CHAPTER – III
INFORMATION LITERACY: AN OVERVIEW

3.0 Introduction

One of the great truths about modern society is that “information is everywhere”. Information is a pervasive and essential part of our society and our lives. Humans are, at their essence, processors and users of information. Humans have always been dependent upon information to help them make decisions and guide their actions. Increases in the sheer volume of information and the complexity of information systems have come about largely because of advances in information technology. Information literacy is a set of skills and knowledge that not only allows us to find, evaluate, and use the information we need, but perhaps more important, allows us to filter out information we don’t need. Information skills are the necessary tools that help us successfully navigate the present and future landscape of information (Eisenberg et al. (2004).

During the last decade several other terms and combinations of terms have been also used by different authors. Some of them are: 'infoliteracy', 'informacy', 'information empowerment', 'information competency', 'information literacy skills', 'skills of information literacy', 'information literacy competencies', 'information competence skills', 'information handling skills', 'information problem solving', 'information problem solving skills', 'information fluency', 'information mediacy' and even 'information mastery'.

Finnish researcher Savolainen (2003) suggests the umbrella term 'information-related competences' that covers information literacy, media competence and library skills and adds: 'Because new labels describing specific kinds of literacies are continually introduced, reflecting the developments of ICTs, the attempts to develop an exact
classification of information-related literacies seem to be futile. However, in spite of the continuous concern about the term since 1990s, information literacy is still the most commonly used phrase to describe the concept.

Information literacy (IL) as a concept has been formally articulated in the United States since the early 1990s. It appeared as a result of the tremendous progress in information technology and its dramatic impact on information accessibility. With the rapid progress in communication technology, the library shifted its mission from that of a repository of human culture to that of a facilitator of human culture. As a result, our mission as professional librarians has moved from the preservation of knowledge to that of Information literacy advocates (Ashoor, 2005). In its definition, the Association of College and Research Libraries (ACRL, 2000) states that 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.

Information Literacy is the key to information power and is generally seen as a natural extension of the concept of literacy in our information centric society, and information literacy education is the medium required to transform the information society of today into the learning society of tomorrow. IL is an imperative to the pursuit of lifelong learning, and central to achieving both personal empowerment and economic development.

Information literacy is seen by the librarians as a key requirement in accessing and making appropriate use of the vast amounts of information which are now available to students, particularly through the internet. 'Information literacy' has developed in the USA since the late 1980s as a refocusing of 'bibliographic instruction' (the equivalent UK term is 'user education') in academic libraries. The refocusing arose from the awareness of changes in the practice of teaching and learning. An influential
1987 symposium recommended that 'Reports on undergraduate education identify the need for more active learning whereby students become self-directed independent learners who are prepared for lifelong learning. To accomplish this, students need to become information literate (Breivik & Wedgeworth, 1988).

This notion was soon backed up by the report of an American Library Association committee, which defined the information-literate person as one who 'must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.

Information literate citizen will be the building stone of the knowledge society. People will need information skills for the professional, personal and even their entertainment activities. Librarians, teachers, technologists and some policy makers have recently begun to address the need for information literacy training and teaching on all levels of education. Training members of the existing workforce in effective information handling still needs to be addressed in a major way. All people need to be prepared for lifelong learning and teaching individuals appropriate information skills will be a major progression in that direction. Information literacy endeavours are just at the beginning and more work is needed to understand the complexity, long-term effects and importance of preparing people for effective information work (ALA, 1986).

Today's engineering educated workforce need skills beyond the technical knowledge traditionally taught in the post secondary curriculum. In today’s information rich environment, lifelong learning skills have also become extremely important. Students must be able to identify problems, decide what information they need in order to solve the problem, locate the information they need, analyze it, synthesize it and communicate their solution to others (Rader, 2002).
3.1 Meaning and Definitions

Basically, information literacy appears to embody the ability to use information, or possibly the possession of knowledge of information. In order to find out how the concept has come to have its current meaning and to identify what skills and knowledge are required of a person in order to be information literate, meaning and some definitions are given below.

Zurkowski (1974) was the first to use the concept of information literacy: "People trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in moulding information-solutions to their problems." In this definition Zurkowski suggested that: (1) information resources are applied in a work situation; (2) techniques and skills are needed for using information tools and primary sources; and (3) information is used in problem solving.

The concept of information literacy appeared again in 1976 in a paper presented by Lee (1976) at the Texas A&M University library's symposium which considered the future of organizing knowledge: "To be an information literate requires a new set of skills. These include how to locate and use information needed for problem-solving and decision-making efficiently and effectively." Burchinal's definition linked information literacy with: (1) skills that include locating and using information; (2) the use of information for problem solving and decision making; and (3) efficient and effective.

In contemplating the future of libraries and librarians, Owens (1976) suggested a connection between active citizenship and information literacy: Beyond information literacy for greater work effectiveness and efficiency, information literacy is needed to guarantee the survival of democratic institutions. All men are created equal but voters with information resources are in a position to make more intelligent decisions than
citizens who are information illiterates. The application of information resources to the process of decision-making to fulfill civic responsibilities is a vital necessity.

It is apparent that by the middle of the 1980s the advancing information technology had begun to affect the information handling requirements for information literacy. Demo (1986) noted that, along with traditional literacy skills, information literacy forms the common prerequisite for lifelong learning. He also observed that the meaning of information literacy could be explained from different perspectives, depending on whether librarians, educators, or communication experts define the term. He suggested that, of all the existing definitions, one emanating from the field of library user education represented one of the most detailed endeavors to define information literacy in a functionally relevant way.

The number of definitions for Information literacy exist, definition according to CILIP (2005) Information Literacy as part of knowledge or learning which is made up of a series of skills or competencies that must be acquired. The Information literate person cares about the quality of the answer to what he or she is investigating and is prepared to work to guarantee that quality. Information Literacy will mean slightly different things to different communities- it may also require a greater degree of skill or understanding by some communities than others. Information Literacy is relevant and is viewed as an important skill to be learnt and used in primary and secondary schools, in further and higher education, in business, and in leisure.

ALA's (1989) definition of information literacy is the one most frequently used today: To be information literate, a person must be able to recognize when information is needed and has the ability to locate, evaluate, and use effectively the needed information. 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.

Olsen & Coons (1989) also considered information literacy within the wider literacy spectrum; and defined information literacy as understanding the role and power of information, having the ability to locate it, retrieve it, and use it in decision making, and having the ability to generate and manipulate it using electronic processes. In short, information literacy is a necessary expansion of the traditional notion of literacy, a response to the revolution in which we are living.

