creating new knowledge."; know how to fully understand found information, or know where to go for help if needed to understand it; know how to organize, analyze, interpret and evaluate information, including source reliability; know how to communicate and present the information to others in appropriate and usable formats and mediums; know how to utilize the information to solve a problem, make a decision or meet a need; know how to preserve, store, reuse, record and archive information for future use; know how to dispose of information no longer needed, and safeguard information that should be protected.

Newton (2005) focused his work entitled "What is information literacy?" information literacy knowledge has to do with knowing: when you have a need for information; the resources available to you; how to find information; the need to evaluate results; how to work with or exploit results; the ethics and responsibility of using information; how to communicate and share your research finding; and how to manage your research findings. Also information literacy knowledge focuses on: reorganization of the need for information; knowing how to access information; understanding how to evaluate information; knowing how to synthesize information; and knowing how to communicate information. Consequently, Ranaweera (2008) noted that "information literacy skills empower the people with critical skills which will help them to become independent lifelong learners. These skills will enable people to apply their knowledge from familiar environment to the unfamiliar".

Information literacy skills as pointed out by Kovalik, Jesen, Schloman and Tipton (2010) refers to an individual's ability to recognize when there is a need for information, and to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand. Mitchell (n.d) indicated that Information literacy skills are exemplified by ideas such as the ability to discover, retrieve, and use information, the ability to manage information, and the ability to make critical choices about information resources.

Ojedokun (2007) posited that information literacy skills in all disciples requires an individual to be able to define problem; initiate a plan to find information; locate and access resources; use the information; synthesize information; and carry out some forms of evaluation. On this regard, Bruce (2003) pointed out that information literacy skills deals with the ability to access, evaluate, organize and use information in order to learn, solve problem, and make decisions in formal and informal learning contexts, at work, at home and educational settings.

Kurbanoglu (2004) find out the total impact of IL studies conducted in Turkey has been less than satisfactory. The direct applications of IL have been limited mostly to private schools and universities with adequate funding, personnel and technical infrastructure. The importance of the issue is far from ignored and several well meaning attempts are made to make IL a cornerstone of Turkish education. However, the realization of these efforts will require time and patience when the conditions of school and public libraries in the country are taken into account. It seems likely that university libraries are the best candidates to develop and maintain IL programs in the country.

Bundy (2002) find out a study entitled “growing the community of the informed: information literacy - a global issue” where he stated many countries have recognized the importance of IL skills among their citizens and have implemented programs to inculcate the necessary competencies and skills among students at all levels. Oketunji (2002) presented a paper on “application of information technology in Nigeria: problems and prospects” the paper mentions IL includes library literacy, media literacy, computer literacy, research literacy and critical thinking skills. Wurman (2001) summarizes it all by stating that “without IL people are condemned to lack of information, dependence upon others for access to knowledge and information and even to acute levels of 10 information anxieties”. He also stated that “IL is no doubt very important in education and therefore a convenient approach must be used to teach it in order to make it more effective”. Macklin (2001) carried out that IL to democracy suggesting a connection between active citizenship and IL used the term to refer to the need for the general public and views IL as the ability to obtain an individual and independent view of news events.

Seaman (2001) carried out a research entitled “literacy: a study of freshman students’ perceptions, with recommendations” where he showing that IL is not a discrete set of skills,

but rather a way of learning. The Big Six Skills Approach developed a parallel development for K12.

Maughan (2001) in this study the author stated that the study reported the University of California at Berkeley conducted an ongoing survey of information competencies in selected academic departments, namely political science, history, sociology and philosophy, in order to measure IL among graduating seniors. Other studies using survey methods among students on US campuses include those conducted by Brown (1999) at Oklahoma University to explore the IL level of physical science graduate students. Nero (1999) at four Pennsylvania State System of Higher Education universities using a questionnaire as the instrument among graduating teachers; and Case-Smith and Powell (2003) to assess whether graduates of the occupational therapy program of Ohio State University were applying the information-seeking skills they had learnt as undergraduates.

Hepworth (1999) conducted a study entitled "a study of undergraduate information literacy and skills: the inclusion of information literacy and skills in the undergraduate curriculum" in which a rarely used methodology a qualitative study by among students at Nanyang Technological University in Singapore is quite unique in its attempt to determine respondents' strengths and weaknesses in terms of their IL and skills. Based on the findings, recommendations were proposed to help develop IL skills and incorporate their delivery in the university curriculum and not to treat it as a separate subject. Juline (1998) carried out a research on "User education in New Zealand tertiary libraries: an international comparison" the paper compares user education surveys conducted in New Zealand and Canada. Although the report refers to 'user education' the relationship to IL programs is explored. Useful information regarding student attitudes towards developing IL skills and just where responsibility for developing these skills lies is presented. In the concluding statements of this article the author points to a lack of structure in both countries in their approach to IL programs.

Andretta (2005) study of information literacy skills identifies higher and lower order thinking associated with information literacy skills. Lower order thinking according to Andretta involves activities such as the identification of keywords, synonyms and related terms when a search strategy is formulated. Higher-order thinking at the other end of the scale involves abstraction to develop a new hypothesis. The International Federation of Library

Associations and Institutions (IFLA) information literacy standards as noted by Lau (2006) grouped information literacy skills under three basic information literacy components which include; access, evaluate and use. The three basic information literacy components are further categorized with some features. The review has unveiled a very sharp overlap between information literacy skills and knowledge. Knowledge can be considered a stepping stone to the skill.

Sumpter (2006) found in his study entitled "A baseline assessment of information literacy competencies of students in the school of public health at the University of North Carolina at Chapel Hill" information literacy competencies of students in the School of Public Health at the University of North Carolina that the graduate students established a high proficiency in information literacy competencies, but a significant number of graduate students had important weaknesses in them as part of revised accreditation standards, Singh (2005) conducted a survey study on information literacy competencies of students in Journalism and Mass communication at universities in the United States to assess the faculties' perceptions of their students' information literacy skills as defined by Association of College and Research Libraries (ACRL) Standards and Revised Accreditation Standard.

According to Williams and Wavell (2007), "Descriptions of information literacy take the form of differing interpretations, frameworks illustrating the information process, lists of attributes or skills, or models designed to support the development of information literacy".

Shoeb (2012) carried out a work on "Shaping up Information Literacy in a New Venue, a University in Bangladesh". He explored the role of IL for students' effective learning through faculty-librarian cooperation. It also presented the reasons for developing and adopting IL as lifelong learning process where integration into the curriculum also defined. Students' survey result revealed the significant statistical differences towards their online research behavior that observed as their scarcity of information problem solving skills. In his study he said that Information Literacy Education (ILE) program is to be initiated for the freshman undergraduates' students who determined to study business at Independent University, Bangladesh (IUB). This study intended to suggest ILE program with specific goals, objectives, activities and resources which may be relevant for the target group and may fit with the institutional mission of IUB.

For Kinengyere (2007), being information literate “requires knowing how to clearly define a subject or area of investigation; select appropriate terminology that expresses the concept under investigation; formulate a search strategy that takes into consideration different information sources and the various ways information is organized; analyze the data collected for value, relevancy, quality and suitability; and subsequently turn them into knowledge” (p.329). Lenox and Walker (1993) also define information literacy by characterizing the information literate person: one who has the analytical and critical skills to formulate research questions and evaluate results, and the skills to search for and access a variety of information types in order to meet his or her information need. As will be outlined below, this focus on the individual is continued in the US and Australian standards for information literacy.

Singh and Begum (2012) highlighted three pillars of national building on their work “Education, Information Literacy and Lifelong Learning: Three Pillars of Nation Building in the Emerging Knowledge Society” are Education, Information Literacy and Lifelong Learning. They gave focus that to provide proper education, to increase information literacy skills among the people and to widen the path lifelong learning, library can play a vital role. This paper also highlighted the impact of ICT on the life and work of people, and paradigm shift in libraries. It further explained that more important thing of a library (traditional or digital) is the mandate and the context of the library which includes the challenges and opportunities facing libraries, and concludes that the future of libraries is though uncertain, yet in our own hands.

Plotnick (1999), ACRL (2000) and numerous others quote the American Library Association (1989) in saying that: "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information". Other definitions of the information literate person tend to cover the same elements, but expand on them in one way or another. For example, Doyle (1992) defined an information literate person as one who:

- "recognizes the need for information;
- recognizes that accurate and complete information is the basis for intelligent decision making;
- identifies potential sources of information;
- develops successful search strategies;

- accesses sources of information, including computer-based and other technologies;
- evaluates information;
- organizes information for practical application;
- integrates new information into an existing body of knowledge, and;
- uses information in critical thinking and problem solving."

Baro and Fyneman (2008) conducted a comprehensive work among the undergraduate students in Niger Delta University which entitled “Information Literacy among Undergraduate Students in Niger Delta University” to determine their level of awareness of information sources in the university. They noted that IL is important particularly in this age because it allows us to cope by giving us the skills to know when we need information and where to locate it effectively and efficiently. They also recommended that IL skills should be taught in Niger Delta University in the context of the overall process, integrated into the Niger Delta University curriculum and reinforced both within and outside of the educational arena, and this inspires students to explore the unknown. Adeogun (2006) expresses similar views by stating that “the purpose of IL education is to help students to develop critical thinking and analytical skills which they will need for transforming information into knowledge”.

Adeogun (2006) shares that there is the need for graduates to acquire lifelong learning skills which will not only be beneficial in education, but will help them to continue to grow even outside the classroom after their education. She concludes that “such skills are acquired through an educational system that enables students to develop a set of critical thinking skills involving the use of information to create meaning” and she adds that “building such skills requires interaction with real world information resources for information gathering and synthesis, and this calls for the development of IL skills among tertiary institution students”.

Lim (2004) carried out that IL is highly desirable in this knowledge economy and should be taught in every discipline. It is imperative that students acquire 21st century skills, including being able to find information that is relevant and reliable. Islam and Tsuji (2010a) they carried out a comprehensive work entitled “assessing information literacy competency of Information Science and Library Management graduate students of Dhaka University” in which they shown that the IL competency of Information Science and Library Management

(ISLM) graduate students at the University of Dhaka, Bangladesh, and to determine their strengths and weaknesses. It was discovered that students had limited skills in the area of information literacy, as it is not discussed extensively in their course curriculum. They urges the incorporation of an IL program in the course curriculum and more writing, discussion and other relevant issues that will make the students more information literate. Shuva (2004) demonstrated in his paper entitle “Information Literacy: Bangladesh perspective”, the present status of literacy rate and IL situation in Bangladesh as well as proposed some recommendations to increase the IL levels and also provided some national and international alliance for IL.

In addition he recommended, without national and international cooperation and coordination IL program cannot be a successful one in developing countries. He also includes his paper, without good information literacy program proper development of a country may be hampered. The best way to develop information literacy program in developing countries is to call developing country’s organization that are willing to develop information literacy activities to come developed countries and get training on information literacy activities, with a view to give them guideline to launch information literacy program in their respective country.

Consequently, another literature (2008) entitled “Integrating Information Literacy into the University Curriculum of Bangladesh: A Proposal” of Shova described the ways to integrate information literacy into the university curriculum of Bangladesh as well as tried to identify the problems that hinder the integration process. He described the education system of Bangladesh and also draws a diagram of information literacy curriculum integration (ILCI) task force at the University of Dhaka. Obstacles to Integrate Information Literacy into the University Curriculum of Bangladesh are also identified and recommendations have been provided by him.

Shoeb (2011) carried out his study entitled "Information literacy competency of freshman business students of a private university in Bangladesh" where he observed that students more or less have used information for their purposes. He focused on students’ detail behavior regarding different information literacy statements of awareness defining information needs and findings as per their needs, evaluating and organizing information as per requirement, presenting in correct form and using it fairly. He also observed that most of

the respondents have no idea about information literacy; either they have not planned before formally to use information systematically, or even they did not find IL necessary or important to solve their problem earlier.

Hoq (2006) stated that IL programs being implemented in other parts of the world should at as an eye-opener for the government and educational institutions in Bangladesh. He also focused that knowledge creation, codification, diffusion and effective use will be driving growth and competitiveness and lack of IL and knowledge tools will give rise to knowledge divides and social exclusion. The study shows that undergraduate information literacy competencies were mostly insufficient and poor. The review has revealed a knowledge gap in the area of information literacy competencies of students in Bangladesh. Hence the research was designed to fill the gap.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

Research design is the major part of a research. Chapter three includes research design and methodology of data collection from selected university students in Bangladesh. To measure the information literacy competency skill and abilities of public university students' research design have preserve properly.

3.2 Research Design

The study was conducted by mixed method research techniques such as qualitative and quantitative methods for data collection. Research consists of number of records, figures, tables and information. Records, figures, tables and information comes from primary and secondary sources. The primary data was collected using questionnaire; questionnaire includes both open-ended and close-ended questions designed on issues directly related to the objectives of the research. Secondary sources of data incorporated earlier research works such as books, journals, reports, magazines, electronic sources and other related resources. Patton (1990) argues that inductive analysis means that the patterns, themes and categories of analysis come from the data; they emerge out of the data rather than being imposed on prior to data collection and analysis. To analyze primary and secondary data both deductive and inductive analyses were used. All analysis was conducted carefully by researcher.

3.3 Sources of Data

Data is the main ingredient for any research. Data can be collected from the field from any other sources. Data was collected from the students of ten public University of Bangladesh. The study combined both the qualitative and quantitative in nature along with review of related literature. The conceptual and textual information related to the present study were collected both from primary and secondary sources of information.

- **Primary Data or Information:** For collecting Primary data or information researcher would follow questionnaire method. Researcher collects primary information using questionnaire.
- **Secondary Data or Information:** For secondary data or information researcher have gone through different types of publications. Researcher had also used published data. These are various Open Access (OA) of journals in Bangladesh and also other countries, various types of e-journals which was related to my study and existing literature on the subject was searched and studied to examine various websites.

3.4 Sample of Research

In social research many types of techniques to choice a sample size and sampling methods. To accomplish the objective of the research, researcher was selected ten public university in Bangladesh based on convenient sampling method. To collect data from the students of those universities using questionnaire based on purposive sampling. Ten universities in Bangladesh have been selected for the primary population of this research. Selected universities are:

Sl. No.	Name of the university
1	University of Dhaka (DU)
2	Bangladesh University of Engineering and Technology (BUET)
3	Jagannath University (JNU)
4	Jahangirnagar University (JU)
5	Begum Rokeya University (BRU)
6	Rajshahi University (RU)
7	University of Barisal (BU)
8	Bangabandhu Sheikh Mujib Medical University (BSMMU)
9	Noakhali Science and Technology University (NSTU)
10	Bangladesh University of Professionals (BUP)

Table 3.1: Sample of the research

3. 5 Questionnaire Format and Management

After a thorough review of the literature on similar assessment tools, it was decided to use questionnaires for the measurement of information literacy. Reasons for using questionnaires are to assess large numbers of respondents, to assess a wide spectrum of information literacy aspects and to develop a tool that will suit public university students.

The first part of the questionnaire gathered demographic information and assessed the exposure to information literacy training, computer literacy experience and public library usage prior to university education. The second part determined the baseline information literacy competence and also covered most aspects of the information literacy process were used to test information literacy competence.

3.6 Questionnaire Design

A questionnaire was developed for measuring the information literacy of university students in Bangladesh. The questionnaire was designed in order to explore findings supporting on IL. The questionnaire included 23 questions which includes various technical questions. Of the twenty three questions, four were open ended questions and the rest of all are multiple choices. It was made with simple, direct and familiar words, keeping the respondent level in mind for gathering data and information regarding their measuring towards concerning IL. Questionnaires were distributed among ten public university students in Bangladesh. Questions were designed to increase contributions and emphases were placed to take their opinion and thinking. The questionnaire with questions in numerical order and not as it appeared as the A4 format is listed in Appendix-I. Five hundred questionnaires were distributed to the students. (Table 3.2).

Sl. No.	Name of the university	Sample Size
1	University of Dhaka (DU)	50
2	Bangladesh University of Engineering and Technology (BUET)	50
3	Jagannath University (JNU)	50
4	Jahangirnagar University (JU)	50
5	Begum Rokeya University (BRU)	50
6	Rajshahi University (RU)	50
7	University of Barisal (BU)	50
8	Bangabandhu Sheikh Mujib Medical University (BSMMU)	50
9	Noakhali Science and Technology University (NSTU)	50
10	Bangladesh University of Professionals (BUP)	50
	Total	**500**

Table 3.2: Questionnaire distributed among the ten university students

3.7 Method of Data Capturing

Questionnaire provided ten mentioned universities of various students. Researcher briefed four-six minutes about IL at the beginning of providing questionnaire to the respondents. Then collected filled up questionnaire from the respondents. After receiving questionnaire, researcher gave a serial number against each university for inputting data into analytical SPSS software.

