INTRODUCTION
CHAPTER – I

INTRODUCTION

Information is the most crucial component in all walks of human life. Over the centuries they know how to locate and use information for various purposes, particularly, in achieving the desire has been regarded as the most important quality for human kind even from the Stone Age. The successful men folk who were leading the society possess through understanding and perception on various types of information and determining the information needs at various moments. This has been gaining momentum when the human civilization were transforming from agrarian to industrial society. The 20th century has evidence the information society in political, social, economical, cultural and behavioral aspects of human life. The use of technology in information processing, storing, organizing and disseminating has completely changed the dimensions of information in to complex and multifarious. This has been evidenced a great impact in bringing economical and social value of information explicitly during the end of the twentieth century and the beginning of this millennium. Identification of information needs, locating and communicating the information, which is customized as to the specific needs and desires at right time to the larger public, has become easy, convenient and affordable. This has paved the way for a number of developing countries and third world countries in improving the economic condition. Many Asian countries including India have become potential nation to compete with developed European and American
nations as they have used the information technology in all major services such as medicine, education, consumer industry, agriculture, governance and so on.

As the web, has become more pervasive medium, particularly, during the last decade, has changed the internet as technology to culture. It has made a great number of opportunities for all sects of people in performing their responsibilities and services towards achieving the immediate and long term desires. Higher education industry has become the major stakeholder in contributing to, benefiting as well from the web based information and knowledge resources. This also has contributed the same level of complexities, issues and limitations for faculty, students, researchers and other stakeholders to have the right perception, techniques, skills in identifying their information needs, defining them and in locating, evaluating, accessing and using the information. Hence, the significance of information literacy that emerged in achieving the actual benefits of the information and technology to the large public towards transforming the information society in to knowledge society.

1.1 INFORMATION LITERACY

Information Literacy(IL) is the ability to access, evaluate, organize and use information in order to learn, problem solve and make decisions in formal and informal learning contexts, at work, at home and in educational settings. It is a set of competencies that an informed citizen of an information society ought to posses to participate actively and intelligently in that society. Information literacy is 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. A few of the important definitions on IL are as follows.

Paul Zurkowski (1974) is supposed to be first, who defined information literacy as “people trained in the application of information resources to their work can be called as information literates”.

Lexon and walker (1993) also define “information literacy by characterizing information literate person: One who has analytical and critical; 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 needs.

A general acceptable definition was proposed by Association of College and Research Libraries in 2000, which defines IL as a set of ability requiring individuals to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information”

1.2 INFORMATION

The term ‘information’ has been derived from two Latin words “Forma” and “formation”. The terms such as knowledge, fact, data, news and message can be used as synonyms to the term information. It is not easy to define the term information precisely. Information means the communication of knowledge about an event of given condition or the spread of knowledge about an event of a great condition or the spread of knowledge derived from observation, study experience or instruction. According to Shera (1998), information both in the sense as is used by the biologist and it is the stimuli that one
receives through sense. It is a unit of thought. According to Bhattacharya (1997) “information is the message conveyed or intended to be conveyed by a systematized body of ideas”. It is defined variously by Belkin (1978) as a vital process of transfer of thought, knowledge, and all related spheres of human mind. A comprehensive definition of the word ‘information’ is not possible due to its amorphous, complex and multifarious nature: there is no universally accepted definition of information is yet crystallized, perhaps it will never be crystallized.

The word “information” is used, in the context of user research, to denote a physical entity to phenomenon as in the case of questions related to the number of books read in a period of time, the number of journals subscribed to and so on, the channel of communication through which message are transferred (as when we speak of the incidence of oral versus written information), or the factual data, determined and presented in a document or transmitted orally” (Wilson, 1981),

McGarry (1975) found that the following are the attributes of information,

i) Information can be regarded as a near synonym to fact.

ii) It has a transforming or reinferencing effect on what is known or believed to be know by a human being

iii) Information is an aid to decision making

iv) Information is the freedom of choice that one has in selecting message

v) Information is the necessary piece of “something”. When we are faced with a choice, the amount of choice required depends upon the complexity of the decision to be made.
vi) Information is the raw material from which knowledge is derived.

vii) Information is exchanged with the other world: not merely received.

viii) Information is a forced of effect on the recipient.