A report from the Association of College and Research Libraries (ACRL, 2000), presents a set of performance indicators based on five 'standards'. The information-literate student:

- determines the nature and extent of the information needed;
- accesses needed information effectively and efficiently;
- evaluates information and its sources critically and incorporates selected;
- information into their knowledge base and value system;
- uses information effectively to accomplish a specific purpose;
- understands many of the economic, legal and social issues surrounding the use of information and accesses and uses information ethically and legally.

As the technology advanced, authors started integrating the technological facet while defining the information literacy. Even it has been noticed that authors started considering the social, economic and political aspects surrounding information literacy while defining and explaining the information literacy concept.

Bawden (2001), who tried to relate information literacy to the full context of all the other relevant literacies, argue that the term 'information literacy' has been widely and confusingly used in the literature. A number of other related terms have also been
used for the same, or similar, concepts including computer literacy (or information technology literacy, electronic literacy or electronic information literacy), library literacy, media literacy (or 'mediacy'), network literacy (or Internet literacy or hyper-literacy), digital literacy (digital information literacy) and informacy.

Webber & Johnston (2003) defined information literacy as efficient and ethical information behaviour: ...information literacy is the adoption of appropriate information behaviour to obtain, through whatever channel or medium, information well fitted to information needs, together with critical awareness of the importance of wise and ethical use of information in society.

Lupton (2004) defines that information literacy includes, “library research skills and information technology literacy, but it is broader than these. Information literacy is not just about finding and presenting information, but it is about higher order analysis, synthesis, critical thinking and problem solving. It involves seeking and using information for independent learning, lifelong learning, participative citizenship and social responsibility.”

3.2 Information Literacy: Historical Perspectives

The concept was first introduced in 1974 by Paul Zurkowski, President of the Information Industry Association in a proposal submitted to the National Commission on Libraries and Information Science. The proposal recommended that a national program be established to achieve universal information literacy within the next decade. Zurkowski further defined this concept as “people trained in the application of information resources to their work can be called information literate. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in moulding information solution to their problems.”
From the available literature one can agree that the information-literacy movement has evolved from precursors such as library instruction, bibliographic instruction and user education. The phrases “library orientation” and “library instruction” were commonly used in Anglo-American librarianship to name the activity of teaching library use. H. W. Wilson, published since 1921, indexed materials on teaching library use from the period 1930-88 under the heading instruction in library use and then library instruction. In 1988 the phrase was changed to “bibliographic instruction” and this remains the accepted phrase for the activity of teaching library or information use. LISA: library and information science abstracts used libraries: use instruction from 1970 to 1992 and in 1993 changed to two headings (Eisenberg et al., 2004).

The ACRL/BIS Model Statement provides a framework of desired skills for library users. The objectives which describe the general processes used when gathering information,

1. Information Recognition, the process of identifying how information is created and communicated;
2. Information Structure, the organization of information into recorded and unrecorded sources;
3. Information Access, the selection of information using a number of access points and sources, and
4. Physical Access, the actual retrieval of an item from a collection.

Information literacy evolved over a long history of library traditions namely library orientation, library instruction or bibliographic instruction. The trend over the past 30 years has been a shift from the concept of orientation to instruction in the use of the collection and services of a particular library to a set of concepts that encompass principles of library organization, the nature and organization of library resources (both
print and electronic), and processes of information seeking evaluation and communication (ACRL, 2004).

The UNESCO (2006) states that information literacy has evolved beyond library instruction and information-focused programs to the current information literacy. Library instruction emphasizes the location of library materials, while IL is concerned with the process of information seeking and information use competencies. The emergence of the information society, characterized by rapid growth in available information and accompanying changes in technology used to generate, store, disseminate, access and manage that information, which allowed the movement to take origin and prosper. With the increase focus on the concept of information literacy, the role of faculty, library and educational resources in the teaching and learning process has received a wide attention. The librarians are viewed not only as deliverers of information but also as facilitators to help students learn how to approach and use information resources effectively.

The Institute of information literacy states, “Increasingly, faculty creates environments that challenge students to learn about a topic or solve a problem using information resources students have located. This resource-based mode of education has created a greater need to teach students how to access and evaluate appropriate information resources and use them effectively (Behrens, 1994).

The importance of information literacy increased during the late 1980s with the increase of technology, significant expansion in the meaning of the concept compared with that of the earlier decade. Gradually, by the end of the 1980s, it was no longer an embryonic concept. Information literacy had been defined with clarity, and its realm comprehensively described by the identification of the actual competencies, skills and knowledge that are imperative for information handling in an information-permeate,
technologically advanced society. In 1990s, the ALA proposed meaning of information literacy was generally accepted.

Behrens (1994) describes that information literacy had become a major issue in librarianship, since the profession saw in it a way that its members could make a contribution toward a society of lifelong learners. Three main trends are noticeable in the literature of 1990's to date: educating for information literacy is enjoying attention; information literacy is being considered as part of the wider literacy continuum; and librarians are evaluating their role in the information literacy movement.

3.3 Need for Information Literacy Programmes

Information literacy is the ability to locate, evaluate, and use information to become independent life-long learners. Through general literacy one can gain knowledge in a specific subject domain, whilst IL empowers an individual in gaining skills that can serve his eternal and varying information needs and interests for personal and professional accomplishments.

Information literacy is considered as a very essential and survival skill for the new century, the key competency for independent learner, lifelong learning, and the foundation of a literate society. It is imperative for students' achievements and considered a desirable outcome of higher education. The predecessors of Information literacy were involved in familiarising the users with library, its ambience and tools and services for hassle-free retrieval of the needed information. However, in the light of growing recognition to lifelong and self-directed learning, the bibliographic instruction or library instruction is transformed into Information literacy, which emphasizes the use of ICT for information search and retrieval; critically analyse it and duly acknowledge the 'source of information' (physical or virtual) prior to sharing or using it. It equips the learners with the 21st century skills, viz., information skills, critical thinking,
communication, and collaboration for appropriate decision-making and for problem solving.

Abid states “In the next century, an educated graduate will no longer be defined as one who has absorbed a certain body of factual information but as one who knows how to find, evaluate, and apply the needed information”, A student who is 'information illiterate' will have fewer opportunities to cope with the current information age, when compared to ‘information literate students. Henceforth, acknowledging the significance of IL as a thriving and driving force in the information society, the educational institutions need to develop strategies to ensure the inclusion of IL in the curricula through print modules and/or through the integrated online services spearheaded by an academic library (Koneru, 2006).

Within the framework of the United Nations Literacy Decade (2003-2012), in the new Information Literacy Programme of UNESCO, the objectives outlined for IL are to

- foster the development of an information literate citizenry with the technical and critical-thinking skills and abilities needed to identify, acquire, manage and use information to enrich all aspects of their work and personal lives;
- identify and encourage effective practices in IL around the world;
- promote IL through regional approaches and to facilitate exchanges;
- propose innovative curricula about IL; and
- improve cooperation between government officials, researchers, educators, librarians and media practitioners.