3.8 Response Rate

Based on random sampling method 500 number of questionnaires distribute among ten university students. After filled up the questionnaire total numbers of 447 were received. 447 out of 500 questionnaires were received filled up by the students which have been tabulated and analyzed in table 3.3. The overall response rate of 89.40% was quite high given the target population, the timeframe and the object of the study. It appears that the draw was an excellent incentive. However, the number of comments received confirms the students' real interest in the subject and their desire to answer the questionnaire in earnest.

Sl. No.	Name of the university	Sample	Received and analyzed	%
1	University of Dhaka (DU)	50	49	98.00%
2	Bangladesh University of Engineering and Technology (BUET)	50	46	92.00%
3	Jagannath University (JNU)	50	48	96.00%
4	Jahangirnagar University (JU)	50	44	88.00%
5	Begum Rokeya University (BRU)	50	43	86.00%
6	Rajshahi University (RU)	50	41	82.00%
7	University of Barisal (BU)	50	42	84.00%
8	Bangabandhu Sheikh Mujib Medical University (BSMMU)	50	47	94.00%
9	Noakhali Science and Technology University (NSTU)	50	46	92.00%
10	Bangladesh University of Professionals (BUP)	50	41	82.00%
	Total	**500**	**447**	**89.40%**

Table 3.3: Distribution of response rate among the students

447 respondents out of a total of 82, or 18.34%, wrote comments after the statement "If you have any other suggestion, please mention here". Some of these were opinions are:

- ✓ If we want to know about our country or the world, we should more read information literacy.
- ✓ I don't know much about information literacy that what actually it means.
- ✓ More read information literacy....
- ✓ Emphasizing information and technology training, emphasizing on library studying journals, improving on internet communication system.
- ✓ Need to more developed information and technology, need to more emphasize on reading newspaper and so others.
- ✓ Students should be ensured about the facilities of using their information as well as getting information.
- ✓ I can suggest that institution of all students ensure for advantage of information literacy.
- ✓ Workshop should be arranged about this topic.
- ✓ If we want to know about information literacy, we would turn on the system. We need to know about it in every sphere of life.
- ✓ Teachers should teach and share their idea. University should provide access to international online library and portal.
- ✓ Department should take initiative like seminar and workshop to spread information literacy.
- ✓ Our department should immediately start information literacy program.
- ✓ The theme of information literacy and its importance should be spread more vastly by arranging seminar, campaign program s to all sectors of any university.
- ✓ You can contact with me if you need to more about information literacy.
- ✓ Department should give priority to collecting information through online as well as lectures, demonstration.
- ✓ We have to arrange a literacy program between intervals 1 up to 6. Then we will able to make a good perception about our information literacy knowledge.

Some of respondents' opinions and comments are included in the above.

3.9 Procedure of the Data Analysis

All questionnaires inputted in the computer according to serial number against each university for the data analysis. For the analyze data STTA (statistical software Package) and Microsoft Office Excel 2013 were used, which has helped to make the analysis easier, more efficient and more effective. Frequency table, data analysis, etc. have been used to describe the findings and Chart wizard, graph different types of figures have been used to represent the findings from the survey.

3.10 Conclusion

The questions asked in the questionnaire connected to the learning outcomes of information literacy. This chapter has explained the research design and methodology with all the related aspects and also describes both the theoretical framework and perspective for the research. It also includes questionnaire review, response rate, a brief description of data analysis and presentation procedure and data analysis techniques are also covered in this chapter. In short, a general overview of the research has been elaborated, and the immediate chapters will be IL in university and higher education.

CHAPTER FOUR: INFORMATION LITERACY: UNIVERSITY AND HIGHER EDUCATION

4.1 Introduction

This chapter aims to investigate how IL can be systematically integrated into higher education. This chapter discusses the outline the influence of IL on higher education curriculum. It concludes with the identification of a gap in the research relating to cross-curricular of IL. According to the Association of College and Research Libraries (2000), information literacy is a key component of lifelong learning and because information literacy augments students' competency with evaluating, managing and using information, it is considered as a key learning outcome.

4.2 Information Literacy Research Development

IL research has gone through four phases over the last three decades (Bruce 2000). The first phase was described as the "precursors" (1980s) when, during that period, IL research focused on information skills and bibliographic instruction. An influential definition of IL was established by the end of this phase when the ALA Presidential Committee on IL published its final report (ALA, 1989). When the term "Information Literacy" began to be used in research the second phase was started in 1990-1995. From that time USA, Canada and UK lead to the term being widely understood and used. In 1995-1999 the third phase was exploratory when a variety of paradigms beyond the positivist approach to IL research were explored. The fourth phase started from 2000 as 'growing'. The development of a community of researchers and research terms; growth in research beyond the educational sector, particularly the workplace and community was developed in this phrase (Bruce 2000). This is still growing in this phase.

4.3 Information Literacy in Higher Education

University students have lack of IL capability and that it is necessary to provide IL education for them in higher education. IL is a required graduate attribute of many institutions for their graduates (Barrie, 2007). The requirement for information literate graduates has an impact

on IL and curricular development in higher education. The focus of IL research is closely associated with the development of graduate attributes. A significant number of students of university level have limited knowledge, or no knowledge of basic elements characterizing the information research process. They did not know how to do informational searching or browsing (Walton and Archen, 2004). Science 1999, a number of frameworks for IL has been developed in higher education Sector. These include the 'Seven Pillars' of IL in UK by the Society of College, National and University Libraries (SCONUL, 1999). Information literacy should be integrated into the core higher education curriculum as a university-wide responsibility (Rockman and Associates, 2004). Information literacy is one of the four essential abilities, along with reading, writing and mathematics that students in higher education should acquire (Sun, 2002). Information literacy in higher education is not controversial – everybody agrees that it is important.

4.4 Importance of Information Literacy

Information Literacy (IL) skills are very important for all citizens whether they are in an office, in a work-at-home environment, in school, or in other social settings, due to the growing boost not only in information resources, but also in the different access methods. For students, IL competencies should smooth the progress of independent and authentic learning, rather than create a dependence on the teacher to provide answers to questions or problems that they are faced with. In addition, these competencies should help them become self-motivated learners and thinkers, who are creative, analytical and effective (Mokhtar, Majid and Foo, 2008). Increasingly, information comes unfiltered. So, questions about authenticity, validity, and reliability, which represent large challenges for researchers, begin to be raised. "Sheer abundance of information and technology will not in itself create more informed citizens without a complementary understanding and capacity to use information effectively" (Bundy, 2004).

Therefore, information literacy aims to provide people with an important concept of lifelong learning. If people recognize that everything is becoming increasingly dependent on information, as well as the learning skills necessary to get it (business, economic development, governance and so forth), then getting information, evaluating it and using it becomes essential to knowledge. Eventually, information literate people are those. Who have learned how to become skilled at something? They can always find the information needed for any task or decision at hand (ALA, 1989). When individuals are able to do that

over the course of their lifetime, they become lifelong learners (UNESCO, 2007).

4.5 Information Literacy Competency Standards for Higher Education

The American Library Association published the five standards, performance indicators and outcomes necessary for higher education in the year 2000 and a revised edition in 2005 (ACRL, 2000). It extends the competencies that learners must master at school level. After reviewing the American standards, the Council of Australian University Libraries published what they regarded as information literacy standards for higher education. It consisted of seven, compared to the American's five standards. The additional standards address the ability to control and manipulate information and the intellectual framework for lifelong learning (Council of Australian University Librarians, 2001). The five standards are following:

4.5.1 Standard I

The information literate student determines the nature and extent of the information needed.

Standard Performance Indicators

A) The information literate student defines and articulates the need for information.

Outcomes Include

1. confers with instructors and participates in class discussions, peer workgroups, and electronic discussions to identify a research topic, or other information need;
2. develops a thesis statement and formulates questions based on the information need;
3. explores general information sources to increase familiarity with the topic;
4. defines or modifies the information need to achieve a manageable focus;
5. identifies key concepts and terms that describe the information need;
6. recognizes that existing information can be combined with original thought, experimentation, and/or analysis to produce new information.

B) The information literate student identifies a variety of types and formats of potential sources for information.

Outcomes Include

1. knows how information is formally and informally produced, organized, and disseminated;
2. recognizes that knowledge can be organized into disciplines that influence the way information is accessed;
3. identifies the value and differences of potential resources in a variety of formats (e.g., multimedia, database, website, data set, audio/visual materials and book);
4. identifies the purpo5e and audience of potential resources (e.g. popular vs. scholarly, current vs. historical);
5. differentiates between primary and secondary sources, recognizing how their use and importance vary with each discipline;
6. realizes that information may need to be constructed with raw data from primary sources.

C) The information literate student considers the costs and benefits of acquiring the needed information.

Outcomes Include

1. determines the availability of needed information and makes decisions on broadening the information seeking process beyond local resources (e.g., interlibrary loan; using resources at other locations; obtaining images, videos, text, or sound);
2. considers the feasibility of acquiring a new language or skill (e.g. foreign or discipline-based) in order to gather needed information and to understand its context;
3. defines a realistic overall plan and timeline to acquire the needed information.

D) The information literate student re-evaluates the nature and extent of the information need.

Outcomes Include

1. reviews the initial information need to clarify, revise, or refine the question;
2. describes criteria used to make information decisions and choices.

4.5.2 Standard II

The information literate student accesses needed information effectively and efficiently.

Performance Indicators

A) The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.

Outcomes Include

1. identifies appropriate investigative methods (e.g. laboratory experiment, simulation, fieldwork);
2. investigates benefits and applicability of various investigative methods;
3. investigates the scope, content, and organization of information retrieval systems;
4. selects efficient and effective approaches for accessing the information needed from the investigative method or information retrieval system.

B) The information literate student constructs and implements effectively designed search strategies.

Outcomes Include

1. develops a research plan appropriate to the investigative method;
2. identifies keywords, synonyms and related terms for the information needed;
3. selects controlled vocabulary specific to the discipline or information retrieval source;
4. constructs a search strategy using appropriate commands for the information retrieval system selected (e.g. Boolean operators, truncation, and proximity for search engines; internal organizers such as indexes for books);
5. implements the search strategy in various information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters;
6. implements the search using investigative protocols appropriate to the discipline.

C) The information literate student retrieves information online or in person T using a variety of methods.

Outcomes Include

1. uses various search systems to retrieve information in a' variety of formats;
2. uses various classification schemes and other systems (e.g. call number systems or indexes) to locate information resources within the library or to identify specific sites for physical exploration;
3. uses specialized online or in person services available at the institution to retrieve information needed (e.g. interlibrary loan/document delivery, professional associations, institutional research offices, community resources, experts and practitioners);
4. uses surveys, letters, interviews, and other forms of inquiry to retrieve primary information.

D) The information literate student refines the search strategy if necessary.

Outcomes Include

1. assesses the quantity, quality, and relevance of the search results to determine whether alternative information retrieval systems or investigative methods should be utilized;
2. identifies gaps in the information retrieved and determines if the search strategy should be revised;
3. Repeats the search using the revised strategy as necessary.

E) The information literate student extracts, records, and manages the information and its sources.

Outcomes Include

1. selects among various technologies the most appropriate one for the task of extracting the needed information (e.g., copy/paste software functions, photocopier, scanner, audio/visual equipment or exploratory instruments);
2. creates a system for organizing the information;
3. differentiates between the types of sources cited and understands the elements and correct syntax of a citation for a wide range of resource;
4. records all pertinent citation information for future reference;
5. uses various technologies to manage the information selected and organized.

4.5.3 Standard III

The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base arid value system.

Performance Indicators

A) The information literate student summarizes the main ideas to be extracted from the information gathered.

Outcomes Include:

1. reads the text and selects main ideas;
2. restates textual concepts in his/her own words and selects data accurately;
3. identifies verbatim material that can be then appropriately quote.

B) The information literate student articulates and applies initial criteria for evaluating both the information and its sources.

Outcomes Include

1. examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias;
2. analyzes the structure and logic of supporting arguments or methods;
3. recognizes prejudice, deception, or manipulation;
4. recognizes the cultural, physical, or other context within which the information was created and understands the impact of context on interpreting the information.

C) The information literate student synthesizes main ideas to construct new concepts.

Outcomes Include

1. recognizes interrelationships among concepts and combines them into potentially useful primary statements with supporting evidence;
2. extends initial synthesis, when possible, at a higher level of abstraction to construct new hypotheses that may require additional information;
3. utilizes computer and other technologies (e,g. spreadsheets, databases, multimedia, and audio or visual equipment) for studying the interaction of ideas and other phenomena;

D) The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique ... characteristics of the information.

Outcomes Include

1. determines whether information satisfies the research or other information need;
2. uses consciously selected criteria to determine whether the information contradicts or verifies information used from other sources;
3. draws conclusions based upon information gathered;
4. tests theories with discipline-appropriate techniques (e.g. simulators, experiments);
5. determines probable accuracy by questioning the source of the data the limitations of the information gathering tools or strategies, and the reasonableness of the conclusions;
6. integrates new information with previous information or knowledge;
7. selects information that provides evidence for the topic.

E) The information literate student determines whether the new knowledge has an impact on the individual's value system and takes steps to reconcile differences.

Outcomes Include

1. investigates differing viewpoints encountered in the literature;
2. determines whether to incorporate or reject viewpoints encountered.

F) The information literate student validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners.

Outcomes Include

1. participates in classroom and other discussions;
2. participates in class-sponsored electronic communication forums designed to encourage discourse on the topic (e.g., email, bulletin boards, chat rooms).

G) The information literate student determines whether the initial query should be revised.

Outcomes Include

1. determines if original information need has been satisfied or if additional information is needed;
2. reviews search strategy and incorporates additional concepts as necessary;
3. reviews information retrieval sources used and expands to include others as needed.

4.5.4 Standard IV

The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

Performance Indicators

A) The information literate student applies new and prior information to the planning and creation of a particular product or performance.

Outcomes Include

1. organizes the content in a manner that supports the purposes and format *of* the product or performance (e.g. outlines, drafts, storyboards);
2. articulates knowledge and skills transferred from prior experiences to planning and creating the product or performance;
3. integrates the new and prior information, including quotations and Paraphrasing, in a manner that supports the purposes of the product or performance;
4. manipulates digital text, images, and data, as needed, transferring them from their original locations and formats to a new context.

B) The information literate student revises the development process for the product or performance.

Outcomes Include

1. maintains a journal or log of activities related to the information seeking, evaluating, and communicating process;
2. reflects on past successes, failures, and alternative strategies.

C) The information literate student communicates the product or performance effectively to others.

Outcomes Include

1. chooses a communication medium and format that best supports the purposes of the product or performance and the intended audience;
2. uses a range of information technology applications in creating the product or performance;
3. iIncorporates principles of design and communication;
4. communicates clearly and with a style that supports the purposes of the intended audience.

4.5.5 Standard V

The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

Performance Indicators

A) The information literate student understands many of the ethical, legal and socio economic issues surrounding information and information technology.

Outcomes Include

1. identifies and discusses issues related *to* privacy and security in both the print and electronic environments;
2. identifies and discusses issues related to free vs. fee-based access *to* information;
3. identifies and discusses issues related to censorship and freedom of speech;
4. demonstrates an understanding of intellectual property, copyright and fair use of copyrighted materials.

B) The information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources.

Outcomes Include

1. participates in electronic discussions following accepted practices (e.g. “Netiquette");
2. uses approved passwords and other *forms* of ID for access to information resources;
3. complies with institutional policies on access to information resources;
4. preserves the integrity of information resources, equipment, systems and facilities;

5. legally obtains, stores, and disseminates text, data, images, or sounds;
6. demonstrates an understanding of what constitutes plagiarism and does not represent work attributable to others as his/her own;
7. demonstrates an understanding of institutional policies related to human subjects research.

C) The information literate student acknowledges the use of information sources in communicating the product or performance.

Outcomes Include

1. selects an appropriate documentation style and uses it consistently to cite sources;
2. posts permission granted notices, as needed, for copyrighted material.

4.6 Information Literacy Learning Outcomes

Teaching by learning outcomes focus on what students will learn, understand, what they are able to do, what skills they developed as well as the attitudes that affect how they work in future. It ensures that active learning is part of the training program and that focus will shift from the trainer's knowledge to the student's understanding and capabilities (Anunobi & Nwabueze, 2010).

According to Ratteray (2002) information literacy is a meta-outcome in higher education and is invoked during all other learning outcomes. It is aligned to institutional goals and desired educational outcomes. It is therefore necessary that information literacy instructors must collaborate with faculty members to establish shared learning outcomes.

4.7 Information Literacy in Bangladesh

In Bangladesh the term 'Information Literacy' is not much popular. Peoples are confused about this term. Recently Information Science Today conducted a survey on the understanding of IL meaning among students, teachers, businessman and some other professionals. But the result is a very frustrating. Around 86% respondent do not know the actual meaning of IL where 7% give a vague answer and only 13% know about IL and give a satisfactory answer. These are the real situation prevailing in Bangladesh (Pejova, 2002).