1.3 INFORMATION TYPES

Even information can be categorized on the basis of the nature of its use and purpose for which it is used. Shera (1998) has categorized information under six heads.

i) Conceptual information

ii) Empirical information

iii) Procedural information

iv) Stimulatory information

v) Policy information

vi) Directive information

The conceptual information relates to idea, theories and hypotheses about the relationship which exists on the basis of the variables in the area of problem. Empirical problem relates to the data and experience of research which may be drawn from oneself or through communication by others. Procedural information is the data of investigation which are obtained, manipulated, and tested and it is essentially methodological as it is desired from scientific attitudes. Stimulatory information is the type of information which is motivated by oneself or environmentally derived policy information and directive information.
In Social Science, information is generally categorized under the following heads:

i) Statistical information  
ii) Descriptive information  
iii) Analytical or Interpretative information

The population data of a country can be considered statistical information. If someone describes the growth of population that had taken place in different years that will constitute descriptive information whereas as if someone analyses the same it is interpretative information.

1.4 INFORMATION QUALITY

Information has various attributes and characteristics. The inherent characters go along with the following seven adjectives, when it is information: human, expandable, comprehensive, substitutable, transportable, diffusive and sharable. As information is an important valuable resource, it ought to have certain ideal qualities. Some of the important qualities of information are.

i) Accessibility  
ii) Comprehensiveness  
iii) Timeline  
iv) Clarity  
v) Precision  
vi) Flexibility  
vii) Variability
viii) Free basis
ix) Quantifiable

Further it has six parameters of information: which are

1) Quality of information which can be measured by the number of the documents, pages, words, characters, bites, drawing etc.
2) Content, the meaning of information.
3) Structure, the organization and its logical relationship between statement and elements.
4) Language, symbols, alphabet, codes, and syntax with which the ideas are expressed.
5) Quality, which measures the completeness, accuracy relevance and timelines of information.
6) Life, the total span of time in which value can be derived from the information.

1.5 NEED FOR INFORMATION

Today information has become the necessity of every one. Everybody needs information for some purpose or the other. Information is defined in most of the dictionaries as knowledge, intelligence, facts or data, which can be used, transferred or communicated. Information is mankind’s most valuable resources, which has played and continue to play a crucial role in building up human civilization and society. Educational and research activities require more and more information. Students need it relating to the
prescribed syllabi for pursuing academics studies, more specifically to pass their examination. In addition, the teachers also need information for imparting education to their students. Besides students and teachers, researchers, who are engaged various subjects especially in the field of science, need information on a continued basis and are considered the biggest users of information. Hence, most of the information systems and services have been developed in academic institutions and universities to satisfy these requirements of students, teachers and researchers.

1.6 INFORMATION SOURCES

Information services are usually provided through the information sources, where the required information amount of is likely to be an available. Information sources are classified into (1) primary (2) secondary and (3) tertiary sources. The primary sources or document is one in which the information contained is original. It is a material which is the most original and authentic. ‘The Primary’ means the basic source of new information in documentary form. Primary sources usually take the form of text, journal, article, monographs, dissertation, reports or patents. Secondary source contain second hand information that has already appeared in primary documents. In these sources, the original information is elected, modified and arranged in a suitable format for the purpose of easy location by the users. e.g. indexes, abstract, bibliographies, encyclopedias, yearbooks, gazetteers, who’s who etc. Since these sources provide the same information as available in the primary sources they are called secondary sources of information contain information thrice far from the primary sources. Hence, they act as a guide to the secondary and primary sources. Tertiary sources help us in getting original information in
an organized way. Tertiary sources are the usual province of yearbook and directories, bibliographies, research in progress, guide to libraries and sources of information, guide to organization etc.