The focus of these objectives is to make citizens information literate through effective strategies and practices and integrated curricula, which in turn makes collaboration between academicians, researchers, administrators, and information
communication practitioners (LIS and mass-media professionals) obligatory (UNESCO, 2005).

The UNESCO’s Information for All Programme (IFAP) emphasizes the need to equip the people with skills for accessing and using information as: "IL enhances the pursuit of knowledge by equipping individuals with the skills and abilities for critical reception, assessment, and use of information in their professional and personal lives. It also accentuates everybody should have the opportunity to acquire the IL skills to understand, participate actively in, and benefit fully from the emerging knowledge societies.

As ICT made information environment increasingly complex, educators are realizing the need for making learners engage with the information environment as part of their formal learning processes. Information literacy is generally seen as pivotal to the pursuit of lifelong learning, and central to achieving both personal empowerment and professional development. IL lays a robust foundation, not only for lifelong learning but also for coping with the incessant socio-cultural and technological changes.

As per Koneru (2006), information literacy will play catalytic role to transform the 'information society' of today into the 'learning society' of tomorrow. Owing to its significance in all facets of learning society, library and information practitioners need to re-conceptualize their instructional strategies and adopt e-pedagogy to break down the barriers to learning that are being created unintentionally by c-mode (classroom mode) instructions.

The 1994 Australian National Board of Employment, Education and Training report Developing lifelong learners through undergraduate education notes that ‘learning to learn’ is a major concern of all educational sectors and that It involves the higher order skills of analysis, synthesis and evaluation, the ability to think critically, to
construct meaning and reconstruct understanding in the light of new learning experiences (Catts, 2000). The courses where reflective practice is central inevitably help students develop into independent learners much more readily than those whose focus is on the acquisition of a large body of knowledge.

Information literacy development multiplies the opportunities for self directed learning, as students become engaged in using a wide variety of information sources to expand their knowledge, ask informed questions, and sharpen their critical thinking for still further self directed learning. Achieving information literacy fluency requires an understanding that such development is not extraneous to the curriculum but is woven into its content, structure, and sequence (ACRL, 2000). Information literacy is a validated construct which can be incorporated in the instructional design of programs.

Zhang et al. (2010) explain that advancement of information and communication technology has facilitated vast improvements in developing sophisticated infrastructures, which makes a huge amount of information available to users with easy and flexible access, and also provides a variety of applications and channels for processing and distributing information. However, opportunities come with challenges.

With the advent of Internet and rapid growth of information, the users are faced with a plethora of possible information sources. Not only must they be able to find relevant information, but also they must be able to evacuate those sources for accuracy, reliability and currency. Without proper skills to deal with information as well as the related advanced technologies and applications, individuals suffer from various problems, such as information overload, inability to locate and extract relevant information for their academic studies, in the work place, and in their personal lives. Because of the escalating complexity of this environment, the users must possess
adequate information literacy skills and knowledge to search and process and evaluate information to study and to make decisions and solve problems.

The students attitude towards electronic resources found it apparent that a large number of students are leaving university without the necessary transferable skills to cope in an information based society. Therefore, students need to be information literate to cope with the challenges in their studies and future profession.

There are other challenges arising these days one of them is the problem of plagiarism. It is reinforced by the possibilities of information technology and the Internet. A student’s process of seeing information generally begins with a perceived information need; that is, the student not only lacks the relevant and reliable information to address the problem at hand, but they also know that they lack this information. However, students are highly predisposed to search for information through sources that have worked for them in the past, usually Google and other resources on the free web. As we all know, you will always find “something”. Hence, IL will address these issues of copyright and ethical use of information, how to find reliable scientific information and how to evaluate the accessed information and also ability to judge whether their search results are useful for their topic or not.

Information literacy is one of the critical digital-age literacy areas for higher education. The students need to be trained to be information competent in this ever changing information environment. Engineering is a fast developing field as a result of scientific and technological advancement. Thus, the engineering students need to be independent learners who can deal with the vast amount of information and also able to locate, retrieve, evaluate, and use relevant resources to address information need. To be able to do this, the students must have the appropriate information literacy skills.
3.4 Information Literacy and Engineering Education

At the beginning of the 21st century, enormous changes are occurring in the field of higher education in general and engineering in particular throughout the world as a result of new information and technological developments. These changes are affecting every segment of society and all levels of education. The faculty and teachers need to acquire new sets of technology and electronic information skills in order to effectively prepare and teach students the knowledge base in all disciplines as well as relevant information skills. New learning communities are evolving based on the necessity that learning must be continuous at all levels and at all ages, and must include resource-based learning. (Martin & Rader, 2003)

Information literacy requires sustained development throughout all levels of formal education, primary, secondary and tertiary. In particular, as students progress through their undergraduate years and graduate programs, they need to have repeated opportunities for seeking, evaluating, managing and applying information gathered from multiple sources and obtained from discipline specific research methods (Bruce, 1994). Information literacy education should create opportunities for self-directed and independent learning where students become engaged in using a wide variety of information sources to expand their knowledge, construct knowledge, ask informed questions, and sharpen their critical thinking.

The importance of information literacy education lies in its potential to encourage a deep, rather than surface learning, and in its potential to transform dependent learners into independent, self-directed, lifelong learners. Without information literacy individuals are condemned to lack of information, dependence upon others for access to information, and even to acute levels of information anxiety.
As per Owusu-Ansah (2004), in higher education, the role of Information literacy programme is to create lifelong learners, and the path to that goal is through information literacy skills. Main goals of information literacy instruction are to teach students how to learn and how to become independent learners. These two goals represent the “core mission of all education.” In recent years, many educators have realized that producing information literate students is a goal that they “can neither ignore nor openly refuse a need to achieve.” Educators across campus recognize that information literacy skills are fundamental to the development of competent students and graduates.

Developing the lifelong learners is central to the mission of higher education institutions. By ensuring that individuals have the intellectual abilities of reasoning and critical thinking, and by helping them construct a framework for learning how to learn, colleges and universities provide the foundation for continued growth throughout their careers, as well as in their roles as informed citizens and members of communities. Information literacy competency extends learning beyond formal classroom settings and provides practice with self-directed investigations as individuals move into internships, first professional positions, and increasing responsibilities in all areas of life. Because information literacy augments students’ competency with evaluating, managing, and using information, it is now considered by several regional and discipline-based accreditation associations as a key outcome for college students (ACRL, 2000).