Different seminars, symposium, conferences should be organized by different educational institutions. A continuous program should be developed by government and non-government organization. IL initiates, sustains and extends lifelong learning through abilities that may use technologies but are ultimately independent of them (ANZIIL, 2004). IL program cannot be a successful one in Bangladesh without national and international cooperation and coordination. On the other hand without good IL program proper development of a country may be hampered. The best way to develop IL program in Bangladesh is to call developing country's organization that are willing to develop IL activities to come developed countries and get training on IL activities, with a view to give a guideline to launch IL program in Bangladesh.

4.8 Information Literacy in the Universities of Bangladesh

As a developing country, in Bangladesh there is still largely a lack of professional and management level awareness on developing strategies for IL education and there is a severe lack of IL guidelines and standards in academic institutions. The concept is almost absent in higher academic institutions and many library professionals do not know the meaning of IL (Hoq, 2006). Over the last few years information literacy or information competency has become internationally recognized as a crucial skill for students at higher education institutions. It promotes the vision of what all universities want, work for and hope for. In 2009, the Independent University, Bangladesh (IUB) for the first time arranged an International Workshop on IL under the patronage of IFLA. The objective of the workshop was introducing the concept of IL in Bangladesh and other SAARC countries, providing hands on training on IL, building the capacity of library professionals in the SAARC regions and making them competent to run IL program after the training. The target group was library professionals in Bangladesh and other SAARC countries, but the workshop was not limited to this region (IUB, 2009). From 2012 East West University and BRAC University started IL workshop and arrange training program arrange regularly. Department of Information Science and Library Management department, University of Dhaka included IL course in undergraduate syllabus since 2006. Besides this almost all universities in Bangladesh started IL program in first year orientation program and they regularly arranged semester wise or yearly.

4.9 Characteristics of Information Literate People

The American Library Association's report on 1989 characterizes information literate people as follows: "ultimately, information literate people are those who have learned how to learn. They know how to learn because they know information is organized, how to find information and how to use information in such a way that others can learn from them". In January 2000, the Association of College and Research Libraries Task Force on Information Literacy Competency Standards and the American Association for Higher Education (AAHE) approved the "Information Literacy Competency Standards for Higher Education". These standards were created to ensure the development of information smart, lifelong learners who can flourish in a rapidly changing, information rich environment (Oxnam, 2003).

The five standards used to characterize students competent in information literacy include:

1. The information literate student determines the nature and extent of the information needed.
2. The information literate student accesses needed information effectively and efficiently.
3. The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
4. The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.
5. The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally (ACRL, 2000).

The arrival of the Internet in the 1990s resolved those in higher education to the fact that information literacy is more than a library issue; it was a learning issue. The information landscape was changing and so was the role of the academic library within the institution. In an effort to curtail information mismanagement resulting from the instant delivery of information to computer desktops, academic librarians emerged from the stacks to become a visible fixture within the higher education curricula.

4.10 Conclusion

Information literacy in higher education is a not a trend that will fade away with time. Higher education institutions must ensure that information literacy training is part of the educational curriculum and that information literacy outcomes are part of the learning outcomes.

This chapter has provided information literacy education in university and higher education. In short, IL research development, IL competency standards for higher education standards has been elaborated, and the immediate chapter will be data analysis and discussion of the study.

CHAPTER FIVE: DATA ANALYSIS AND DISCUSSION

5.1 Introduction

Data analysis has largely been conducted on responses to the questionnaire that was distributed ten university students. This chapter presents and discusses the results of the questionnaire survey. The questionnaire was made up of both open-ended and close-ended questions.

5.2 Analysis of the Questionnaire Survey

The following were the findings from the questionnaire survey conducted, giving the percentages and number of responses for the various answers pertaining to each question. The analysis of results is showed within the framework of the study.

Table 5.1: Received and analyzed Questionnaire

Sl. No.	Name of the university	Received and analyzed	%
1	University of Dhaka (DU)	49	10.96%
2	Bangladesh University of Engineering and Technology (BUET)	46	10.29%
3	Jagannath University (JNU)	48	10.74%
4	Jahangirnagar University (JU)	44	9.84%
5	Begum Rokeya University (BRU)	43	9.62%
6	Rajshahi University (RU)	41	9.17%
7	University of Barisal (BU)	42	9.40%
8	Bangabandhu Sheikh Mujib Medical University (BSMMU)	47	10.29%
9	Noakhali Science and Technology University (NSTU)	46	10.29%
10	Bangladesh University of Professionals (BUP)	41	9.17%
	Total	**N=447**	**100%**

The table 5.1 demonstrates that out of 447 students, 10.96% (N=49) were from University of Dhaka, 10.29% (N=46) were from Bangladesh University of Engineering and Technology,

10.74% (N=48) were from Jagannath University, 9.84% (N=44) were from Jahangirnagar University, 9.62% (N=43) were from Begum Rokeya University, 9.17% (N=41) were from Rajshahi University, 9.40% (N=42) were from University of Barisal, 10.29% (N=47) were from Bangabandhu Sheikh Mujib Medical University, 10.29% (N=46) were from Noakhali Science and Technology University, and 9.17% (N=41) were from Bangladesh University of Professionals.

5.3 Gender

The distribution of gender is noted table 5.2 and illustrated in figure 5.1.

Table 5.2: Distribution of the respondents

Gender	Frequency	%
Male	275	61.52
Female	172	38.48
Total	**447**	**100.00**

The table 5.2 shows that among 447 students, 61.52% (N=275) were male and 38.48 (N=172) were female. This suggests a balance between male and female respondents. Figure 5.1 below illustrate gender of the respondents.

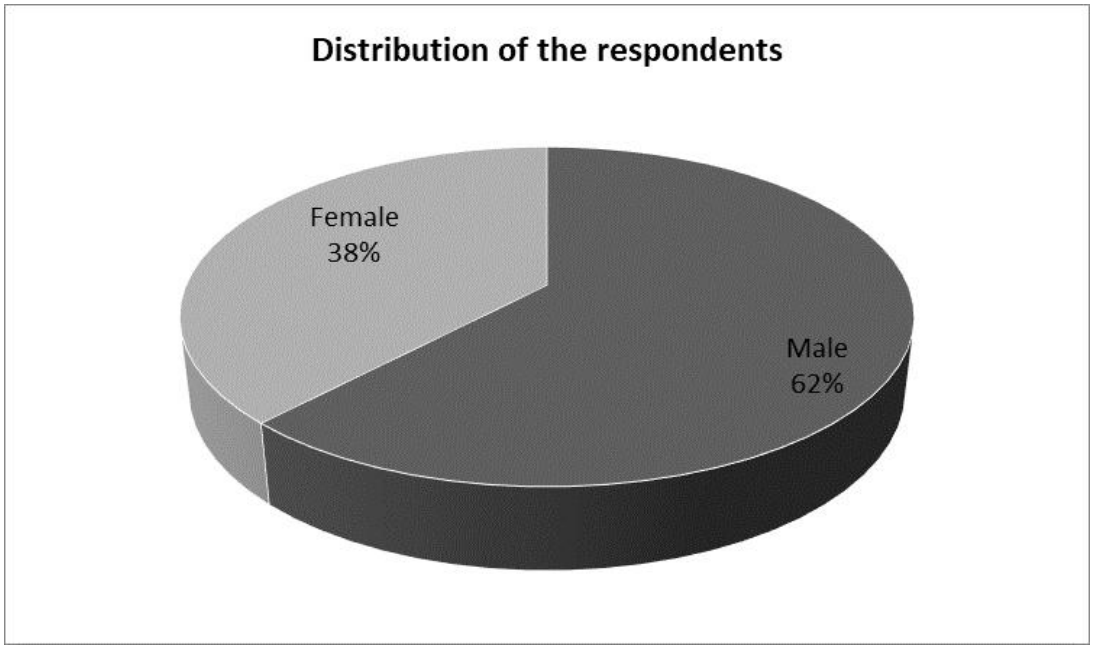

Figure 5.1: Distribution of the respondents

5.4 Academic Status

Present academic status of the respondents are explained in table 5.3 as well as in figure 5.2.

Table 5.3: Academic Status of the respondents

Year	Frequency	%
1st year	41	9.17
2nd year	93	20.81
3rd year	154	34.45
4th year	76	17.00
Masters	70	15.66
FCPS/MPhil/PhD	13	2.91
Total	**447**	**100.00**

The table 5.3 shows that among 447 students, 9.17% (N=41) were 1st year students, 20.81% (N=93) were 2nd year students, 34.45% (N=154) were 3rd year students, 17.00% (N=76) were 4th year students, 15.66% (N=70) were masters students, and 2.91% (N=13) were FCPS, MPhil and PhD students. Figure 5.2 below illustrate academic year of the respondents.

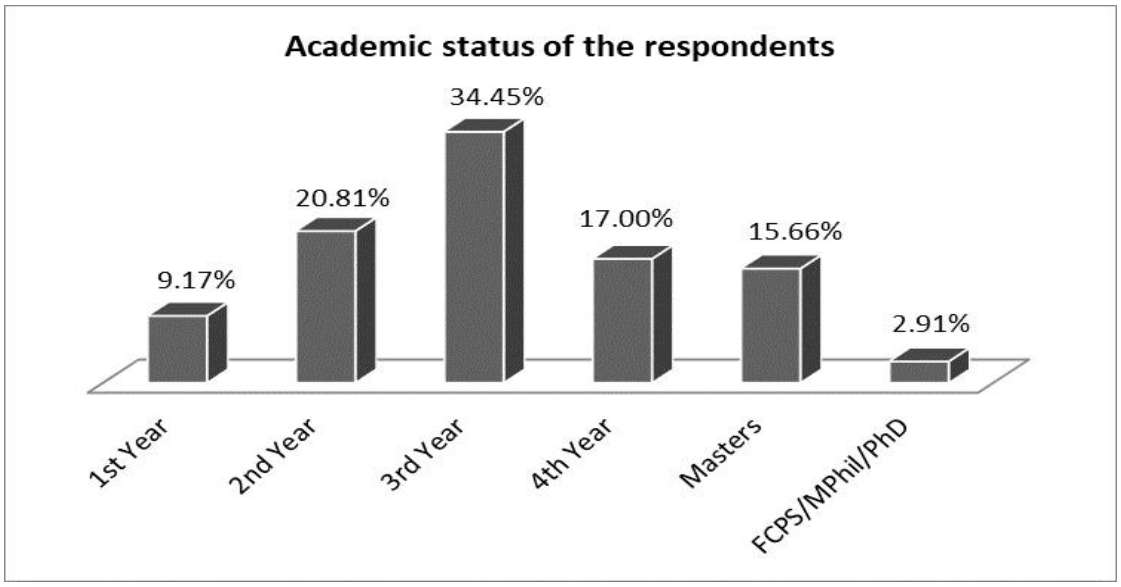

Figure 5.2: Academic status of the respondents

5.5 Age of the respondents

Age table and graph of the respondents are explained in table 5.4 as well as in figure 5.3.

Table 5.4: Age of the respondents

Age group	Frequency	Percent
15-20 years	82	18.34
21-25 years	328	73.38
26-30 years	35	7.83
30+ years	2	0.54
Total	**447**	**100.00**

Table 5.4 shows that 18.34% (N=82) students were age group between 15-20 years. The biggest students 73.38% (N=328) included of the age group 21-25 years. 7.83% (N=35) students were age group between 26-30 years and the nominal of students 0.54% (N=2) was age group between 30+ years. Figure 5.3 below show age group of the students.

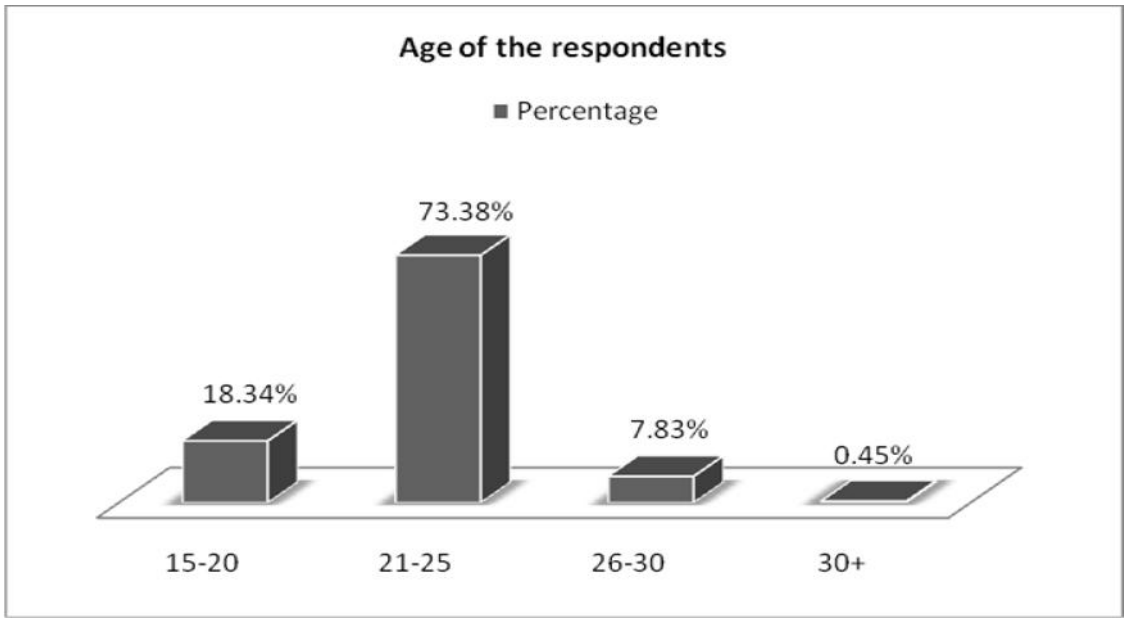

Figure 5.3: Age of the respondents

5.6 Conceptual issues regarding IL

The respondents expressed their views regarding IL from different points of view. However, the concepts about IL are noted in table 5.5. The basic question to the respondents was "do they have any concept about information literacy?" Most of the respondents were not familiar about information literacy term.

Table 5.5: Respondent's concept about 'Information Literacy'

	Frequency	%
Don't know the actual meaning of IL	139	31.10
Have heard, read but don't understand	108	24.16
Have vague concept	91	20.36
Have clear concept	109	24.38
Total	**447**	**100.00**

Table 5.5 shows that 44.74% (N=200) students have some idea about IL. Only 24.38% (N=109) students have clear concept about IL and 20.36% (N=91) students have vague concept about IL. More than 50% of the students have no idea or concept about IL. 24.16% (N=108) students have heard or read the term IL but they don't understand about IL and a big part of the respondent 31.10% (N=139) don't know the actual meaning about IL.

5.7 Respondent's knowledge about IL

The respondents expressed their knowledge about IL. The student's knowledge about IL are noted in table 5.6. The question to the respondents was "what do you know about information literacy?" On the question of identifying about information literacy, the options were selected among various attributes found in information literacy standards and models proposed by different authors and organizations, in addition to those stated in the conceptual framework used. It was found that most of the participants have not clear concept about IL.

Table 5.6: Respondent's knowledge about 'Information Literacy'

	Frequency	%
Information literacy is the ability to find and use information and the keystone of lifelong learning.	50	11.19
Information literacy is the understanding and set of skills necessary to carry out the functions of effective information access, evaluation, and application is an essential component of any general education program.	133	29.75
Information literacy is the ability to recognize the extent and nature of information need, then to locate, evaluate, and effectively use the needed information.	57	12.75
All answers are correct.	146	32.66
Don't know.	61	13.65
Total	**447**	**100.00**

Table 5.6 shows that 11.19% (N=50) students have understood the term "Information literacy is the ability to find and use information and the keystone of lifelong learning". 29.75% (N=133) students have understand the term "Information literacy is the understanding and set of skills necessary to carry out the functions of effective information access, evaluation, and application is an essential component of any general education program". 12.75% (N=57) students have understand the term "Information literacy is the ability to recognize the extent and nature of information need, then to locate, evaluate, and effectively use the needed information", answer a, b and c correct by 32.66% (N=146) students and 13.65% (N=61) do not know the definition of IL.

5.8 Conceptual Status about IL

The below tables 5.7 and 5.8 expressed the respondents' influence level about IL using cross table and Chi-square test.

Table 5.7: Association and cross tabulation of academic year and IL concept

	Year						
	1st Year	2nd Year	3rd Year	4th Year	Masters	FCPS/MPhil/PhD	N
Don't know the actual meaning of Information Literacy	12	33	50	21	21	2	139
Have heard, read but don't understand	11	22	42	14	15	4	108
Have vague concept	11	19	28	17	13	3	91
Have clear concept	7	19	34	24	21	4	109
Total	**41**	**93**	**154**	**76**	**70**	**13**	**447**

According to Chi-Square tests table 5.7 shows the number of students bearing different academic year with different information literacy concept. Data illustrate that a larger portion of university students don't have the clear concept about information literacy irrespective of academic year.

Table 5.8: Association and cross tabulation of academic year and IL concept status according to Chi-Square test

	Chi-Square Tests		
	Value	DF	Asymp. Sig. (2-Sided)
Pearson Chi-Square	10.377[a]	15	.795
Likelihood Ratio	10.523	15	.786
Linear-by-Linear Association	3.556	1	.059
Number of Valid Cases			**447**

Table 5.8 show that, since p-value (0.795) is not less than 0.05, it can conclude that academic year does not influence information literacy.