1.7 INFORMATION SEEKING BEHAVIOR AS A CONCEPT

The phrase “Information Seeking Behavior" is based on different concepts which are linked to donate one process occurring in individuals in the library and information science context. The term ‘information seeking’ is related to library users who seek information in a variety of circumstances and from a variety of sources.

Behavior is defined as follows:

1. The manner in which a person behaves in a reaction to social stimuli.

2. An activity of a defined organism especially observable activity measurable in terms of quantifiable effects and environmental stimulus includes both external and internal aspects.

3. The treatment shown by a person towards or others, especially in confirming with or divergence from the norms of good manner or social decorum.

In fact, it is to be defined as a behavior, a human activity, such as writing a memo, driving a car or talking on the phone. Since it is a behavior, it is logical to purpose and it seems from sources common to all behaviors. Likewise, information seeking behavior comprises of

a) Use of information sources

b) Method of information retrieval
c) Value of seminars and conferences

d) Delegation of literature search

e) Linguistic ability

Effective utilization of information is based on information seeking behavior. In fact user studies which have become so feasible are mostly based on the method of seeking information which may develop an attitude and behavior in an individual. In fact, a large number of generalizations about user behavior may be made based on the following categories: such as:

1. Users of information belong to identifiable group with characterization patterns of information requirements.

2. The role of the users is an important determinant of information needs.

3. Accessibility is a key factor determining the use of information sources.

4. The users awareness of, and ability to information sources is often imperfect

5. Interpersonal communication is one of the most important means of transmitting information.

6. The amount of information required varies considerable from person to person.

7. Users often require information to be supplied at short notice; decision may have to be given at a time regardless of the availability of information.

Most of the above generalization are obvious and tend to be overlooked. It is however to be noted that the generalization are the foundation upon which the behavior and conceptualization of the user behavior can be made.
Bebout (1975) and others in their survey on User Studies in the Humanities have attempted a generalized profile of information seeking behavior in terms of several categories of behavioral patterns of users such as:

a) Information sources
b) Methods for locating references
c) Users and the function of abstract journals
d) Attendance at average value of conference
e) Delegation of interactive searching
f) Late detection of information
g) Linguistic ability
h) Stimulus for research/ideas

The above categories are too nebulous to answer methodological questions about the information seeking behaviours of users. T.D.Wilson (1981) has perpetually pointed out that “we wish to uncover the determining factors of behavior; we must do so by first undertaking in depth studies of well defined categories of persons developing explanatory concepts and then testing those concepts by studies in related but different setting.

1.8 USERS

In a library or information center the user are the last links or the recipients of the information in the communication cycle. There are a number of items used as a synonym to user as patron, client, members, and customers. Of these, users is a preferred terms, which may be defined as a person who uses one or more libraries’ services at least once a
year. Users are individuals who can be divided into different categories on the basis of tasks assigned to them in a library organization.

The term “user” denotes all persons who may use a library or information center. The term also includes those who generate information and uses information as the basis upon which to build their own contribution. Every user has a sovereign power to select any place of information from the universe of information. It is believed that the ultimate judge of the relevance of information or information services is the user. Hence, it is said that user is the centrifugal force influencing a large number of factors related to library and its environment.

1.9 TYPES OF USERS

Three important groups of users of a scientific and technical information system are distinguishable according to the kind of activity in which they are engaged; such as:

a) Researchers, in the basic and applied science

b) Practitioners and technicians engaged in development and/or operational activities in the various fields of technology and industry, agriculture, medicine, industrial production, communication and so on.

c) Managers, planners and other decision makers who are engaged in coordinating development activities in science and technology at the local, national or international levels of private and public sectors.

The three users groups identification above are broadly identified and they do not include teachers and students as practitioners vary widely according to their need with
which they are concerned in designing and operating on the frame work. Information services in any field of science and practical activity, particularly in Social Science, Medicine and Agricultural, have certain specific features. A system designer would do well to try to cope with this whole spectrum of potential user groups.