Briggs & Skidmore (2008) say that the higher education is essentially about information, finding it, understanding it, working with it, manipulating it, discussing it, communicating it, disagreeing with it, disproving it, and replacing it with new information. The present higher education practices have come under scrutiny in the Internet age as the availability of information explodes with the addition of every new database and every new method. In real terms, these changes are perhaps most visible in
a college library, which is no longer just a physical collection of books but rather an access point for a variety of information available in a multitude of formats. Since information storage and retrieval have become so complex, it seems only natural that the efforts to teach a new generation of information users should also gain in intricacy and sophistication.

At the engineering colleges, collaboration between the librarians and faculty members should be instinctive; both can help in improving their skills, background, and understanding of the students abilities and needs to bear on the development of information fluency on the college campus. The added technological expertise of the modern librarian, coupled with the opportunities for online learning in engineering education, have resulted in a conductive climate for exploring new methods of teaching information literacy skills.

Across the world, educators in professional education in particular engineering education contexts have been developing strategies and policies for designing learning opportunities that will enable learners to take advantage of the information and communication infrastructures available to them. Learning opportunities that enhance information literacy not only make use of information and communication infrastructures, but are designed to bring the information practices, that are effective in professional, civic and personal life into curriculum. Such opportunities make it possible for learners of all ages to experience the power of effective information practices. When reflection on learning to be information literate is added to the experience of information literacy, students are helped to recognize the transferability of the processes involved to everyday life, community and workplace contexts (Bruce, 2004). The information literacy practices may vary somewhat across disciplines, but they clearly underpin the
academic and professional practices in, as well as underpinning informed civic responsibility.

Despite the argument that technological advances have made an access to information easier, there is an ongoing concern that most of the undergraduate students are still not becoming information literate, that they cannot retrieve, evaluate and select appropriate sources of information required by them for problem-solving and decision-making in the study and in society generally. It is also found that the students do not understand the structure or purpose of different sources of information, and cannot critically evaluate the information they retrieve. These concerns are even more imperative now than in the past because the amount of information that growing exponentially.

The solid information literacy skills are desirable across all the disciplines, including engineering. Today’s engineering educated workforce need skills beyond the technical knowledge traditionally taught in the post secondary curriculum. In today’s information rich environment, information, problem solving and lifelong learning skills have also become extremely essential. The students must be able to identify problems, decide what information they need in order to solve the problem, locate the information they need, analyze it, synthesize it and communicate their solution to others (ALA, 1989).

Using information for problem solving, analysis, and synthesis are all skills that fit relatively and neatly into the course. The communication and information research skills, however, are more difficult to integrate into courses that are already very demanding. Nonetheless, they are critically important skills for which techniques and strategies must be planned and developed. Information is changing so quickly that
graduates will not succeed without the competencies and information skills necessary to enable them to acquire needed information readily and easily.

### 3.5 Effective Methods of Information Literacy

IL delivery methods are most effective for improving the information skills of students at an introductory, undergraduate level, using the cognitive outcomes (measuring changes in knowledge). The cognitive outcomes may be at varying levels, from simply remembering facts, to applying what was taught in a new situation, to creating new content. It should be noted that the cognitive outcomes are only one aspect that may be considered when determining the success of an information literacy program. Behavioural (measuring changes in actions) and affective (measuring changes in attitudes or values) outcomes are other aspects that may be considered (Koufogiannakis & Wiebe, 2006).

Grecian & Kaplowitz (2001) report a long list of methods including signage, maps, site maps, kiosks, guided tours, self-guided tours, virtual tours, exhibits, flipcharts, backboards, whiteboards, overhead transparencies, presentation slides shows, slides/tapes and video tapes, point-of-use guides, pathfinders, exercises, computer assisted instruction, reference questions, individual research consultations, course-integrated or standalone one-shot group sessions, formal courses, discussion boards, chat, e-mail/listserves, and web pages/sites.

The overwhelming majority of studies were conducted in the United States. Study used the following Teaching Methods:

- **Active Learning (AL)**: Students are actively engaged in their own learning, with the instructor taking on a facilitation role (e.g., problem based learning)
- **Computer Assisted Instruction (CAI)**: A computer is used to deliver the instruction directly to the student. (e.g., Web-based tutorials)
- Learner-centred instruction (LCI): Focus is on the individual student’s unique learning needs. (e.g., individual term paper counseling).
- Self directed, independent learning (SDIL): Learning in which the individual has primary responsibility for his or her education. (e.g., workbooks)
- Traditional instruction: Instructional material is transmitted to students from teachers, and is a passive method of learning for students. (e.g., lecture, demonstration) (Koufogiannakis & Wiebe, 2006).

There is sufficient evidence to suggest that CAI is as effective as TI. The evidence also suggests that both TI and SDIL are more effective than no instruction. Additional comparative research needs to be done across different teaching methods. Studies comparing active learning (AL), CAI, and SDIL would greatly enrich the research literature. Further studies utilizing appropriate methodologies and validated research tools would enrich our evidence base, and contribute to the growth of knowledge about effectiveness of particular teaching methods (Koufogiannakis & Wiebe, 2006).

With the migration to electronic information, the librarians are shifting the bulk of IL programmes to an online searching using the World Wide Web. Based on the various types of users, different modes of instruction training will be designed. Emphasis will be on revising existing I L Programmes to provide users with appropriate information skills. Traditionally academic libraries have adopted the following ways to provide IL to the users:

Introducing the users to the general techniques of library usage and services and facilities available and to the organize library tours to make the user familiar with the layout and structure of a particular library. During instruction the library staff delivers a lecture, conducts individual instruction or small group instruction in which it introduces
the program, demonstrates the use of the catalogue and shows readers how to access the self paced on-line tutorial. The readers work through the library catalogue unit of the tutorial and also complete an exercise.

But due to an impact of IT on the library resources and services, libraries have adopted new methods to introduce the users to electronic information resources and services. The new trend in IL delivery methods consist of Computer-Assisted-Instruction (CAI), library staff demonstrating CD-ROM, Online / web-based databases, and searching the Internet using search engines and subject gateways. A lecture by library staff called researching a topic is another great motivation for readers to appraise critically the material they find, especially information found on the Internet. It also conducts Audio-Video lecture, special promotional activities and scheduled workshop/seminars.

Malone & Videon (2003) explain that educational techniques - such as tours and demonstrations, active learning, problem-based learning, social or community-based learning, self-directed or independent learning, and action learning can all be adapted for the range of traditional, electronic, and virtual learning environments. In each environment, it is important to consider what array of approaches to instruction - such as formalized classes during the course time, voluntary-attendance workshops, online assistance, and one-on-one consultations - provide the most effective support for learners. The approaches for the development of effective library assignments, resources, and tutorials in print and online deserve more concentrated research. Clearly, there is no “one size fits all” model program for library instruction and no single delivery method has been established as the best one. Every method has its own advantages and disadvantages.
3.6 Impact of Information Technology (IT) on Information Literacy

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, the information literacy (IL) is also described as the overarching literacy essential for twenty-first century living.