5.9 Respondents Opninion about Information Literate Person

The respondents expressed their views regarding Information Literate person from different points of view in table 5.9. The question to the respondents was “what is your opinion about an information literate person?” On the question of identifying how best to explain an information literate person, the opinions were selected among various attributes found in information literacy standards and models proposed by different authors and organizations, in addition to those stated in the conceptual framework used. It was found that most of the participants have not clear concept about information literate person.

Table 5.9: Opinion about ‘Information Literate Person’

	Frequency	%
An information literate person is able to identify, retrieve and information in the most advanced and appropriate way.	291	65.10
S/he knows about and can use all major information retrieval technologies.	19	4.30
S/he can effectively use information for solving various problems.	64	14.30
All answers are correct.	51	11.40
Don’t know.	22	4.90
Total	**447**	**100.00**

Table 5.9 shows that most of the students 65.10% (N=291) expressed "an information literate person is able to identify, retrieve and information in the most advanced and appropriate way". 4.30% (N=19) students express "an information literate persons knows about and can use all major information retrieval technologies". 14.30% (N=64) students express "an information literate persons can effectively use information for solving various problems". Answer all are correct by 11.40% (N=51) students and 4.90% (N=22) students don't know about information literate persons.

5.10 Facilities to run IL program

The below table 5.10 as well as in figure 5.4 expressed the students’ views about the facilities to run IL program in their departments. The question to the respondents was “do you think your department has all the facilities to run information literacy program?” On the question identifying about the existing scenario about the IL program in the department. It was found that few facilities are available for IL program in some departments.

Table 5.10: Facilities to run IL program in the departments

	Frequency	%
Have all the facilities.	55	12.30
Some of the facilities are available.	149	33.30
Needs more facilities.	104	23.30
Has severe shortage of all the facilities.	52	11.60
Don't know.	87	19.50
Total	**447**	**100.00**

Table 5.10 shows that only 12.30% (N=55) students expressed that they have all facilities about IL program in their department and 19.50% (N=87) students totally does not know about the IL program. 33.30% (N=149) students expressed that some of the facilities are available in their department. 23.30% (N=104) students expressed that need more facilities and 11.60% (N=52) students expressed that they have severe shortage of all facilities about IL program in their department. Figure 5.4 below show the facilities to run information literacy program in their departments.

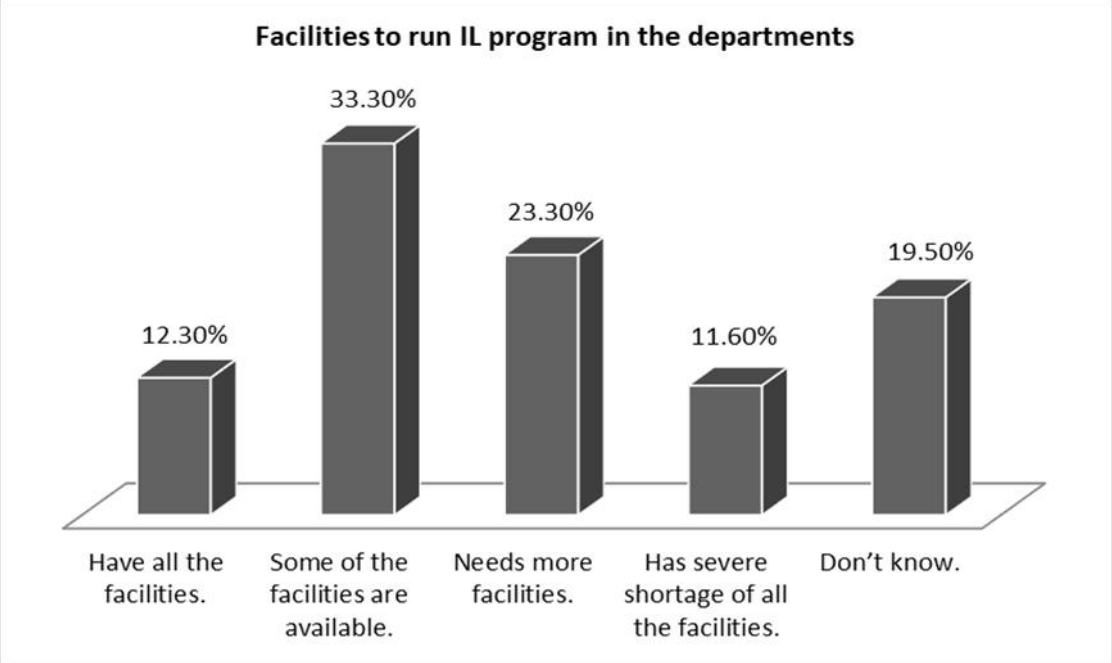

Figure 5.4: Facilities to run IL program in the departments

5.11 Training Program by the Department

The below table 5.11 as well as in figure 5.5 expressed participation IL training program arranged by the department. The question to the respondents was "did you take part any

Information Literacy training program arranged by your department?" The purpose of the question was to find out how many students participant IL program in their departments. It was found most of the students did not attend any kind of IL training program.

Table 5.11: Participation IL training program arranged by the department

	Frequency	%
Yes	87	19.50
No	360	80.50
Total	**447**	**100.00**

Table 5.11 shows that only 19.50% (N=87) students attended IL program and most of the students 80.50% (N=360) does not attend IL program in their department. That means most of the department does not arrange any kinds of IL program. Figure 5.5 below show the take part any Information Literacy training program arranged by the department.

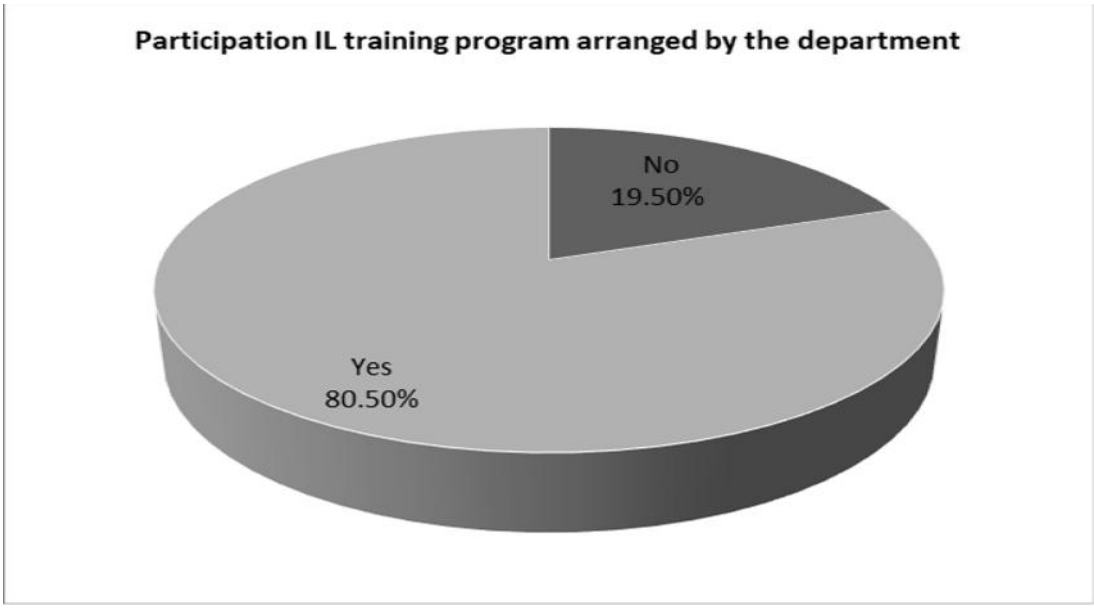

Figure 5.5: Participation IL training program arranged by the department

5.12 Necessity of including IL education and training

The respondents expressed their views regarding the necessity of including IL education and training courses in graduate programs. However, the necessity of including IL education and training courses in graduate programs are noted in table 5.12 as well as in figure 5.6. The question to the respondents was "do you think Information Literacy education and training courses should be included in graduate programs?" The purpose of the question was to see

including IL program, IL education and training courses in their departments. It was found that almost all students are interest to include that in graduate program.

Table 5.12: Necessity of including IL education and training courses in graduate programs

	Frequency	%
Yes	362	81.00
No	3	0.70
Don't Know	82	18.30
Total	**447**	**100.00**

Table 5.12 shows that most of the students 81.00% (N=362) have the same opinion that IL education and training courses should be included in graduate program and only 0.70% (N=3) students are not interest to include. 18.30% (N=82) students does not know IL education and training courses should be included in graduate programs or not. Figure 5.6 below show the Necessity of including IL education and training courses in graduate programs.

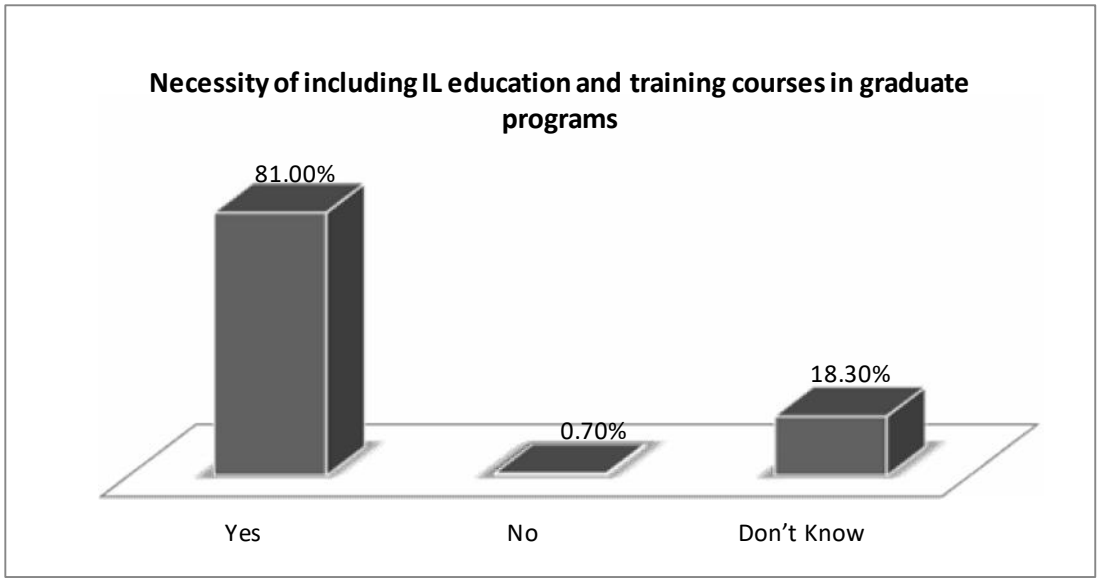

Figure 5.6: Necessity of including IL education and training courses in graduate programs

5.13 Concept related with IL

The respondents expressed which of the following concepts are related with IL in table 5.13 as well as in figure 5.7. In this regards the question to the respondents was "which of the following concepts are related with Information Literacy?" This question aims to discover

which kind of concept related with IL actually they know. It was found that most of the respondents have not clear concept about IL.

Table 5.13: Concept related with Information Literacy

	Frequency	%
User education	7	1.60
Bibliographic instruction	49	11.00
Information retrieval techniques	48	10.70
Library orientation program	12	2.70
Online searching techniques	74	16.60
OPAC searching techniques	3	0.70
All of the above	186	41.50
Don't Know	68	15.20
Total	**447**	**100.00**

Table 5.13 shows that, on the question of concept are related with IL which had various choices, User education by 1.60% (N=7) of the respondents, Bibliographic instruction by 11.00% (N=49) of the respondents, Information retrieval techniques by 10.70% (N=48), Library orientation program by 2.70% (N=12), Online searching techniques by 16.60% (N=74), OPAC searching techniques by 0.70% (N=3), also answer all are correct by 41.50% (N=186) and a big part of the respondents 15.20% (N=68)have not any concepts that are related with IL. Figure 5.7 below show which of the following concepts are related with Information Literacy.

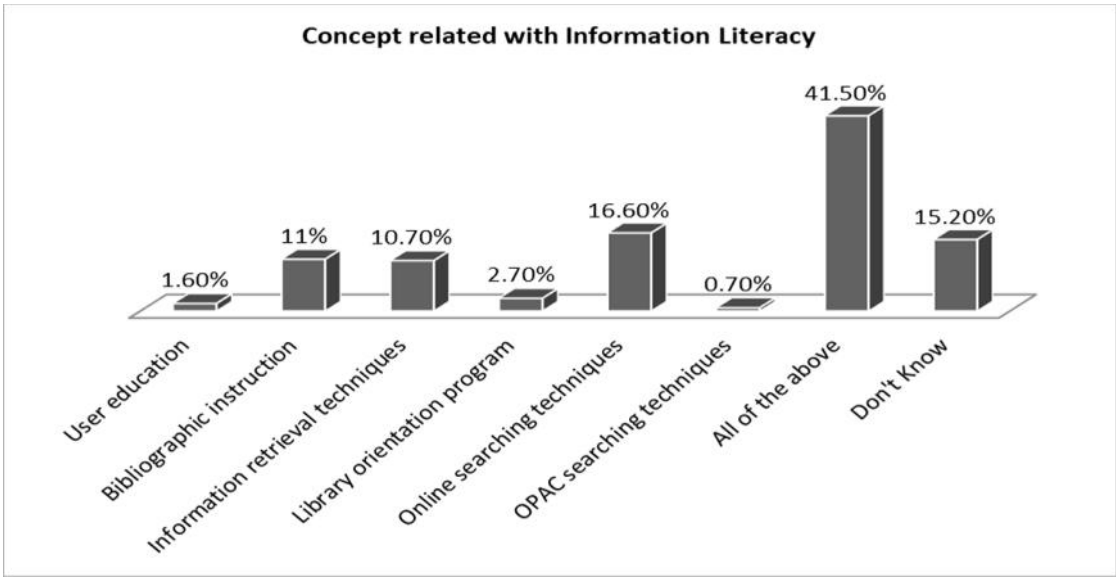

Figure 5.7: Concept related with Information Literacy

5.14 Arrange IL Program

The respondents expressed about an arrangement of IL program in the university library that shows in table 5.14 as well as in figure 5.8. In this regards the question to the respondents was “does your university Library arranges Information Literacy Program regularly?” This question aims to see how much library arrange IL program in their library. It was found that, most of the library does not arrange IL program regularly.

Table 5.14: Regularly arrange IL Program

	Frequency	%
Yes	151	33.80
No	296	66.20
Total	**447**	**100.00**

Table 5.14 shows that, a big part of the respondents 66.520% (N=296) replay that their library were not arrange IL program regularly and only 33.80% (N=151) of the respondents replay that their library were arrange IL program regularly. Figure 5.8 below show does your university Library arrange Information Literacy Program regularly.

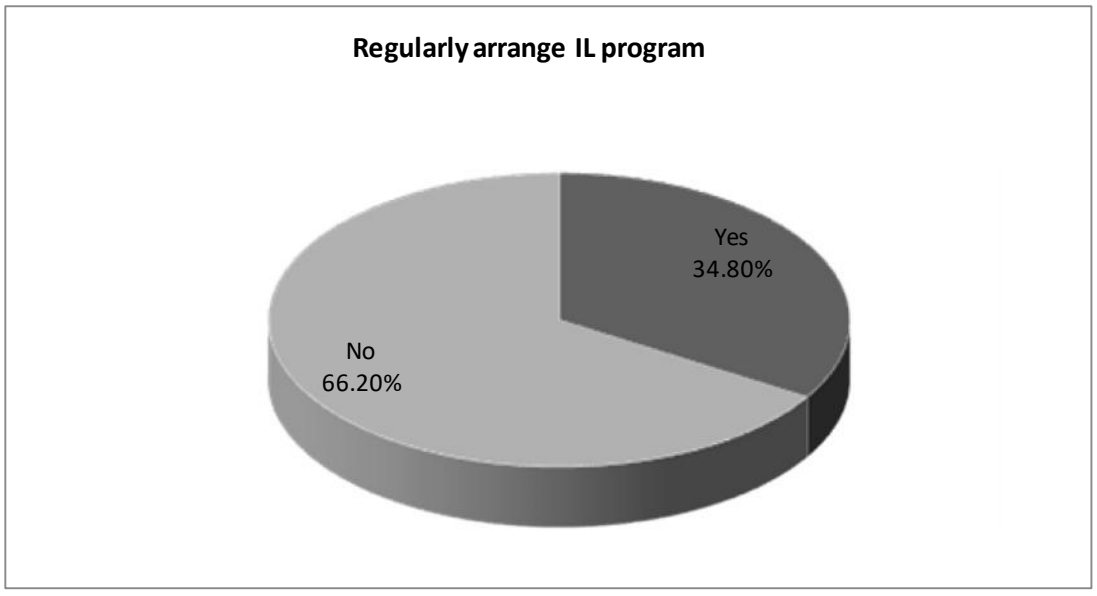

Figure 5.8: Regularly arrange IL Program

5.15 IL Arrangement Status

Table 5.15 and 5.16 shows cross tabulation between university library and literacy program arrangement status also shows the institutional influencing level about IL program.