1.10 USERS STUDIES

The term user a study has been defined various information scientists. According to Wysoki (2004) ‘user studies’ could be concerned with studying information processing activities of the users. Empirical studies of the use of demand or need for information are usually called user studies. The working definition of users study adopted the Center for Research on User Studies is the “The general objectives of research on user studies is the further undertaking of the information transfer system of all types and to have the implication for the organization of communication, the distribution of researcher and the relationship between systems”. In the light of the above definition, a study, which is focused on users to understand directly or indirectly their information needs in terms of behavior and use patterns, is usually called ‘user study’

DESCRIPTION OF CONCEPTS

1.11 INFORMATION LITERACY

The American Library Association (ALA) (1989) defines Information literacy as a set of abilities requiring individuals to “recognize when information is needed and above to locate, evaluate, and use effectively the needed information.”
Information literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed, and assume greater control over their own learning.

An information literate individual is able to:

- Determine the extent of information needed
- Access the needed information effectively and efficiently
- Evaluate information and its sources critically
- Incorporate selected information into one’s knowledge base
- Use information effectively to accomplish a specific purpose
- Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally.

1.12 VARIOUS FORMS OF INFORMATION LITERACY

1.12.1 Academic literacy

Leibowitz (1995) adds to these definitions and indicates that an academic literate will be an individual with the confidence to critique and argue as well as have the ability to manipulate the conventions of academic writing and language. It is somebody who has in other words earned authority as a writer, demonstrating knowledge of course contents and fluency in using English mostly.

In general, academic literacy can be defined as an academic reading, writing and critical thinking. Amos (1999) indicates that academic literacy is the skill to read and
comprehend various discipline-based materials, to deal with difficult vocabulary, to understand text cues, and to develop research skill and to present viewpoint.

1.12.2 Computer literacy

Computer literacy can be defined as the undertaking of what computer hardware and software can do. It is the competency to use the computer to complete the task. Although computer literacy plays an important role in accessing the information literacy goes beyond computer literacy. A computer literate person is not automatically an information literate individual, because the latter requires cognitive skills and problem process. (Behrens, 1990; Horton, 1983; Johnson & Eisenberg, 1996 and Rockman, 2004)

Computer literacy is generally thought of as familiarity of the personal computer and the ability to create and manipulate document and data via word processing, spreadsheets, database and other software tools (Eisberg, 1991). It is the knowledge and ability to use computers and technology efficiently. Computer literacy can also be referred to as the comfort level someone has, with using computer programmes and other application that are associated with computers. Another valuable component of computer literacy is to know, how computers work and operate.

1.12.3 Information technology literacy

Information technology literacy is the ability to know, what resources are available, what information is within these resources and how to use technology to access and communicate information. Rockman and Smith (2005) defined information
technology literacy as the ability to use digital technologies, communication tools and or
network to solve information problem in order to function in the information society.

Information literacy is a broader concept because information technology
supports information literacy. An information literate person will be able to employ
information technology to access, retrieve, store, manage and communicate information.

1.12.4 Information fluency

According to Sharkey (2006) information fluency is the integration of information
literacy, critical thinking and the ability to use technology to find information. Rader
(2004) defined it as the ability to navigate information structure and to evaluate
information retrieved through these structures.

1.12.5 Library Literacy

According to Behrens (1993) library is the ability to use the resources, services
and facilities of a library independently and effectively. A library literate person will be
able to locate and retrieve information within the library using retrieval tools such as
catalogues and indexes. A wide range of terms like library education, library instruction,
library orientation, book education and bibliographic instruction are used the teaching of
library literacy.

Although library skills play an important role in providing a frame work within
which information literacy skills are attained, information literacy involves the retrieval
and locate of information beyond an individual’s library. It also involves the cognitive
process of not only the lower order skills of retrieving and locating of information, but also the evaluation and use thereof (Behrens, 1990).

1.13 INFORMATION LITERACY INITIATIVES IN INDIA

Information literacy programs are already in existence in narrower forms in various libraries and information centers in India, in the forms of user education, bibliographic instruction, library instruction, library research, and so on. Many advocates of information literacy in India proposed to integrate information literacy program with the academic curricula of educational system of India, starting from the school level to the higher education, vocational education, professional education and research degree level (ICIL 2006).