Today, IL is inextricably associated with information practices and critical thinking in the information and communication technology (ICT) environment. The information literacy is conceivably the foundation for learning in our contemporary environment of continuous technological change. As information and communication technologies develop rapidly, and the information environment becomes increasingly complex, educators are recognizing the needs for learners to engage with the information environment as part of their formal learning processes. Making information and information technologies available to the world is not enough. Our education systems need to ensure that today’s learners are empowered to learn and to take their place in the learning society (Bruce, 2004).

Dangani & Mohammed (2009) say that “Just as 16th century navigators were required to read the stars and understand the tides to find their way, today’s students must learn to become information navigators, finding their way through print, graphic, electronic, and visual media to discover and interpret relevant information. They must become critical thinkers and analyzers using the technology to access, interpret, and evaluate the quality and appropriateness of the information they have discovered. And, as navigators of old drew maps to share what they found with others, today’s students must learn how to create and share knowledge using all the forms of media and
telecommunications to communicate their ideas, engage in discourse, and solve problems.”

These ICT developments have revolutionized the use of libraries and library Information Literacy programmes. Libraries will be radically altered, as new modes of storage and dissemination of information become available. Due to proliferation of electronic resources and the increased use of the Internet as an information source, many students today are over-reliant on search engines such as Google, to find information when researching topics. They often overlook quality academic resources available from libraries.

As access to the, CD-ROM databases, Online Databases, e-journals continue to grow, so does its complexity. Artificial intelligence and expert systems will facilitate more user-friendly and human-machine interfaces. Natural language questions will replace keyword and Boolean searching. The need for training and education of users will grow, and librarians will find themselves to be the "information educators" on campus. These librarians will be responsible for understanding and using the various electronic media of which the library of the future may solely consist. As the librarians’ roles will become more expansive and complex, they will have to be active learners who use and apply the resources they teach. They must keep pace with the changes of the Information Age, with the changes in our society and with technology. The challenge of the future is not how to access some or enough information, but how to use and manage all this information in an effective way. The engineering college libraries are no exceptions for these challenges, since engineering students need to deal with a variety of resources in different formats (Rader & Coons, 1992).

The following are the ICT factors, which have influenced the change in the Information literacy programmes.
1. **Technological Developments:** The storage media of information are also seen innovation from magnetic tape to CD-ROM, DVDs etc. The attractive benefits like less space, quick access and 24x7 availability of information influenced libraries to metamorphose.

2. **Electronic Publications:** Information Technology or more pin-pointedly the Internet has changed the trend of publication. The wide use of technologies enforced the traditional publishers to go for electronic forms to keep themselves in the market. The fastness in publication and review leads to better version of the work. Therefore, to acquire the same library has to go for digitization.

3. **Increase in usage of Electronic Information:** The rate of electronic information users is doubling every year. Now the Internet based digital libraries are providing full text access to books, theses and dissertations. The distance from the library to home / work place is no longer a barrier.

4. **New Delivery Techniques:** The instant messaging, Web 2.0 tools, online/ web based services, web pages etc. have emerged as new information delivery techniques & tools. These avoid errors of transcription, reduce the time and cost involved, provide flexibility of timings and overcome barriers of distance.

   The Information & Communication Technologies have changed the complete scenario in the academic libraries. The impact of moving from text-based learning to resource based learning will involve a heavier use of library materials and a demand for more and varied media resources, including print and non-print. Now days, library has become the centre point of resource-based learning and the role of a librarian is changing radically with the shifts of education paradigms. The new paradigm emphasizes the empowerment of users and encourages to them to take control of their own learning. The
availability of a huge quantities of information coupled with different delivery forms has increased the complexity of finding and selecting relevant, high quality information.

Now the challenge before the libraries, particularly the engineering college libraries, is to provide effective information literacy programmes and improved levels of service for greater information access, while coping with the pace of information and communication technology. Hence, the libraries need to be more refinement in the course content and methodology used, owing to the growth of electronic and web-based information, the changing socio-economic and educational demographics.

3.7 Information Literacy Scenario at International and National Level

The information literacy movement has emerged in the last twenty years as a field of academic inquiry and a focus of professional practice in the wake of notions of an information society, and an information environment rapidly moving from print to digital; from local to international; from secure to uncertain; from poverty to overload and from service to self service. In addition, it has been stimulated by concerns about the impact of the explosion of information and advances in information technology on individuals, societies and nations. The growth of new technology, especially the Internet, has an enormous effect on the library service provision. The print based resources of the 1960s and 1970s have, in many ways, given way to the electronic full-text, on demand information retrieval of the new millennium (Todd, 2000).

3.7.1 Information Literacy International Level

Many projects have also been under taken by academic institutions worldwide on information literacy. The UNESCO co-sponsored information literacy colloquia and meetings were attended by over 100 experts from different countries. A large number of institutes of higher learning has undertaken information literacy projects to develop information literacy competency standards, models, frameworks etc. and also IL skills
for their students. Library associations have also played an effective role in supporting Information literacy programs. In 1993, at the IFLA Conference in Barcelona, Spain, a round table on user education was proposed. The subsequent creation of the IFLA round table provided an established forum for librarians from around the world to share expertise on user education and Information literacy.

The Information literacy growth story in the developed countries are the inspiring indications to a developing country like India and even to other developing countries for that matter to catch up with the main stream. Professional associations, organizations and institutes of higher learning have brought out voluminous work in developed countries. Enormous research has been carried out in the developed countries especially in USA, UK, New Zealand, Australia and Mexico. These countries have brought out the finding in the form of books, articles, and reports and also developed competency standards, models and policy guidelines. It is noticed that the collaboration between the professional organizations and the universities in developed countries has helped a lot in bringing out the standards and performance indicators to judge the Information Literacy competency of the students.

A. United States

Information literacy has become a well-established educational goal throughout the United States. Associations and institutions have defined it, written tutorials to teach it, developed standards, rubrics and tests to assess it and the librarians have devoted entire careers to helping their users achieve it. In 1989, the American Library Association’s Presidential Commission on Information Literacy (1989) defined an information literate person as “one who is able to recognize when information is needed and who has the ability to locate, evaluate and effectively use the needed information.” In 1990 under the leadership of Patricia Breivik, the National Forum on Information
Literacy (NFIL) was formed. The Forum is broadly based and has more than eighty-five organizational members who represent educational, business, labour and social organizations to promote international and national awareness of the need for information literacy and to encourage activities leading to the acquisition of information skills.