Table 5.15: Association and cross tabulation of university and university Library arrange Information Literacy program

Institute	Arrange IL Program Regularly		N
	Yes	No	
DU	18	31	49
BUET	12	34	46
JNU	24	24	48
JU	12	32	44
BRU	17	26	43
RU	15	26	41
BU	9	33	42
BSMMU	13	34	47
NSTU	16	30	46
BUP	15	26	41
Total	**151**	**296**	**447**

Table 5.15 shows cross tabulation between university library and literacy program arrangement status. At the same time, some students said “yes” that their institute arrange information literacy program, some said “no” that their institute does not arrange those type of program. From this it is clear that this program is not a mandatory program for students and publicity of this program is not enough to encourage student to participate in those programs.

Table 5.16: Association and cross tabulation of university and university Library arrange IL Program status according to Chi-Square Tests

	Chi-Square Tests		
	Value	DF	Asymp. Sig. (2-Sided)
Pearson Chi-Square	12.484[a]	9	.187
Likelihood Ratio	12.496	9	.187
Linear-by-Linear Association	.391	1	.532
Number of Valid Cases			**447**

Table 5.16 shows since p-value (0.532) is not less than 0.05, it can conclude that institution does not influence information literacy program.

5.16 IL Arrangement Status

The respondents expressed how frequenltly arrange IL program in the university library that shows in table 5.17 as well as in figure 5.9. For this reason the question to the respondents was “how often the Library arrange IL program?” This question aims to discover after how many days which library organized IL program. It was found that most of the library does not arrange IL program regularly.

Table 5.17: Frequency of IL training program

	Frequency	%
Monthly	3	0.70%
Quarterly	41	9.20%
Half Yearly	30	6.70%
Yearly	43	9.60%
At every semester	11	2.50%
Sometimes	57	12.80%
Don’t Arrange	262	58.60%
Total	**447**	**100.00**

Table 5.17 shows that, the percentage of respondents only 0.70% (N=3) participants stated their university library arrange IL program monthly, 9.20% (N=41) quarterly, 6.70% (N=30) half yearly, 9.60% (N=43) yearly, 2.50% (N=41) at every semester, 12.80% (N=57) sometimes and a big part of participants stated that their university library don’t arrange any kind of IL program. Figure 5.9 below show how often the Library arranges IL program.

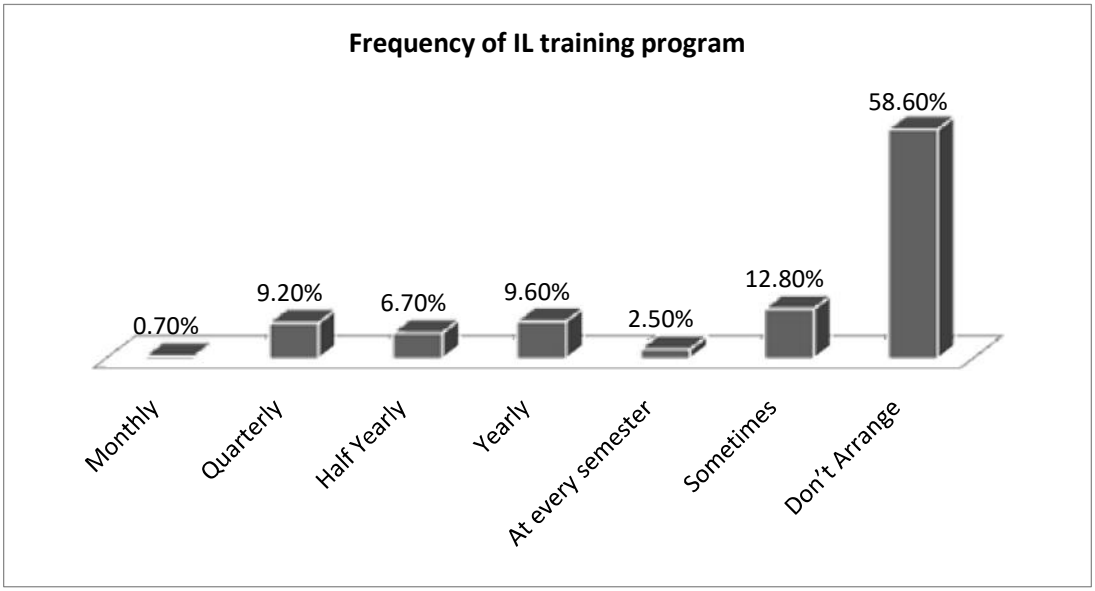

Figure 5.9: Frequency of IL training program

5.17 Participation Status

The respondents expressed their participation of various types of IL program in table 5.18 as well as in figure 5.10. In this regards the question to the respondents was “have you ever attended any of the following IL program?” This question aims to verify how much students attended IL program in their library. It was found that most of the participants have not attended any kind of IL program.

Table 5.18: Participation of IL program

	Frequency	%
User Education program	63	14.10%
Bibliographic instruction program	25	5.60%
Online searching techniques	22	4.92%
OPAC training session	39	8.72%
Library Orientation	54	12.08%
Library Workshop	57	12.75%
Did not participate	187	41.83%
Total	**447**	**100.00**

Table 5.18 shows that, most of the respondents 41.83% (N=187) did not attend any kind of IL program, 14.10% (N=63) attend User education program, 5.60% (N=25) attend Bibliographic instruction program, 4.92% (N=22) attend Online searching techniques, 8.72% (N=39) attend OPAC training session, 12.08% (N=54) attend Library Orientation 12.75% (N=57) attend Library Workshop. Figure 5.11 below show have you ever attended any of the following IL program?

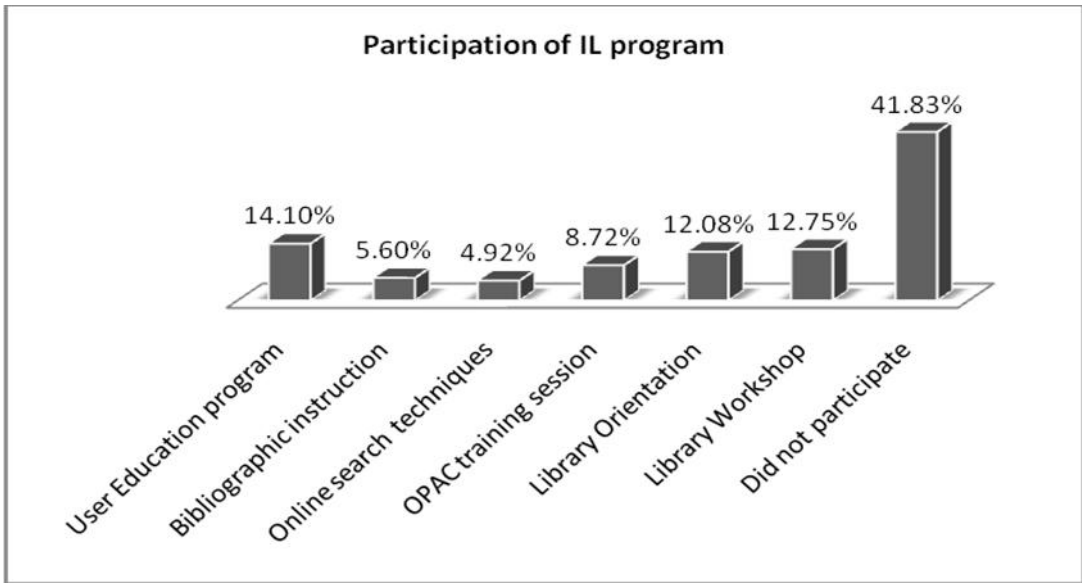

Figure 5.10: Participation of IL program

The question to the respondents was “for the most current information on a topic, you need to consult.” This question aims to verify the students’ information literacy and competency level, various questions were posed. It was found that most of the participants have not clear concept about current information sources.

Table 5.19: Most current information on a topic, need to consult

	Frequency	%
Books	54	12.10%
Periodical articles	20	4.50%
Encyclopedia articles	19	4.30%
Journals	97	21.70%
Bibliographies	6	1.30%
E-resources	118	26.40%
All of these	133	29.80%
Total	**447**	**100.00**

Table 5.19 shows that, the percentage of respondents 21.70% (N=97) who chose the option journals and 26.40% (N=118) who chose E-resources, 12.10% (N=54) who chose books, 4.50% (N=20) who chose periodical articles, 4.30% (N=19) who chose encyclopedia articles, 1.30% (N=6) who chose bibliography and 29.80% (N=133) who chose all of these. Figure 5.11 below show for the most current information on a topic, you need to consult.

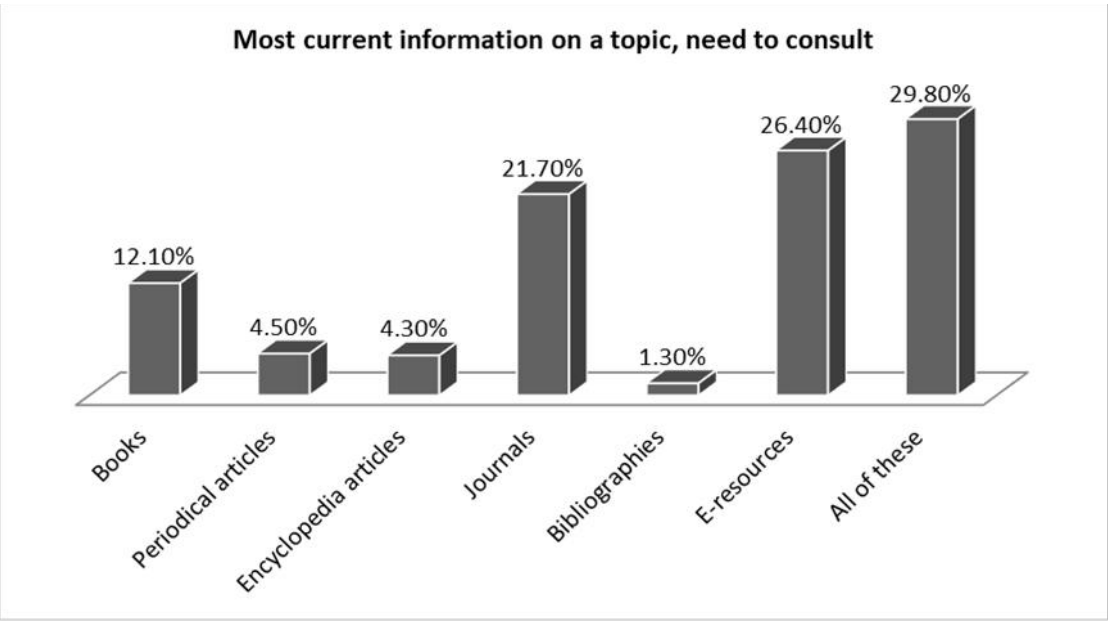

Figure 5.11: Most current information on a topic, need to consult

The question to the respondents was “which of the following tool(s) you prefer for finding research article?” This question aims to verify which kind of approach participants approve when they have to find research related articles. It was found that most of the participants have not clear concept about this issue.

Table 5.20: Following tool(s) prefer for finding research article

	Frequency	%
Library catalogue	19	4.30
Online databases	198	44.30
Journals	74	16.60
Web	151	33.80
Don’t know	5	1.10
Total	**447**	**100.00**

Table 5.20 shows that, the percentage of respondents 4.30% (N=19) who chose the option library catalogue, most of the respondents chose 44.30% (N=198) online database, 16.60% (N=74) chose journals, 33.80% (N=151) chose web and 1.10% (N=5) don’t know which tools prefer for finding research articles. Figure 5.12 below show which of the following tool(s) you prefer for finding research article?

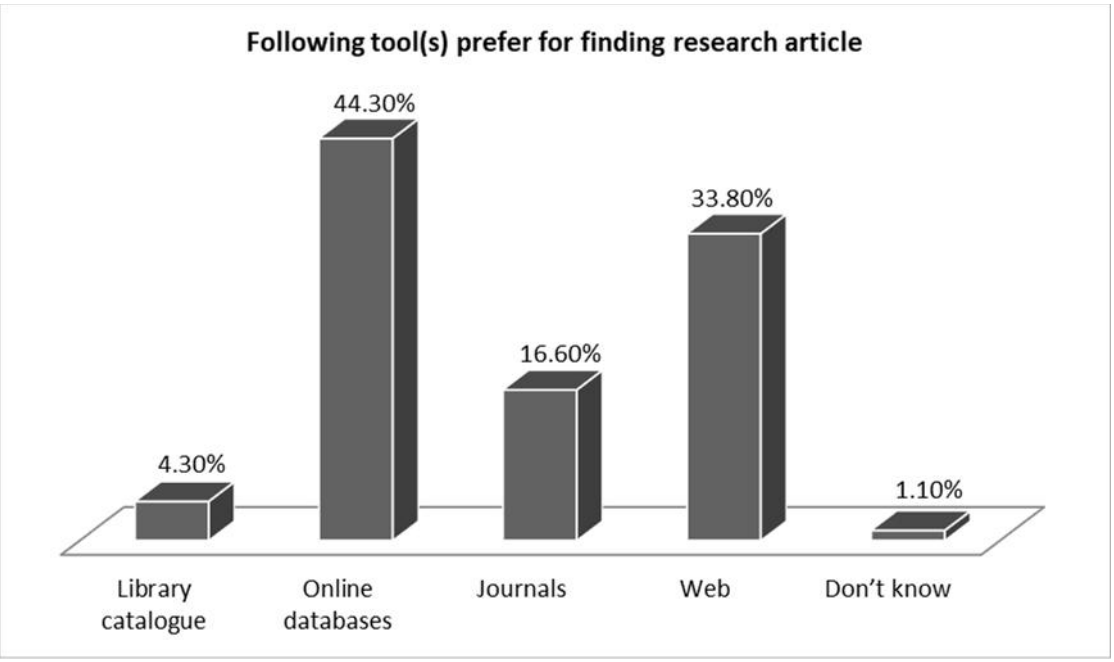

Figure 5.12: Following tool(s) prefer for finding research article

5.18 Library oriented information

The respondents expressed their opinion about library oriented information that are related with IL program in tables 5.21, 5.22, 5.23 and 5.24 as well as in figures 5.13, 5.14, 5.15 and 5.16. The question to the respondents was "how do you search books from the library collection?" This question aims to discover how participants search books from the library. It was found that most of the participants have not concept how to search books from the library collection.

Table 5.21: Techniques of search books from the library collection

	Frequency	%
Library catalogue	132	29.53
Bibliography	47	10.51
Search engine	113	25.27
Books in Print	22	4.92
Don't know	133	29.75
Total	**447**	**100.00**

Table 5.21 shows that, most of the respondents 29.53% (N=133) don't know how to search books from the library collection. The percentage of respondents 29.53% (N=132) who chose the option library catalogue, 10.51% (N=47) chose bibliography, 25.27% (N=113) chose search engine and 4.92% (N=22) chose books in print. Figure 5.13 below show how do you search books from the library collection?

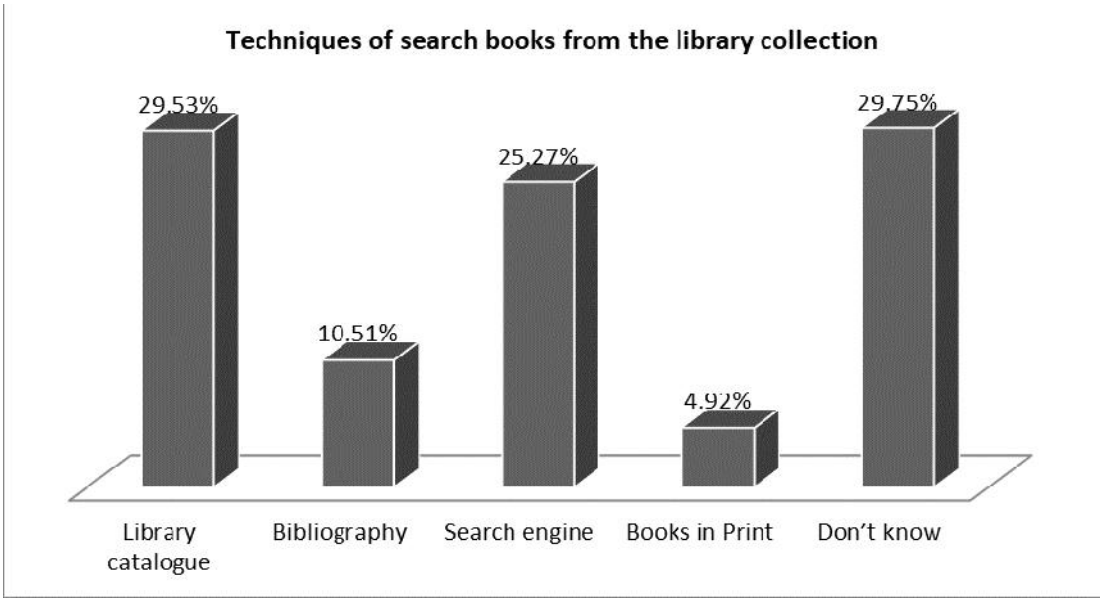

Figure 5.13: Techniques of search books from the library collection

The question to the respondents was “how would you locate a book on the shelf in the library?” This question aims to verify how participants find out library materials form the library physically. It was found that most of the participants have not clear concept how to find out book on the shelf in the library.