To establish a knowledge-oriented paradigm of development and to address the digital divide in India, the Government of India has established National Knowledge Commission in June 2005 with the following Terms of Reference (National Knowledge Commission of India: an overview (online). Retrieved 1 May 2006).

- Build excellence in the educational system to meet the knowledge challenges of the 21st century and increase India’s competitive advantage in fields of knowledge.
- Promote creation of knowledge in S & T laboratories
- Improve the management of institution engaged in intellectual property rights.
- Promote knowledge application in agriculture and industry.
Promote the use of knowledge capabilities in making government an effective, transparent and accountable service provider to the citizen and promote widespread sharing of knowledge to maximize public benefit.

1.14 ASSESSING INFORMATION LITERACY

Assessment can be defined as any process of gathering concentrate evidence about the impact of and functioning of undergraduate education. It is however most often associate with the measurement of educational outcomes and students performance while he or she is enrolled in course work (Dow, 1998).

There are two aspects involved when information literacy is assessed. On the one hand it is used to determine whether students have mastered the skills and knowledge associated with information literacy. On the other hand it is a tool to measure how well the institution has accomplished its educational goals and mission of producing students who can perform satisfactory in any work place in the information society (Hennon & Dugan, 2002)

Assessing information literacy is a difficult issue. Not only does it incorporate conceptual, technical and critical thinking skills, but the responsibility of the teaching and assessment is shared by information literacy tutors and academics (Iannuzzi, 1999 : 304).

1.14.1 Brief overview of information literacy assessment

With the information literacy movement, libraries realized that in teaching students how to locate, evaluate and effectively use information when it is needed, life-
long learning skills are taught and that they will not only contribute to enrich the quality of teaching but also the quality of students’ lives (Dow, 1998).

Libraries have traditionally used resource-based input and output measures to define quality and impact on student learning. Statistical and opinion questionnaires formed the basis for determining quality of the library collection and services. But Astin (1987) argued that quality cannot be inferred from opinion surveys. It should be achieved by increased student activity, faculty participation in learning and what and how much students learn.

1.15 NEED FOR ASSESSING INFORMATION LITERACY

In a study conducted at the University of California-Berkeley, Maughan (2000) found that one out of four undergraduate students will spend no time in the libraries. Taking the fact that 65% of undergraduates spent less than 4 hours per week in the library into consideration, it is clear that students do not understand and value the importance of using resources for further reading in the library. It is also an indication that lectures don’t encourage individual and resource based learning, that the library is not seen as an addition to the class room and that route learning is the order of the day. A recent study on incoming first year undergraduate students at the McGill University in Quebec (Canada), indicated that students are not information literate. Questionnaires were used to assess information skills. Results showed that students’ knowledge of the basic elements of the information seeking process is limited. The highest rate of correct answer provided was less than 36%
Greer, Weston and Alm (1991) research library literacy at the University of Northern Colorado and indicated that students rely primarily on others students for assistance in finding information in the library. The reason for students not realizing the need for library instruction might be that they are satisfied with using certain resources and they are not aware of the wealth of information available in other resources.

According to Sayad (1998) Information literacy consist of an infusion of various different skills, many of which may be taken for granted by teachers and lectures, but which students simply do not posses (1998).

According to Miller (2001) the following general pre-conceived notions by both faculty and students can be supported by pre-assessment of incoming students:

- Computer literacy does not equal knowledge of library research strategies or Internet search strategies
- Basic knowledge of the library catalogue does not mean student are proficient with on-line search strategies
- Students do not need information literacy training
- Students need assistance in becoming information literate

Students often overestimate their information skills because they lack tools to assess their shortcomings. This emphasizes the need for a generally accept assessment instrument for testing the general information competence of all incoming students (Maughan, 2001 and Miller, 2001). Such as test will identify the need for information competence programs and gaps in competency. This can be rectified to allow and
academic to work on the assumption that students have uniform basic information literacy levels (Dunn, 2002).