The Institute of Information Literacy (NILI) was established in 1997 under the auspices of the Association of College and Research Libraries (ACRL) to assist. In 2006, the ALA, ACRL & STS Task Force on Information Literacy for Science and Technology developed Information Literacy Standards for Science and Engineering/Technology (2006) for students in science and engineering/technology disciplines who must access a wide variety of information sources and formats that carry the body of knowledge in their fields.

Singh & Klingenberg (2012) explain that the land grant pattern universities in US already have courses on developing information competency of students integrated into their course curriculum. Besides there are other good examples of information literacy programmes at California State University, Florida International University, University of Wisconsin, etc. Initiatives in some other universities, viz., Syracuse University, Massachusetts Institute of Technology, Yale University, Stanford University, etc.

B. Europe

The information literacy movement in European countries, similar to other countries has evolved from precursor such as, bibliographic instruction, library instruction, user education etc. Although the majority of information literacy initiatives and programmes in Europe have been initiated in recent years, the academic librarians in Europe have been involved in user education / library instruction for many years.
From 1994-1997 the European Union funded the EDUCATE (End-user Courses in Information Access through Communication Technology) project involving universities from Ireland, Sweden, France, Spain and the United Kingdom under the leadership of Chalmers University. The collaborations within Europe resulted in two Web-based Into Info programs to teach information literacy in seven subject areas (architecture, chemistry, energy, electrical and electronic engineering, environmental science, medicine and physics). During 1998-99 the DEDICATE (Distance Education Information Courses with Access Through Networks) project funded through the European Union Telematics for Libraries Fourth Framework, developed cost-effective information skills courses for distance education involving nine European countries (Virkus 2003).

B.1 United Kingdom

Rader (2002) describes that in the UK academic and school librarians have been actively involved in developing theories and programs related to user instruction and information literacy. The polytechnic universities and schools in particular have experimented with and set up a variety of information skills instruction programmes. Among the different methodologies used have been mediated instruction packages and computer-assisted instruction modules. There are two main groups working for development of information literacy in UK, SCONUL (1980) working group on information literacy and CILIP community service group information literacy group.

In 1998 the SCONUL (Society of College, National and University Libraries) created a task force to prepare a statement on information skills for higher education. SCONUL also works to improve the quality and to extend the influence of the libraries in higher education in the United Kingdom. It proposed seven sets of skills developed from a basic competence in library and information technology skills. The majority of
academic librarians in the United Kingdom are engaged in some type of teaching of information skills. The SCONUL vision for 2005 had stresses more on the development of Web portals, managed information environments and formal partnerships.

Universities in UK such as the Cranfield University, the University of Sheffield, and the University College Northampton are using the SCONUL guidelines. Other British universities are utilizing the virtual training sites, online modules, tutorials, distance education modules, and a variety of other modes of instruction to teach students appropriate information skills. In addition to these collaborative efforts, there are other initiatives like Northumbria University conducted an interesting research project on JISC User Behavior in Information seeking: Longitudinal Evaluation of EIS and in 2001 the Cardiff Universities adopted an information literacy policy with the institutional mission to help integrate the information skills instruction into the curriculum and to create a campus-wide information literacy policy. The report of National Committee of Enquiry into Higher Education (the Dearing Report, 1997) had emphasised the importance of skills which are key to future success of graduates on whatever they intend to do later in life. The Committee identified a list of four skills: (a) communication skill; (b) numerical; (c) use of information technology, and (d) learning how to learn.

B.2 Germany

Homann (2003) explains that in Germany, Information literacy is fast catching up and is an important topic of discussion for the German academic librarians. Few pioneers raised the topic in late 1990s but no active pursuance was seen in this area. The first modular teaching approach was developed in 1996-97 at the University Library of Heidelberg. The programme involved small teaching units (1-2 hours), complementary online tutorials, and teaching modules integrating small curricula. The year 2000 saw project-oriented approach to an information literacy programme developed by the
Dannenberg University of Applied Sciences, Hamburg. Basically the approach was based on constructive and subject-oriented pedagogy, integrating information literacy with content of other subjects.

C. Australia

In Australia, information literacy is closely associated with the concept and goal of lifelong learning and many key documents and policy statements advocate the central role of information literacy in the lifelong learning process. Information literacy is a well developed and accepted concept in Australia.

Information literacy has been an important concern at the University of Wollongong since the 1970s. In 1989, the university introduced a computer literacy policy and a new emphasis on information literacy was initiated three years later. A Working Party on Information Literacy was established in 1995 and an Information Literacy Policy was formulated in 1997. Much has been accomplished in terms of integrating information skill teaching throughout the curriculum (Wright & McGurk, 2000). The librarians at the University of South Australia have a mandate to ensure that students achieve information literacy. At the University of Technology in Sidney, students receive information skills instruction as part of their compulsory course work. At the Queensland University of Technology, the librarians teach an intensive, advanced course on information retrieval skills to graduate students.

The Australian Information Literacy Standards are based on the United States standards. The United States standards were reviewed at a workshop by the University of South Australia for the Council of Australian University Librarians (CAUL). The scope of Australian standard is obviously wider covering not only to the students but also the faculty member and non-academic setting (AARL, 2001). In 2003, the standards were further revised based on recommendations and experiences of academics and librarians.
In second edition CAUL was renamed as the Australian and New Zealand Information Literacy Framework (ANZIIL) and essentially provided four guiding principles and more comprehensive details for each of the six core standards.

**C.1  New Zealand**

In New Zealand, the Library and Information Association of New Zealand, Aotearoa (LIANZA) has been working on the concept of information literacy since the 1990s and developing existing user education programmes to achieve broader outcomes. In 1998, LIANZA developed a task force on information literacy to identify core issues, challenges and opportunities facing LIANZA in the area of information literacy and how this could be accommodated in the LIANZA structure. There have been several notable initiatives and influences within the library profession of New Zealand. The move from user education to information literacy involves two pronged approach from librarians. Internally, user education programmes had been refined and developed and externally the librarians are looking to form partnership that will create broader information literacy outcomes (COMLA, 2000).

**D. Africa**

Rader & Martin (2003) explain the IL scenario in Africa. The Academic librarians in several African countries have been working on preparing their students for the global information environment by teaching them information skills. At the University of Botswana librarians have integrated information skills instruction throughout the curriculum. In South Africa, in recent years academicians and librarians have co-operated to improve the learning process for all populations, and information literacy instruction has been used as part of the preparation for lifelong learning. A noteworthy project with help from the Ford Foundation and Readers Digest Foundation...
has helped the Western Cape librarians develop curriculum-integrated information literacy programmes in academic institutions.