Table 5.22: Locate a book on the shelf in the library

	Frequency	%
Call Number	97	21.70
Author’s name	31	6.90
ISBN Number	49	11.00
Title of the book	124	27.70
Don’t know	146	32.70
Total	**447**	**100.00**

Table 5.22 shows that, a big part of the respondents 32.70% (N=146) don’t know how to locate book on the shelf in the library. The percentage of respondents 21.70% (N=97) who chose the option call number, author’s name option chose 6.90% (N=31), 11.00% (N=49) chose ISBN number and 27.70% (N=124) chose title of the book. Figure 5.14 below show how would you locate a book on the shelf in the library?

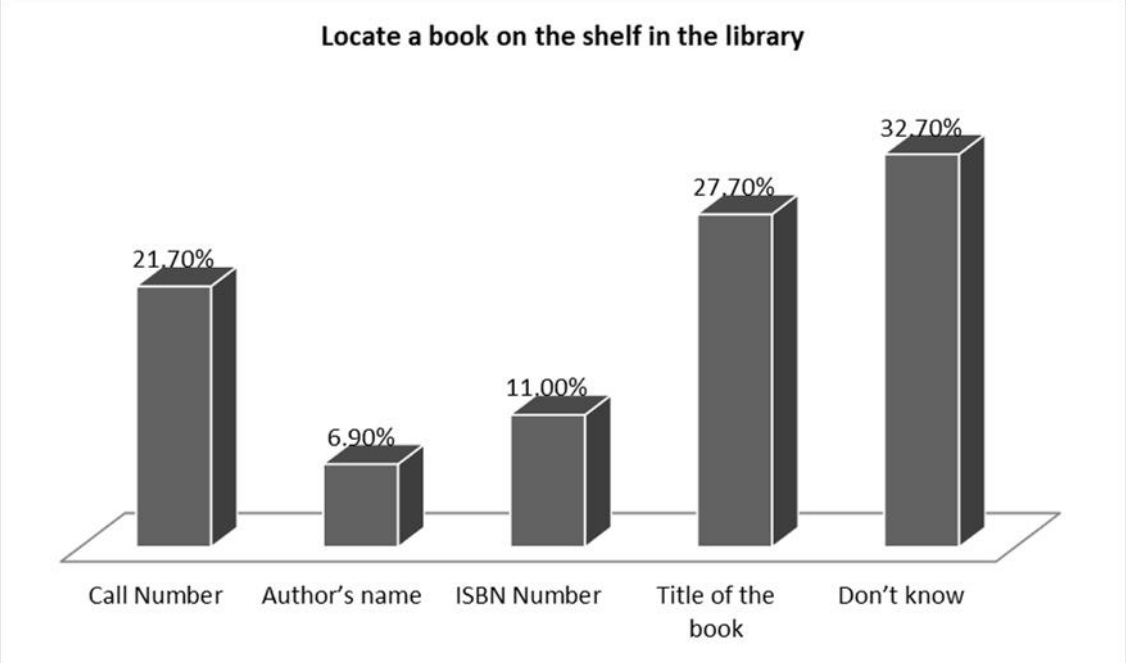

Figure 5.14: Locate a book on the shelf in the library

The question to the respondents was “how would you search any documents about a particular author from the library catalogue?” This question aims to find out what kind of approach participants adopt when they search document about a particular author from the library catalogue. It was found that most of the participants have not clear concept about this.

Table 5.23: Search techniques about a particular author from the library catalogue

	Frequency	**%**
By Title	136	30.40
Keywords	49	11.00
By Author	138	30.80
By Subject	7	1.50
By Publisher	3	0.70
Call Number	95	19.30
Year	9	2.00
Don’t know	19	4.30
Total	**447**	**100.00**

Table 5.23 shows that, most of the percentage of respondents 30.40% (N=136) who chose the option by title, 11.00% (N=49) who chose the option keyword, 30.80% (N=138) who chose the option by author, 1.50% (N=7) who chose the option by subject, only 0.70% (N=3) who chose the option by publisher, 19.30% (N=95) who chose the option call number and 4.30% (N=19) don’t know how to search any documents about a particular author from the library catalogue. Figure 5.15 below show how would you search any documents about a particular author from the library catalogue?

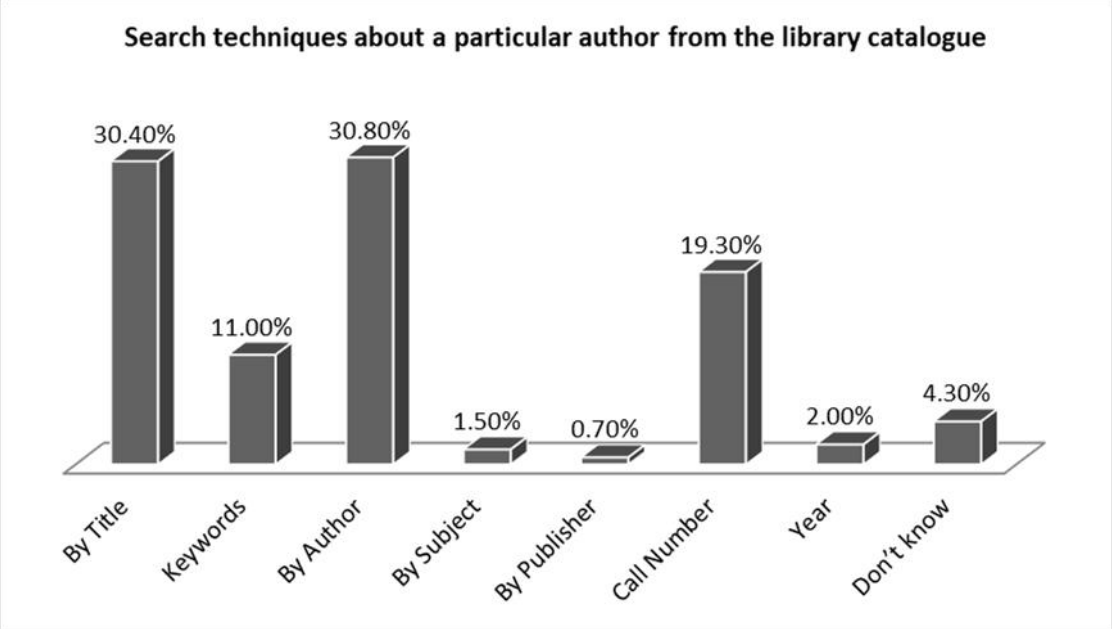

Figure 5.15: Search techniques about a particular author from the library catalogue

5.19 Usage Library Resources through Internet

The participants expressed their opinion about usage library resources through Internet in tables 5.24-5.29 as well as in figures 5.16-5.19. In this regards the question to the respondents was "how do you look for information online?" This question aims to verify what kind of strategy participants look for in online. It was found that most of the participants don't know and they take help others.

Table 5.24: Look for information in online

	Frequency	%
Using search engine	125	27.90
Browsing website	138	30.90
Take help who knows	184	41.20
Total	**447**	**100.00**

Table 5.24 shows that, most of the percentage of respondents 41.20% (N=184) take help to others for searching information, 27.90% (N=138) participants using search engine and 30.90% (N=138) participants browsing website for searching information. Figure 5.16 below show how do you look for information online?

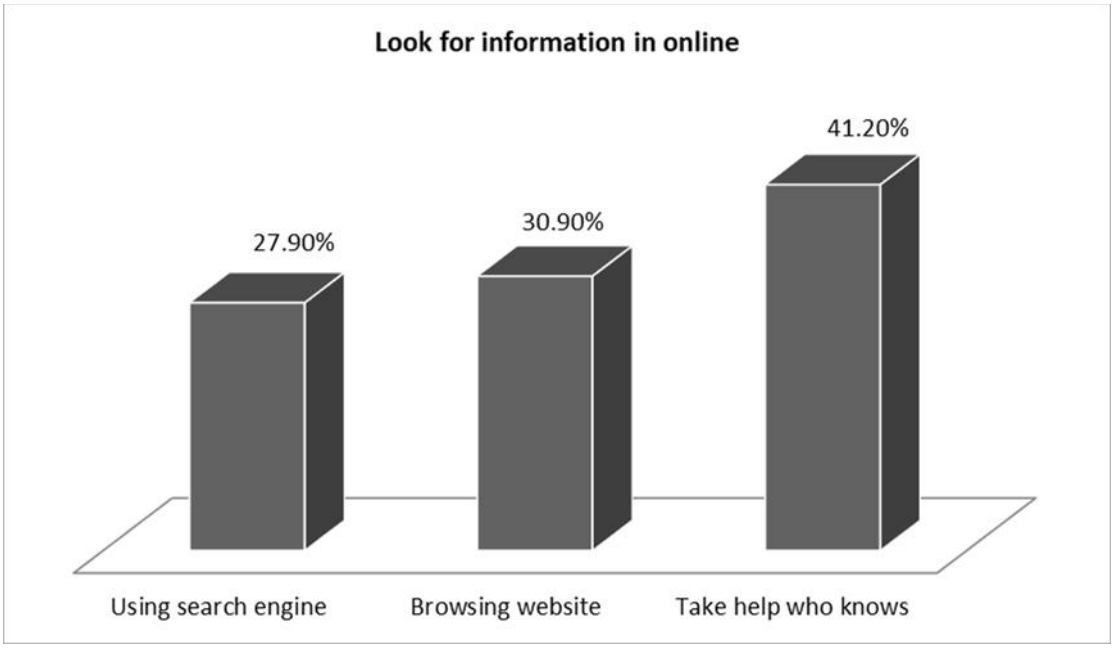

Figure 5.16: Look for information in online

The question to the respondents was "in order to find research article, which Google feature will you prefer?" This question assesses the participants' understanding about the Google feature to find research article. It was found that most of the participants have not clear concept about Google feature to find research article.

Table 5.25: To find research article, Google feature will prefer

	Frequency	%
Google	321	72.80
Google Books	4	0.90
Google Scholar	101	22.60
All of the above	15	3.40
Don't know	6	1.30
Total	**447**	**100.00**

Table 5.25 shows that, the best answer is Google scholar because Google scholar is the best feature for finding research articles. Only 22.60% (N=101) of the respondents chose this option, most of the participants 72.80% (N=321) chose Google, 0.90% (N=4) chose Google books, 3.40% (N=15) chose all options and 1.30% (N=6) don't know which feature prefer for finding research article. Figure 5.17 below show in order to find research article, which Google feature will you prefer?

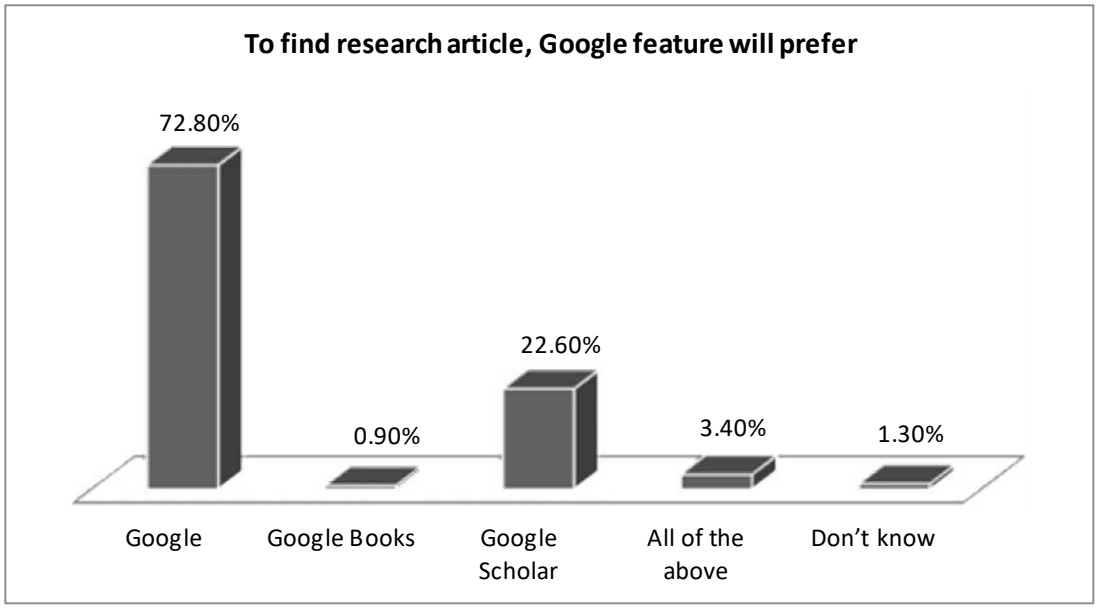

Figure 5.17: To find research article, Google feature will prefer

The question to the respondents was "are you able to independently identify and locate materials from the library using Open Access Public Catalogue?" The purpose of the question was to determine participants how much able to independently identify and locate materials from the library using Open Access Public Catalogue.

Table 5.26: Independently identify and locate materials from the library using OPAC

	Frequency	%
Yes	244	54.60
No	203	45.40
Total	**447**	**100.00**

Table 5.26 shows that, the percentage of respondents 54.60% (N=244) able to independently identify and locate materials and 45.40% (N=203) are not able to independently identify and locate materials from the library using Open Access Public Catalogue.

The question to the respondents was "are you able to independently identify and locate materials from the library using Indexes?" The purpose of the question was to determine participants how much able to independently identify and locate materials from the library using Indexes.

Table 5.27: Independently identify and locate materials from the library using Indexes

	Frequency	%
Yes	276	61.70
No	171	38.30
Total	**447**	**100.00**

Table 5.27 shows that, the percentage of respondents 61.70% (N=276) able to independently identify and locate materials and 38.30% (N=171) are not able to independently identify and locate materials from the library using Indexes.

The question to the respondents was “are you able to independently identify and locate materials from the library using Abstract Journals?” The purpose of the question was to determine participants how much able to independently identify and locate materials from the library using Abstract Journals. It was found that a big part of the participants don’t know how to identify and locate materials from the library using Open Access Public Catalogue, Indexes and Abstract Journals.

Table 5.28: Independently identify and locate materials from the library using Abstract Journals

	Frequency	%
Yes	153	34.20
No	294	65.80
Total	**447**	**100.00**

Table 5.28 shows that, only 34.20% (N=153) of the respondents able to independently identify and locate materials and 65.80% (N=294) are not able to independently identify and locate materials from the library using abstract journal. Figure 5.18 below show are you able to independently identify and locate materials from the library using OPAC, Indexes and Abstract Journals?

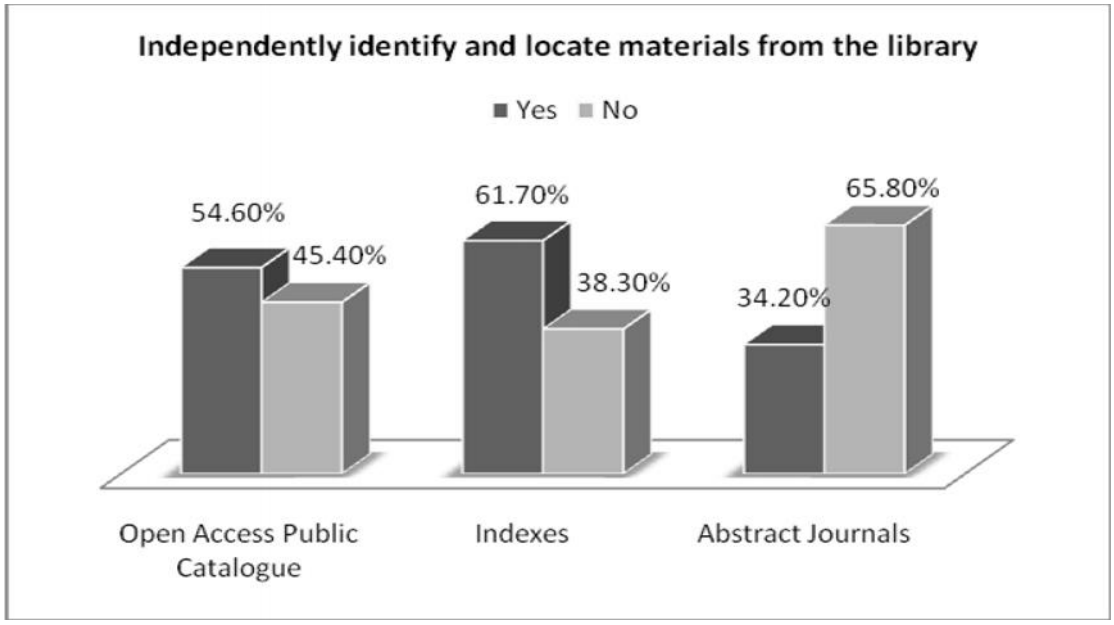

Figure 5.18: Independently identify and locate materials from the library

The question to the respondents was "in order to find more documents on your topic you can include synonyms in search statement." To connect those synonyms in your statement, you use:" This question aims to verify how much able to identify proper search techniques that was formulated with Boolean logic. It was found that most of the participants have not clear concept about Boolean logic.