1.16 MEASUREMENT TOOLS FOR INFORMATION LITERACY ASSESSMENTS

In the new information technology world, students are expected to do more than write test and examination. Traditional methods of evaluation like test, multiple choice, and fill–in–the-missing-word will test concrete knowledge and not the ability to use a certain skill in a real life situation (Avery, 2003).

Development a reliable survey instrument might be a big barrier to successful assesses information literacy levels. Various measurement tools in use will test different information competencies (Mark & Boruff-Jones, 2003). Any measurement tool should be the result of collaborative planning by librarians for subject’s expertise, by measurement specialist for expertise on item writing, test reliability and analysis of result and by faculty for suggestions (DeMars, Cameron & Erwin, 2003).

1.16.1 Formal evaluation

According to Baker & Curry (2004) although no standardized information literacy test exist, formal assessment like test, portfolios and projects are employed when information literacy is a credited course or forms part of an academic course. Institutions have developed test locally or formally evaluate students on a theoretical as well as performance basis. Gratch-Lindauer (2003) gives a short overview of various multiple-choice and short-answer information literacy online and paper-copy test that are in use. A
pass mark will indicate that the students reached an acceptable level of information literacy. According to Dunn (2002) formal "academic" testing of information literacy is static and will test concentrate knowledge. It will not access the effectiveness of students search skills and competencies in real life situations. Language, culture and context issues might be a further problem.

1.16.2 Observation

Students can be observed while they are performing a task like retrieving and selecting information for an assignment. Observation will supply information on nonverbal behaviors (Dunn, 2002) and Hernon & Duhan, (2002). When large numbers of students need to be assessed, this method of evaluating can become time consuming.

1.16.3 Worksheets

It can be expected of students to complete worksheet, logs or diaries during training session or while they are performing a certain task. The notes will indicate how students apply the skill they have learned (Heron & Dugan, 2002).

1.16.4 Performance assessments

Instead of simply answering questions, performance assessments require students to perform a task which will be judged against established criteria. A form of performance assessments is an assignments or projects that will require more than one type of activity (Gratch-Lindauer, 2003).
1.16.5 Self-assessment

The final phase of the information literacy process is to appraise the complete task or to evaluate the final product to determine if any part is incomplete or needs improvement. Unsatisfactory products imply that not enough knowledge was gained, that information skills were insignificant and that no solution to an information problem was found (Behrens, Olen & Machet, 1999).

1.17 MODELS OF INFORMATION LITERACY

- Based on this to teach information skills the Library and Information Professional bodies from various countries like USA (ACRL), Australia and New Zealand Institute for Information literacy and UK body (SCONUL) have produced models for Information Literacy.
- The Big 6 by Eisenberg & Berkowitz
- Seven pillars model by SCONUL
- Guided Inquiry by Carol Kuhlthau and Ross Todd
- Information Literacy & Inquiry Learning model by Sauce T. Bond
- Digital Information Fluency Model by Sandy Schaeffer, Michael Fry
- Seven faces
- The Research Cycle by Jamie McKenzie
1.17.2 The Big 6 Guide to Information Problem – Solving

a) Task Definition

- Define the Information problem
- Identify information needed

b) Information Seeking Strategies

- Determine all possible sources
- Select the best sources

c) Location and Access

- Locate Sources
- Find information within sources
d) **Use of Information**

- Engage (e.g. read, hear, view, touch)
- Extract relevant information

e) **Synthesis**

- Organise from multiple sources
- Present the information

f) **Evaluation**

- Judge the Product (effectiveness)
- Judge the process (efficiency)

1.17.3 The Seven Pillars Models by SCONUL
a) Identify

- The Problem
- The search topic
- New information
- Lack of knowledge on the subject

b) Scope

- Types of information available
- Issues of accessibility
- Identify information gaps
- Use new tools
- Identify different formats

c) Plan

- Search techniques
- Understand breath & depth of info
- Identify Appropriate key words
- Identify controlled vocabularies
- Identify specialty search tools & techniques

d) Gather

- Understand information & data
- Organized
- Accessed
- Shared
Issues of getting new and precise data