E. Asia

E.1 China

At the beginning of this century, the information environment is greatly changing throughout the world, and China is no exception. The Chinese central government has made it a policy to promote industrialization in relationship to information. Thus, information education has become one of the crucial issues. In China, more people who deal with education, library, and information science, are involved in discussions on information literacy and are broadening their studies and practices in this arena. Since the early 1980’s the Chinese government has supported and encouraged the teaching of library and information skills in academic institutions.

Sun (2002) reports that the library of Chinese Academy of Sciences has done impressive work on information literacy and has a wealth of experience. The information skills instruction programme at the Tsinghua University serves as a good model for the future. It includes forty-four research institutes, nine engineering centers and major national laboratories. Seven credit courses in information literacy are taught annually to the undergraduate and graduate students. Other courses are taught to graduate students by the librarians on information and document preparation for thesis work. In addition, the librarians collaborate with their academic colleagues to address information retrieval needs on campus.

E.2 Singapore

In Singapore the government is promoting the building of a knowledge-based society making it mandatory that people be prepared for work in the information environment, to have problem solving skills and to be information literate so they can be
productive in developing the country’s economy. In Singapore, information skills are
taught in primary and secondary education as required by the Ministry of Education.
This initiative was begun in 1987 as a pilot program and resulted in the publication of
Information Skills in 1991. The Division of Information Studies at Nanyang
Technological University investigated the information skills of undergraduate and
graduate students, particularly in engineering, and discovered particular difficulties
students encountered in using information effectively. This information was used to
incorporate information literacy instruction into the undergraduate curriculum
(Hepworth, 2000).

3.7.2 Information Literacy in India

Information Literacy enables people to interpret and make informed judgments as
users of information sources and it is also a part of the basic entitlement of every citizen,
in every country in the world. It is observed that the awareness about information literacy
is gaining importance in India. The academic libraries in India have not yet realized the
true nature of information literacy as one of the core skills that required facing the
challenges created by electronic information environment. Hence, the information
literacy in the libraries of the universities and colleges in particular engineering college
libraries in India is yet to make a right stride. Information literacy aims to develop both
critical understanding and active participation and there are no specific standards, reports
and policy guidelines for Information Literacy at national level brought out either by
Government, professional associations or the institutes of higher learning.

A. Information Literacy Programme at School Level

Initiatives have already been taken at the School level. In Navodaya Vidyalayas
the 6th class to 12th class students have a unique experiment wherein each of the students
is to prepare a project report using the information resources of the respective libraries.
The syllabus is designed to provide opportunities to use information and IT to facilitate learning process. And in many classes, how to use library resources, like, atlases, encyclopedias, dictionaries, periodicals, etc. are usually taught and demonstrated. INSDOC (Now NISCAIR) developed an instructional kit entitled "Let us find out", meant for the use of libraries by school children. Many Schools have library hours as a part of the curricula, mostly to educate pupils for use of library for the class work and projects. Similarly, in many public schools, convent schools and government schools, library classes are allotted for every class of primary, secondary and senior secondary level, where information literacy competency is provided (Ghosh & Das, 2006).

B. Information Literacy in Higher Learning Institutions

In the institutions of higher learning in India, user education, library instruction and bibliographic instruction programmes are provided. In universities for research degree programmes, a course on research methodology is included where library research techniques are also included. Some orientation programmes and refresher courses also impart information literacy competency to the learners. The Universities also conduct from time to time the orientation programme to their academics for use of electronic resources. The Indian MEDLARS Centre of National Informatics Centre conducts a user-training programme in every four month on their information products and services, like, IndMed databases, medIND open access journal literature, OpenMED open access archive, UNCat union catalogue databases, etc., which are designed mainly for the health professionals and the health librarians. In corporate & R&D organizations the information literacy competency is a very crucial role. The researchers and knowledge workers are being taught about the latest discipline oriented information resources available within the organizations and outside the organizations (Ghosh & Das, 2006).
As per Singh & Klingenberg (2012), the role of university libraries has been limited to orientation and library instruction. However, the agricultural university libraries in India are already ahead with their user education programmes focused on teaching information literacy skills to Postgraduate and PhD students. The agricultural universities of India follow the land grant pattern colleges of American Universities of Agricultural Sciences. User education was considered important and was made part of the curricula to teach the students on use of library and its resources and to develop their information skills. These courses are generally of one or two credit hours and integrated into the academic curriculum.

Nyamboga (2004) suggests that the teaching faculty and library staff should share this program in order to make it successful in a real sense. A few examples in this regard are: the experiment at the Centre for the Study of Social Systems, JNU carried out by Girja Kumar and P.K. Jayaswal in 1984-85; the use of Faculty Workshop Experiments Social Welfare Information Learning Packages and Mechanical Engineering Information packages for the teaching was highly structured and problem oriented. In many of the short-term specialized training program conducted by the SIET, Hyderabad, for potential entrepreneurs, close involvement of teachers and library information specialists was found essential in the completion of the project/feasibility reports. There has also been Mathur's Experiment of a Personalized System of Instruction at the Indian Institute of Technology (IIT), Delhi in 1978.

Some of the institutions like the IITs are using audio-visual methods to orient their users. However, the other methods are also followed. However, the University of Hyderabad Library conducts user-training sessions in small groups with hands-on experience for all users about the OPAC. This university library, in contrast with the others, conducts training programs throughout the year with new students being trained
at the time of joining the institution as part of the orientation program. The institutions which are subscribing to the electronic resources, on consortium basis or individual basis the publisher or vendors of electronic resources conduct user training programmes for use of those resources. But the majority of academic libraries have not even paid sufficient attention to provide effective Information literacy programmes for guiding their users to use information effectively and efficiently in this ever increasing electronic environment.

Most of the academic libraries in India particularly engineering college libraries have now realized the importance of Information Literacy in their services, but in practice no academic institution is in a position to provide regular Information Literacy programs in a real sense for the benefit of all their users. A number of academic college libraries organize information literacy programme for new students at the beginning of the academic year. With limited time and a large number of students, this programme provides an introduction about the library, about the various resources available in the library, services provided by the library etc. And also give orientation on how to use the library and its resources. Library tour is the preferred method of use in almost all libraries.

3.8 Recent Trends in Information Literacy

Providing information literacy programmes to the users is not a new role for the library and information professionals in the academic libraries. The librarians have been doing so in a general way by orientation or user instruction at the beginning of the academic session. There has been a gradual but steady expansion in the information literacy as vital concept during the last three decades with a goal to impart skills and knowledge that enrich and empower students in their learning and research engagements. Although the concept of information literacy has its roots from these user oriented
programmes, it has not practised in real sense as a powerful tool for making users information literates and gained less attention from the working LIS professionals in particular the traditional or conventional universities, and other Technical and engineering institutes of India. The situation of agricultural universities in the country is different, as teaching library or user education had been integrated into the course curricula.