Table 5.29: To find more documents on a topic include synonyms in search statement, usually use

	Frequency	%
AND	137	30.60
+	47	10.50
NOT	21	4.70
OR	58	13.00
Don't Know	184	41.20
Total	**447**	**100.00**

Table 5.29 shows that, the percentage of respondents only 13.00% (N=58) who chose the option OR which is the correct query of using operators. 30.60% (N=137) chose AND operator, 4.70% (2N=21) Chose NOT operator, 10.50% (N=47) chose wrong query and most of the participants 41.20% (N=184) don't know about search statement. Figure 5.19 below

show in order to find more documents on your topic you can include synonyms in search statement.

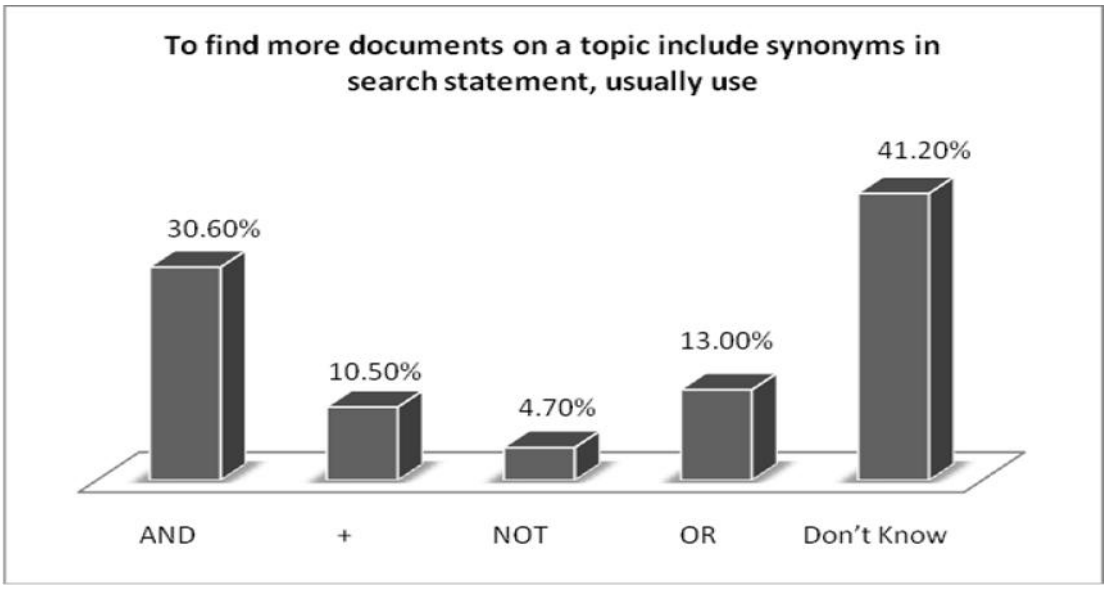

Figure 5.19: To find more documents on a topic include synonyms in search statement, usually use

5.20 Finding Document in Library

Students opinion about finding documents in the library are shown in table 5.30 as well as in figure 5.20. In this regards the question to the respondents was "you have found a book on your topic. Which sections of the book will you consult to find other documents on the topic?" The purpose of this question is to identify participants more interrelated document identify quality. It was found that most of the participants have not interrelated document identify quality.

Table 5.30: Consult to find documents on the topic

	Frequency	%
The glossary	63	14.10
The index	151	33.78
The bibliography	22	4.92
The table of contents	141	31.54
Don't know	70	15.66
Total	**447**	**100.00**

Table 5.30 shows that, the percentage of respondents only 4.92% (N=22) who chose the option the bibliography as a tool for finding other documents. 14.10% (N=63) chose the glossary, 33.78% (N=151) chose the index, most of the participants 31.54% (N=141) chose the table of contents and 15.66% (N=70) don't know. Figure 5.20 below show you have found a book on your topic. Which sections of the book will you consult to find other documents on the topic?

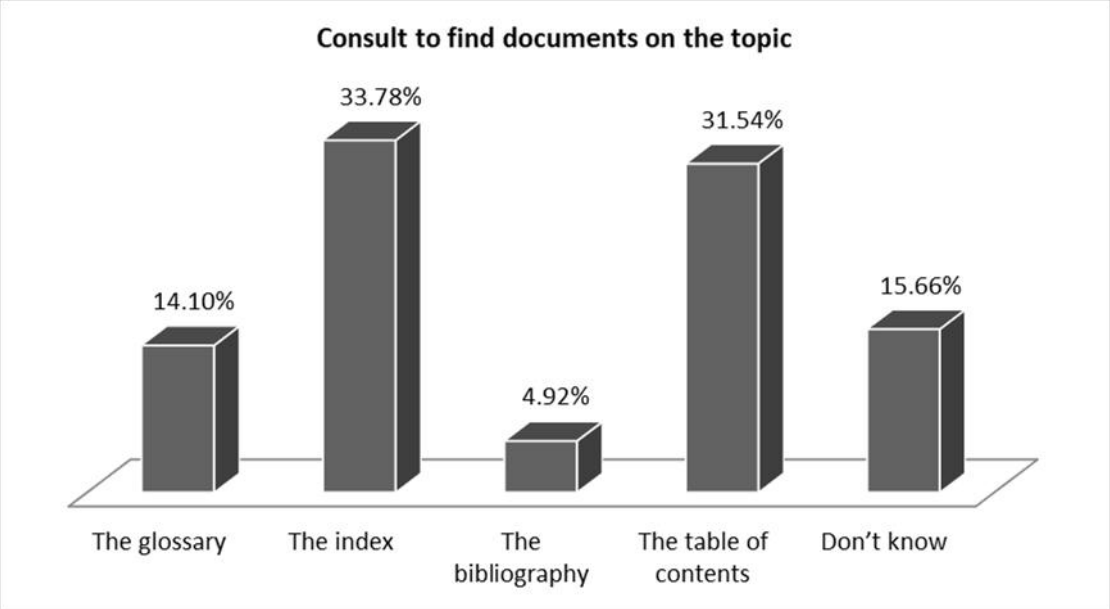

Figure 5.20: Consult to find documents on the topic

5.21 IL Teaching Method

This section covers about the effective methods for teaching IL. Students expressed their view in table 5.31 as well as in figure 5.21. For this purpose the question to the respondents was "which method(s) is the most effective for teaching information literacy?" This question aims to identify which methods are effective for teaching IL. It was found that most of the participants chose computer or web base teaching method.

Table 5.31: Most effective method(s) for teaching IL

	Frequency	%
Traditional Literacy Methods (i.e. Lectures, Demonstrations etc.)	40	8.90
Computer assisted Instruction (i.e. Web based tutorials)	307	68.70
Self-directed Independent Learning (i.e. workbooks)	100	22.40
Total	**447**	**100.00**

Table 5.31 shows that, most of the percentage of respondents 68.70% (N=307) who chose the option Computer assisted Instruction (i.e. Web based tutorials), 8.90% (N=40) chose Traditional Literacy Methods (i.e. Lectures, Demonstrations etc.) and 22.40% (N=100) chose Self-directed Independent Learning (i.e. workbooks) for teaching IL. Figure 5.21 below show which method(s) is the most effective for teaching information literacy?"

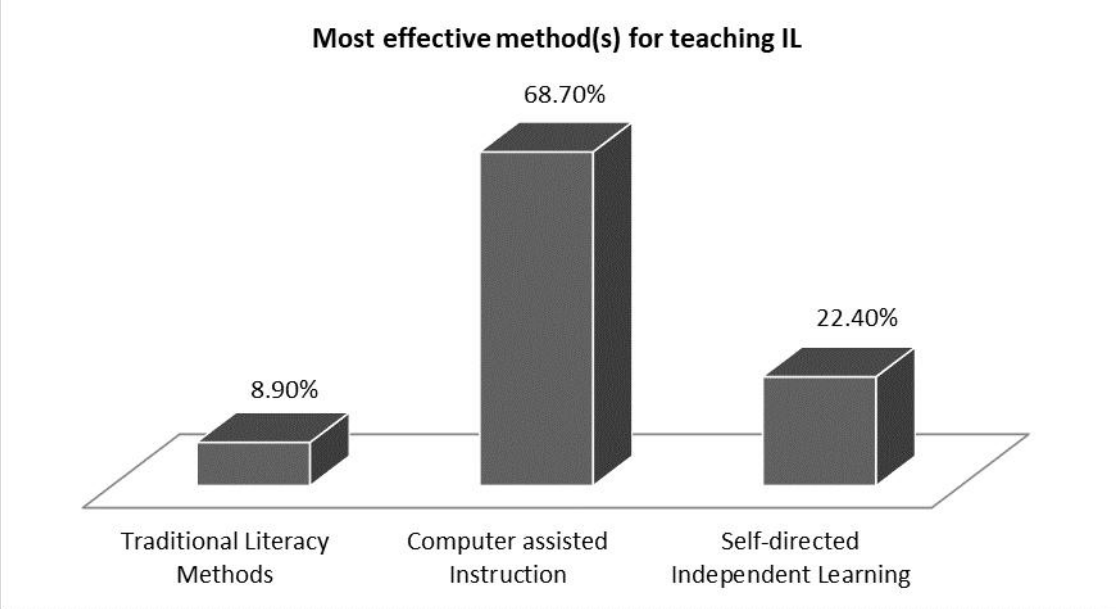

Figure 5.21: Most effective method(s) for teaching IL

5.22 Recommendation for improving IL

The last section covers about the Recommendation for improving IL situation in the departments. Participants expressed their view in table 5.32 as well as in figure 5.22. In this regards the question to the respondents was "what is your recommendation for improving information literacy situation in your department?" This question aims to find out the way of implementing IL program in the public university. It was found that most of the participants want to star IL activities in their departments.

Table 5.32: Recommendation for improving IL situation in the departments

	Frequency	%
The department should immediately start IL program	59	13.20
Need to start user education training program	50	11.20
Need trained and skilled library personnel in seminar library	67	15.00
Information literacy guidelines for the student	89	19.90
All of the above	133	29.80
No comments	49	11.00
Total	**447**	**100.00**

Table 5.32 shows that, the percentage of respondents 13.20% (N=59) who chose the option the department should immediately start IL program, Need to start user education training program chose 11.20% (N=50), Need trained and skilled library personnel in seminar library chose 15.00% (N=67), Information literacy guidelines for the student chose 29.80% (N=89), most of the respondents recommend department should start all activities and 11.00% (N=49) participants have no comments about this regards. Figure 5.22 below show what is your recommendation for improving information literacy situation in your department?

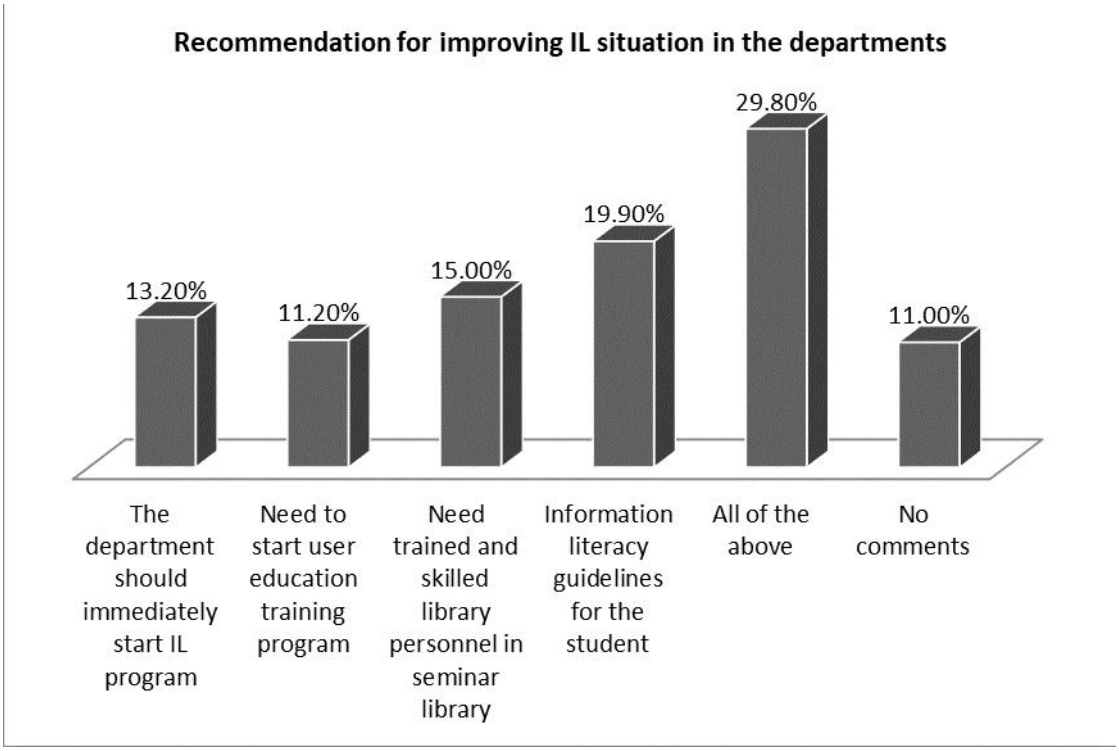

Figure 5.22: Recommendation for improving IL situation in the departments

5.3 Conclusion

The chapter has delivered the presentation and discussion of data analysis which collected via questionnaire methods from the selected university students. Data analysis of the questionnaire has been done by SPSS software and the immediate chapter will be findings and suggestion of the research.

CHAPTER SIX: PROBLEMS AND RECOMMENDATIONS

6.1 Introduction

This chapter has been summarized the problems of measuring information literacy competency in public university students of Bangladesh. Based on the analysis of findings this research tried to find out the basic problems and recommendation.

6.2 Problems

Information literacy is a moderately new concept and it is difficult to translate into certain national languages in Bangladesh. Though information literacy programs are already in existence in narrower forms in some public universities in Bangladesh, in the forms of user education, bibliographic instruction, library instruction, and library research and so on. The problems facing to extend information literacy programs considering experiences need to carefully look into the following problems:

1. ***Lack of Information Literacy Education Policy***

   Education policy is very important to established information literacy knowledge in the public university. But information literacy education policy is absence of the public university as well as the whole education system in Bangladesh.

2. ***Lack of Information Literacy Strategic Plan***

   A good strategy will take into account existing barriers and resources and it will also stay with the overall vision, mission and objectives of the initiatives. Lack of update university level information literacy activities and strategic plan is the main barriers to ensure best information literacy instruction possible at their university and that it discourages life-long learning.

3. *Lack of Government Responsibility*

Government responsibility is very important to find information literacy program in the university level. The government body such as ministry of education and the university grants commission of Bangladesh having no interest in establish information literacy program.

4. *Lack of Skilled Professionals*

Lack of skilled professionals of the public university libraries and departments are the main problem to serve information literacy program properly. To conduct information literacy program skilled and fully professional staff must be recruited.

5. *Lack of Collaboration*

Lack of collaboration and cooperation of intellectual and entrepreneurial expertise and experience with university, departments and other LIS organizations is the big problem to improve information literacy program properly.

6. *Lack of Engagement in Research Activities*

Lack of engagement in research activities, students are not aware of the information literacy standards and can't apply information literacy in an academic program.

7. *Lack of Willingness of University Authority*

There has a lack of taking initiative by the university authority to improve information literacy activities and they do not show positive attitude or make the obstacle to providing continuous logistic support to develop library systems and services.

8. *Lack of Training Program*

Lack of conducting the information literacy training program for student and staff is the main problem in the public university of Bangladesh. Some of the university and departments arrange the information literacy program but this is not sufficient or they could not continue regularly.

9. Lack of Implement an Information Literacy Course Curriculum

The scarcity of information literacy courses is the big problem in the curriculum of the university curricula for the students. Some of the university has been introduced information literacy program or course curriculum but it is not adequate.

10. Lack of Awareness Program

Lack of awareness and understanding of information literacy is the big problem of the public university student. In most of the cases, students are not aware of information literacy based program organized by the university authority.

11. Lack of Monitoring Process

Lack of proper monitoring process is the big problem whether they are achieving and developing information literacy skills.

12. Lack of Concept about Information Literacy

Lack of the concept about information literacy is the main barriers to implement information program properly. Most of the students have not the clear concept about information literacy.

13. Lack of ICT base Facilities

Lack of ICT base facilities in the public universities facing problem from a long time. Insufficient ICT base facilities are the main obstacle to recognized information literacy program in the public university.

14. Lack of ICT Training

Lack of ICT based training is the barrier for better fulfilling their information needs of the public university students. So ICT training modules should be integrated with the information literacy programs.