Experts Help

Sharing through community

e) Evaluate

- Different information resources
- Suitable material
- The Quality
- Accuracy
- Relevance
- Bias
- Credibility & reputation
- Data source
- Consistency
- Comparison on Different sources
- Key Concepts

f) Manage

- Responsibility (for providing honest information)
- Data handling methods
- Expertise
- Systematic record
- Archive and retrieve data
- Meta data
Experts help
Bibliography
Ethical data protection
Appropriate technology

g) Present

- Understand difference of summarizing and synthesizing
- Writing and presentation
- Address original question
- New information into context of existing knowledge
- Communicate suing appropriate writing style
- Develop a personal profile in community
- Distribute through different sources

1.17.4 Guided Inquiry by Carol Kuhlthau and Ross Todd

- Initiation
- Selection
- Exploration
- Formulation
- Collection
- Presentation
- Assessment
1.17.5 Information Seeking Process

Information Seeking process

- **Initiation**
  - Seeking
  - Feelings of uncertainty are common
  - Awareness of lack of knowledge

- **Selection**
  - Relevant Searching
  - Topic is identified
  - Sense of optimism

- **Exploration**
  - Information
  - Inconsistent information found
  - Doubt, confusion, and uncertainty often increase

- **Formulation**
  - Seeking
  - Focused understanding
  - Confidence increases

- **Collection**
  - Relevant Documentation
  - Relevant information is compiled
  - Sense of involvement and interest

- **Presentation**
  - Information
  - Explanation of knowledge
  - Satisfied or disappointed

- **Assessment**
  - Self-awareness increased
  - Feelings of achievement
Carol Kuhlthau (2007) believes in guidance of the student in every stage of the above information literacy process through K.W.L. Framework. Further, she has developed Extended K.W.L. Framework specifically for information literacy.

a) K.W.L. Framework

- What do I Know? K
- What do I Want to Know? W
- What did I Learn? L

a) Extended K.W.L. Framework

<table>
<thead>
<tr>
<th>What do I Know? K</th>
<th>How do I Find out? F</th>
<th>What did I Learn? L</th>
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1.17.6 Information Literacy and Inquiry Learning Model by Sauce T.Bond (2005)

a) Set the Scene

- List the key words & phrases
- Write the Search Questions using the several key words & phrases

b) Acquire

- Choose the appropriate source
- Select relevant information and find answer
- Validate the collected information

c) Use

- The new information
- Use the prior knowledge to Communicate

d) Evaluate

- The collected information
### 1.17.7 Comparison

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<td>By Eisen Berg &amp; Berkowitz</td>
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<td>1. Task Definition</td>
<td>1. Initiation</td>
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<td>7. Present</td>
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1.18 OBJECTIVES OF THE STUDY

- To identify and assess various types of information needs and information sources used by the Women scientists in the surveyed institutions.
- To study the Information Seeking Behavior pattern of the scientists in the research institutions of the study area.
- To map the research productivity of the scientists surveyed.
- To find out the relationship between socio-economic variables and library information services.
- To know how the information literacy programmes are planned, designed and delivered.
- To determine the impact of information literacy awareness on use of library information services in the surveyed universities, academic and research institutions.
- To evolve the information literacy model for the surveyed libraries based on findings of the study.

1.19 OUTLINE OF THE STUDY

As the Chapter I Introduction gives an overview of the information literacy and its facets, methods, issues and relevance with a background on the study environment, Chapter two Review of Literature given an account of related studies that are existed in this area, Chapter three Research Methodology gives an outline of methods, techniques used for the research with the objectives, hypotheses, and sampling, Chapter four analysis and Interpretation describes detailed analysis of the data as to the objectives of the study along with graphical presentations, Chapter five summarize the Findings, Conclusion and Suggestions.
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