The Librarians are changing information literacy instructions as the focus on instruction shifts from print to the electronic resources. Information literacy has emerged to enjoy widespread, though not universal, acceptance in academic libraries in the last twenty five years. Using learning theories and additional knowledge from education, psychology and other disciplines, the librarians have developed sophisticated Information literacy programmes for the users in this electronic information society. Advancing beyond an earlier emphasis on library orientation, Library instruction, and individual research tools, these new approaches focus on concepts such as information structure and research strategy and use innovative learning approaches such as guided design and web base instructions, tutorials. Most of the instructional programs, however still focus on the use of research tools in the library, whether it is print or electronic format.

In the last decade, in particular training about electronic information retrieval has widely spread in the institutes of higher learning. This is due to the availability of abundant information in various forms and formats such as CD-ROMs, DVDs, CD-ROM Databases, e-journals, e-books, Online Databases etc. Efforts to incorporate electronic media into instructional programs have focused on CD-ROM instruction, computer-assisted instruction, and online instruction. Recently, efforts are also made to provide a web-based library instruction with the help of subject guide to reliable Internet sites for
research purposes on the library home page and also the development of web based on line tutorials linked to the library web site so that the users have immediate access to instruction.

Today’s young generation is growing up in a digital world. Wilson (2004) appropriately described -“Today’s digital kids think of information and technology akin to oxygen. Interactivity is a hallmark of their lives. They live in a collaborative world that does not exist for most of us – hyper-linking, gaming, multi-tasking, always on, always interacting.” As “digital natives”, they are accustomed to being completely connected to each other via cell phones and the Internet all the time. When they need information, they want it immediately with little tolerance for delay. They have a strong preference for online sources, but may not be aware of the types of information available from the library’s electronic resources, how it is organized, how it can be retrieved or how the quality of the information can contribute to their information needs. Instead, they turn to search engines for the sake of convenience and ease of use. However, the first few items in the result list of search engine may not be the most relevant or authoritative information available (Li et al., 2007).

Lippincott (2005) pointed out that the main issue for librarians is to find ways to help students “learn about digital information, including important policy issues in this arena, such as privacy and intellectual property”, and “consider updating some of their methods for teaching students”. For example, the librarians incorporate information-seeking skills into gaming technology, or “develop more visually oriented instruction aids” such as using blogs as a mechanism for students to exchange information on resources particularly valuable for their work, electronically offer one-on one services tailored to students’ characteristics, etc.
Teaching students how to use quality library resources and evaluate information is the role of the librarian. Nowadays most of the libraries are adapting web-based technologies, Web 2.0 applications, and Mobiles technologies in their information literacy programmes to promote active learning for the young generation. It is noticed that in current scenario libraries are taking advantage of modern communication and information technologies to open up their contents to provide effective IL programmes to the users and it is crucial in our digital world.

Collaboration has become a twenty-first-century trend. The need in society to think and work together on issues of critical concern has increased. Hence, collaboration in working with faculty to address IL skills to students has also become an important element. The librarians in collaboration with the faculty in an instructional team reflect a change in the role of library professionals. Collaboration is a trusting working relationship between two or more equal participants involved in shared thinking, shared planning and shared creation of integrated instruction. The key elements in collaboration work to improve student outcomes such as shared thinking, shared problem solving, and shared creation of integrated instruction. In addition, several attributes needed for effective collaboration such as collegiality, respect, and trusts are also discussed. In addition, two enablers and inhibitors, time and administrative support, are discussed in relation to collaboration (Montiel-Overall, 2005).

Many of the earlier models for teaching library instructions were based on the teaching process. Currently, emphasis in higher education has shifted from teaching towards facilitating learning. Learning can be described as a process of change in which the process and the outcomes vary in different people. Learning is measured in terms of the quality of understanding and its relevance to the learning situation. It is based on the assumption that knowledge is relational, where the relation is between the knower and
the object. This provides valuable insight for the teaching/learning situation, which is dependent not only on the knowledge of the instructor, but also on the way in which that can be experienced by the students.

Leonard (2002) describes that in the traditional approach of learning, teachers are considered the source of knowledge and students are recipients, while constructivism advances the idea that learning requires engagement with others. Students work in groups to solve real-world problems together. In the active learning paradigm of constructivism, the instructor becomes a catalyst, a coach that facilitates solving a particular problem. With constructivism, learner inquiry and discovery, learner autonomy and self motivation are critical elements to the success of the learning process. In the constructivist approach, the focus of teaching and learning is on how to help learners construct, rather than be controlled by learning experiences. The constructivist approach to learning is more important for libraries in the information age.

3.9 Summing Up

Information Literacy is fundamental to developing people into successful, lifelong learners and is being increasingly recognized as core learning and working competence and a critical survival skill in the information age. During the last century it became very clear that the acquired knowledge through the regular education up to the doctoral degree and perhaps a few additional education and training courses in adult life are not enough. In a dramatically changing world in which new breakthroughs and developments are continuously taking place it is imperative that an individual continues learning as long as it is physically and mentally possible in order to live a productive and rewarding life. Harnessed together, Information Literacy and Lifelong Learning substantially improve identifying and fulfilling one’s professional goals and aspirations.
as well as one’s effective participation in social, cultural and political context (ALA, 1989).

Information literacy is the key competency for the information age. It is valuable as more widely accepted concepts such as computer literacy and media literacy. Every person has a fundamental right to information literacy and the information access. It is one of the important services of the academic library. It is designed to equip users with information skills that will enable them to make efficient use of library resources and services. The increase in student population, coupled with rapid advances in ICT, has necessitated changes in Information literacy programmes. The librarians need to team up with other professionals to follow new and effective methods to supplement traditional methods of IL programmes.

Now a day’s most of the libraries are adapting web-based technologies, Web 2.0 applications, and Mobiles technologies in their information literacy programmes to promote active learning for the young generation. In this current scenario engineering college libraries need to take advantage by adapting modern communication and information technologies to open up contents to provide effective IL programmes to the users and as it is crucial in this digital world.

Collaboration between the academic and library staff is essential for the effective planning, designing, development and delivery of training and resources to assist students in the development of information literacy. Information literacy is an essential graduate attribute, and libraries are the principal providers of the relevant discipline knowledge and information resources. However, students normally complete their study in the context of an academic course offered by a faculty or school. Hence both areas must cooperate to deliver these skills to the student (Orr, 2001). Modern learning theories have also influenced the educational process. In order to move towards
information literacy education, it is necessary to change the conception of the educational role of the academic libraries.
References


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