15. Lack of Learning Materials

Lack of proper learning materials about information literacy is the barrier for better fulfilling information literacy programs of the public the university students.

16. Lack of Budget

Lack of sufficient budget is the main problem to continue information literacy program of the public university of Bangladesh. In term of human resources, the IL program is threatened by the poverty, low level of development, low literacy rates, high cost of education and books, inadequate infrastructures and poor reading habits were also perceived as threats to IL programs implementation in the public universities of Bangladesh.

6.3 Recommendations

Taking into the consideration the experience gained from the above mentioned problems, the following recommendations have to ensure and improve information literacy competency in the public university students in Bangladesh. This study has given a detailed account of IL and provides a good understanding of what needs to be done at present in this regard. The possible solutions and recommendations are given below:

1. Introduce of Information Literacy Education Policy

Information literacy topics and information literacy education must be introduced in every disciplines of university education. This approach is the most effective way for enabling students to introduce with the primary concept of information literacy and develop their information literacy skills. It also allows the use of information to become part of the learning process and prepares them for the challenges of research, problem solving and continuous learning. Topics to be taught should be encompass the various information literacy standards such as seven pillars of IL, the big six skills, information search process, research process model and pathways to knowledge.

2. Formulation of Information Literacy Strategic Plan

Institutional information literacy strategic plan must be Update and re-evaluate in order to document information literacy activities and plans. Investigation and monitoring of the information literacy education strategic plan should be considered. So that students receive the best information literacy instruction from their university and that it encourages life-long learning and inquiry.

3. Built a Platform of National IL

Government should be bent a platform on Information Literacy under the University Grants Commission of Bangladesh to be responsible for designing, coordinating and evaluating the proposed nationwide platform. University experienced faculty members who have deep knowledge on information literacy, Education Ministry and Cultural Affairs Ministry may accomplishment of the information literacy program.

4. Recruitment of Skilled Professionals

Skilled professionals are very essential to provide and conduct information literacy program properly for the students. The university authority should immediately arrange training program on introducing information literacy education for university staff to develop their information literacy skill. Besides university authority should recruit information literacy, ICT knowledge base skilled personnel.

5. Increase Collaboration

University librarian, seminar librarian, instructor and staff who are involved in training must collaborate with the faculty and students on a regular basis. There should be increased collaboration and cooperation between the university and other LIS organizations to bring together their intellectual and entrepreneurial expertise and experience. This is the only way to achieve the objective of creating as many information literate individuals as possible in the public university of Bangladesh.

6. Improve Engagement in Research Activities

The university authority should improve faculty information literacy development in order to support student engagement in research activities. Faculty should be aware of the information literacy standards and how these standards can be applied in an academic program.

7. Awareness of University Authority

To conduct an information literacy program for student's consciousness of the university authority must be presented. Sincerity and consciousness of higher authority is the main factor to modernize the education systems in any institutions. University authorities should realize the real matter and take proper initiative to establish information literacy base activities.

8. Arrange Information Literacy Training Program

Intensive and extensive training programs should be organized for teachers and information professionals. They should be introduced to modern techniques and technologies for information production, processing and distribution, so that they can become proper guides for the students in acquiring information literacy skills.

9. Develop Information Literacy Course Curriculum for the University Students

The university authority should create and implement an information literacy curriculum for each academic program based on this report's best practice in order to support student success, engagement, employability, and life-long learning. Develop classroom sessions and/or assignments that will explore information literacy at various stages of the curriculum.

10. Raising Awareness Program

A massive awareness raising campaign should be initiated in the university about information literacy and its significance. Few students have a clear concept of information literacy; there is more work to do and more steps need to be taken to spread the concept among the students. Most of students are not interested to attend at any education related or information literacy programs because of their failure to realize the importance of information literacy program. Teachers should inspire students at class to attend any kind of education related programs and make realize the importance of such kind of programs. In this regard, the university authority can arrange various promotional activities like workshops, seminars and group discussions for adopting the concept about information literacy.

11. Develop Monitoring Process

University students should be given assignments to check whether they are achieving and developing information literacy skills. They should be instructed and guided to attain information literacy skills in a logical manner and master these skills to complement their academic progress.

12. Awareness of Information Literacy

Most of the university students have no clear concept about IL program. Most of the students have also not a holistic concept of this term. Difficulties experienced by

students in information literacy have to be handled by giving enough understanding and wide opportunities. To conduct information literacy programs in the university students must have a holistic or comprehensive knowledge about information literacy programs and related areas associated with it.

13. Improve ICT base Facilities

Teaching of information literacy education is not possible without sufficient ICT support. To develop library systems and services, to provide standard library facilities to the students and enable them to become information literate and to introduce students with up to date and standard education systems the university must have sufficient ICT facilities such as, broadband internet connections, computer lab, projector, digital screen, information retrieval tools, and so on. In this regard university authority should give more concentration to the establishment of ICT facilities in the department seminar, computer lab and library.

14. Extensive Training on ICT Literacy

ICT training modules should be integrated with the information literacy programs so that students can effectively utilize computing and telecommunications techniques for better fulfilling their information needs. This would have a big impact on their ability to gain experience of searching and learning ICT knowledge. Extend practical program in information retrieval techniques and provide information literacy guidelines for the students so that they can become more information literate.

15. Adequate Learning Materials

In order to ensure that university students of learning acquired information skills is necessary. Learning and teaching interactive, recognize diversity in learning styles, facilitators of lifelong learning and keep current with the latest information technologies is very much necessary. Students have to obtain an adequate amount of learning material about information literacy. Therefore, tutorial material has to be designed to supplement their information literacy capability.

16. Allot Sufficient Budget

As a developing country like Bangladesh to conduct any development project funding is the main barriers. Government bodies like Education ministry and University Grand

Commission have no intension to allot sufficient budget for the public university. To conduct information literacy education and training program in public university regularly, sufficient financial facilities must be allotted. The university authority should give more attention on this issue.

6.4 Conclusion

The chapter has explained the problemss and recommendations of the study. Findings base on participants' opinion that are analyzed previous chapter and the immediate chapter will be findings and suggestion of the research.

CHAPTER SEVEN: SUGGESTIONS AND CONCLUSION

7.1 Introduction

The determination of this research has been exploring the measuring IL competency level of public university students of Bangladesh. This research aims to assess information literacy competencies and proficiencies of the students.

This chapter has been encapsulated the data findings that was analyzed and presented in light of the responses of public university students of Bangladesh. To achieve the purpose of the study, some of the objectives were generated and the findings of the research were set according to the objectives of the study.

7.2 Research Outcomes

Based on the objectives and research questions of the present study, we have come up with the following outcomes.

7.2.1 What are the IL competencies of selected public university students?

Research Outcomes

The study exposed that, the information literacy competency of the students is not in a good position. Most of the students have not clear concept about information literacy and most of them have vague concept. The study exposed that, students who responded to the questionnaire, their information literacy is not so good. Only 24.38% students have clear concept about information literacy. The main reason for this is that at present no information literacy class and training program is included in their university. Only 12.30% students expressed that they have all facilities about IL program in their department and 80.50% students stated their view that the department does not arrange any information literacy training program. It is apparent from the responses that library should arrange information literacy program such as User Education program, Bibliographic instruction program, Online searching techniques program, OPAC training session, Library Orientation,

Library Workshop etc. regularly. Association and cross tabulation of university and university Library arrange Information Literacy Program status according to Chi-Square Tests p-value is 0.523 so it can conclude that institution does not influence information literacy program. Among participants, most of the students (68.70%) recommended to include Computer assisted Instruction (i.e. Web based tutorials) and a big number of the students chose Self-directed Independent Learning (i.e. workbooks) and more information literacy guidelines to improve information literacy program in the department.

7.2.2 What are the problems of providing information literacy to public university students?

Research Outcomes

A big part of the students stated that, insufficient facilities and negligence of the department and university authority are the basic problem to provide information literacy program. It was found that most of the departments, seminar library and university library do not arrange information literacy or ICT base program regularly. Students who responded to the questionnaire most of the respondents (66.20%) exposed that, department and university does not arrange information literacy program.

Fund crisis or inadequate fund and negligence of the authority are the main problem to provide information literacy program properly. Most of the library do not arrange information literacy program regularly. 58.60% respondents stated that library does not arrange any kind of information literacy program it is a big problem to provide information literacy program. Besides students unconsciousness is the vast problem to provide information literacy program in university properly.

7.2.3 What are the perceptions of IL by the students of public university?

Research Outcomes

The study exposed that, almost all students are interest to include IL program, IL education and training courses in their departments. Most of the students (81.00%) have the same opinion that IL education and training courses should be included in graduate program. It is showing that most of the participants have not attended any kind of IL program. 41.83% of the participants does not attend any kind of information literacy program.

7.2.4 How do the public university students use information seeking strategies?

Research Outcomes

The study exposed that, the public university students' information literacy and competency level is low. Various questions were posed to the participants and it was found that most of the participants have not clear concept about current information sources. 21.70% participants search journal to consult the most current information on a topic. To finding research article, 44.30 % students prefer online database. Only 29.53 % students able to search books by library catalogue from the library collection and 32.70% students don't know how to locate a book on the self in the library. The study indicates that many students fail to distinguish between the library catalogue and databases.

The study shows that very few students entering university are familiar with online databases and they will likely have to use them to find periodical articles to complete their assignments. Students understand the real limitations of Internet search engines for finding journal articles. Almost all students able to use internet but 41.20% students take help to library staff or others for searching information in online. A good number of the students have not clear concept about search engine, google feature and Boolean logic. Besides a big part of the participants don't know how to identify and locate materials from the library using Open Access Public Catalogue (OPAC), Indexes and Abstract Journals.

7.2.5 What are the problems do they face and how do they can overcome these problems?

Research Outcomes

The study exposed that, 68.90% students think computer or web based tutorials teaching methods and 22.40% students think self-directed indecent learning are effective for teaching information literacy. Only 8.90% students think traditional literacy method is effective for teaching information literacy. The study indicates that computer or web based tutorials is the perfect way for teaching information literacy.

The study shows that Star, for improving information literacy situation almost all participants (89.00%) want to start information literacy activities such as, departmental IL program, user education training program, trained and skilled library personnel in seminar library, Information literacy guidelines for the student etc. in their departments.

7.3 Suggestions of the Study

The study aimed at investigating university students' assessments about information literacy competency in an effort to have a better understanding of how university students relate information literacy to their departments, and also to find out which sources of information students prefer and additional sources they consulted for information for their academic work or research. It is found that information literacy competency skills are very essential for the learning process in university level. Students want that the university authority should immediately start IL program and continue regularly. Besides orientation program is very important for the university students to develop information literacy skill when the start university life. University level activates and school or college academic activities are far difference between them. University students explore universal course curricula so they have completely known about critical and analytical skills and they have to know proper techniques to search information and use information as well.

In general, the information literacy competency of public university student is not in a good position. As we said that at present information literacy training program is not available in the departments that is why it is apparent that most of the students are not competent and needs to develop their competency. It is appeared that knowledge needed for increasing information literacy capability such as how to access to information, when information is needed and using advance level search formulations are not discussed (Islam and Tsuji, 2010).

7.4 Conclusions

It is true that information literacy has increased prominence as we become more immersed in the information age. The study has discovered the present status of the practice of information literacy competency of some selected public university students in Bangladesh. This study showed that public university students are not in a good position as regards their understanding of the concept of information literacy competency and the students are facing considerable challenges in the areas of information literacy. Despite the obvious challenges faced by public university students of Bangladesh; there are also important opportunities for improving on what we can do now. There can also be no doubt that if the university authority slowly but surely takes the immediate steps, they will be able to create self-sufficient and information literate students who can make meaning full contributions to the society. Besides national base information literacy institute or training center should

establish in Bangladesh. University Grand Commission may take steps towards starting established this kind of institute or training center for public university students of Bangladesh.

Essential information literacy program should incorporate in the secondary and higher secondary curricula. A framework for the development of national information literacy competency standards and an assessment tool for higher education need to be prepared. There is a need to formulate a national standard that can be used as a benchmark for the preparation and delivery of information literacy programs by all Bangladeshi institutions of higher education (Islam & Tsuji, 2010). The orientation programs will be compulsory for all students and are usually held at the beginning of every academic year or semester. Throughout the year, all universities will organize other programs with the aim of familiarizing the students with the various tools available within the libraries or others way. Some recommendations were proposed for improving and increasing the information literacy competency in the public university students of Bangladesh. If the university authority can successfully implement the recommendation, it will definitely usher in a new era of development.

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APPENDIX

Questionnaire

on

Measuring Information Literacy Competency of Some Selected Public University Students: A Study

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[Please mark your answer with (√) in the appropriate box]

1. Demographic and academic information:

1.1 Name: .....

1.2 Institution: .....

1.2 Department: .....

1.3 Academic year: € 1st year € 2nd year € 3rd year € 4th year € Masters € MPhil/PhD

1.4 Age group: € 15 – 20 € 21 – 25 € 26 – 30 € 31+

1.5 Gender : € Male € Female

2. Do you have any concept about 'Information Literacy'?

€ Don't know the actual meaning of Information Literacy.

€ Have heard, read but don't understand.

€ Have vague concept. € Have clear concept.

3. What do you know about information literacy?

€ Information literacy is the ability to find and use information and the keystone of lifelong learning.

€ Information literacy is the understanding and set of skills necessary to carry out the functions of effective information access, evaluation, and application is an essential component of any general education program.

€ Information literacy is the ability to recognize the extent and nature of information need, then to locate, evaluate, and effectively use the needed information.

€ All answers are correct. € Don't know.

4. What is your opinion about an information literate person?

- € An information literate person is able to identify, retrieve and information in the most advanced and appropriate way.
- € S/he knows about and can use all major information retrieval technologies.
- € S/he can effectively use information for solving various problems.
- € Don't know
- € Others……

5. Do you think your department has all the facilities to run information literacy program?

- € Has all the facilities.
- € Some of the facilities are available.
- € Needs more facilities.
- € Has severe shortage of all the facilities.
- € Don't know.

6. Did you take part any Information Literacy training program arranged by your department?

- € Yes
- € No

7. Do you think Information Literacy education and training courses should be included in graduate programs?

- € Yes
- € No
- € Don't know

8. Please mention which of the following concepts are related with Information Literacy

- € User education.
- € Bibliographic instruction.
- € Information retrieval techniques.
- € Library orientation program.
- € Online searching techniques.
- € OPAC searching techniques.
- € All of the above.
- € Don't know.

9. Does your university Library arrange Information Literacy Program regularly?

- € Yes
- € No

10. If yes, how often does the Library arrange it?

- € Monthly
- € Quarterly
- € Half Yearly
- € Yearly
- € At every semester
- € Sometimes

11. Have you ever attended any of the following?

- € User Education program.
- € Bibliographic instruction program.
- € Online searching techniques.
- € OPAC training session.
- € Library Orientation.
- € Hands on Library Workshop.
- € Did not participated at any of the above.

12. For the most current information on a topic, you need to consult:

- € Books
- € Periodical articles
- € Encyclopedia articles
- € Journals
- € Bibliographies
- € E-resources
- € All of these

13. Which of the following tool(s) you prefer for finding research article?

- € Library catalogue
- € Online databases
- € Journals
- € Web
- € Don't know

14. How do you search books from the library collection?

- € Library catalogue
- € Bibliography
- € Search engine
- € Books in Print
- € Don't know

15. How would you locate a book on the shelf in the library?

- € Call Number
- € Author's name
- € ISBN Number
- € Title of the book
- € Don't know

16. How would you search any documents about a particular author from the library catalogue?

- € By Title
- € Keywords
- € By Author
- € By Subject
- € By Publisher
- € Call Number
- € Year
- € Don't know

17. How do you look for information online?

- € Using search engine
- € Browsing website
- € Take help who knows
- € Using subject portal
- € Don't know

18. In order to find research article, which Google feature will you prefer?

€ Google € Google Books € Google Scholar

€ All of the above €Don't know

19. Are you able to independently identify and locate materials from the library using the following aids or tools?

Open Access Public Catalogue	€Yes	€No
Indexes	€Yes	€No
Abstract Journals	€Yes	€No

20. In order to find more documents on your topic you can include synonyms in search statement. To connect those synonyms in your statement, you use:

€ AND € + € NOT

€ OR € Don't know € Other (please, specify)….

21. You have found a book on your topic. Which sections of the book will you consult to find other documents on the topic?

€ The glossary € The index € The bibliography

€ The table of contents € Don't know € Other (please specify)……

22. Which method(s) is the most effective for teaching information literacy?

€ Traditional Literacy Methods (i.e. Lectures, Demonstrations etc.)

€ Computer assisted Instruction (i.e. Web based tutorials)

€ Self-directed Independent Learning (i.e. workbooks)

23. What is your recommendation for improving information literacy situation in your department?

€ The department should immediately start information literacy program.

€ Need to start user education training program.

€ Need more trained and skilled library personnel in seminar library.

€ Information literacy guidelines for the student.

€ All of the above. € No comments.

24. If you have any other suggestions, please mention here…….

…….