CHAPTER I

INTRODUCTION

1.1 Concept of ‘Information Literacy’

The term Information Literacy was first introduced by Paul Zurkowski in 1974 in a proposal submitted to the National Commission on Libraries and Information Science. According to Zurkowski (1974) (as cited in Eisenberg, Lowe & Spitzer, 1998), “people trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilising the wide range of information tools as well as primary sources in molding information-solutions to their problems. Since then the term has taken roots both within and outside the field of library science throughout the world. Indeed, since 1974 information literacy has been an area of increasing interest to librarians and information professionals and there is a huge amount of literature on this topic. However, majority of the publications have come from the industrialised, English speaking countries, especially from the United States and Australia. Information literacy is generally seen as pivotal to the pursuit of lifelong learning, and central to achieving both personal empowerment and economic development. Information Literacy is a key component and contributor to lifelong learning (Ramesh Babu, 2008).

1.1.1. Genesis of the term ‘Information Literacy’

Librarians have tried to help library users to locate and find information under the labels ‘library instruction’, ‘bibliographic instruction’ and ‘library skills’ for many years.
It is generally agreed that user education in libraries evolved at the end of the nineteenth century. However there is evidence that library instruction was given at German universities even in the seventeenth century in the form of lectures about reference books, study techniques, and how to use the library (Salony, 1995; Virkus & Metsar, 2004). Increasing attention to information literacy is partly the result of information overload, especially related to the rapid development of information and communication technologies and the growth of digital information and partly because of the new focus on learning in a lifelong learning context (Breivik, 1998; Rigmor & Luke, 1995; Virkus, 2003; Wilson, 2001).

After Paul Zurkowski introduced the term information literacy in 1974, the development of information literacy began with a publication, ‘Nation at risk’ in 1983 and another publication ‘Educating the Students to Think: The Role of School Library Media Programme’. In 1987, by adding library literacy and computer literacy, the term was advanced by Kuhlthau. In 1988, the American Association of School Librarians, a branch of the American Library Association (ALA), published "Information Power" (American Library Association Presidential Commission on Information Literacy, 1989), national guidelines for school library media programmes. The stated mission of "Information Power" was "to ensure that students and staff were effective users of ideas and information." The first meeting of the national forum in information literacy took place on November 9, 1989 and advanced the concept of information literacy. Secretary's Commission on Achieving Necessary Skills Report, "What Work Requires of Schools" (1991), and "Goals 2000," were two major events in bringing information literacy.
Information Literacy is recognised as a major tool in improving higher education (Eisenberg et al., 1998).

Gibson (2006) stated that professional associations in the American library community such as the ALA, American Association of School Librarians and Association of College and Research Libraries (ACRL) have promoted information literacy for a number of years. They have invested much time and resources in the professional development opportunities for librarians in information literacy pedagogy and programme development. They have also helped to create standards like the American Association of School Librarian’s Information Power guidelines, and Information Literacy Competency Standards of ACRL.

Information literacy has become an important concept since the arrival of the information age. Research in this area in Asian countries such as India is still in its preliminary stages since these countries have only recently become fully immersed in the information culture (Karisdappa & Rajgoli, 2008).

1.1.2 Definitions of Information Literacy

Information Literacy is such an important factor in self empowerment and lifelong learning, that many definitions have been proposed by prominent individuals and organisations. Some of the most popular definitions are given below for contextual purposes and better understanding of the term itself.

Information Literacy is “a set of abilities requiring individuals to recognise when information is needed and have the ability to locate, evaluate and use effectively the needed information” (ACRL, 2000).
Webber and Johnston (2001) propose a broad definition. They define ‘Information Literacy’ as “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”.

Information Literacy encompasses knowledge of one's information concerns and needs, and the ability to identify, locate, evaluate, organise and effectively create, use and communicate information to address issues or problems at hand; it is a prerequisite for participating effectively in the Information Society, and is part of the basic human right of lifelong learning (The Prague Declaration, 2003).

Information Literacy is an intellectual framework and a social process for understanding, finding, evaluating, communicating and using information activities which may be accomplished in part by fluency with information technology, in part by sound investigative methods, but most important, through critical discernment and reasoning. Information Literacy initiates, sustains, and extends lifelong learning through abilities which may use technologies but are ultimately independent of them (Abid, 2004).

Information Literacy knows when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner (Chartered Institute of Library and Information Professionals, 2005).

Information Literacy is the array of knowledge and skills necessary to identify the information needed for a task and then to locate, understand, evaluate, and use that
information efficiently and effectively within appropriate ethical and legal limits (West Chester University of Pennsylvania, 2006).

Information Literacy may be defined as the ability to know what there is in a landscape and to draw meaning from it through engagement and experience with information. This ability arises from complex contextualised practice, processes and interactions that enable access to social, physical and textual sites of knowledge (Lloyd, 2006).

From the above definitions, it is evident that information literacy could be a skill or ability or knowledge to search, locate, retrieve and use/communicate information in an ethical way. Further, information literacy is related to lifelong learning of an individual.

1.1.3 Information Literate

Information is available from many sources and in many formats, such as printed text, CD-ROMs, library databases and web sites. To be "information literate" one needs to know why, when, and how to use all of these sources and formats and think critically about the available information. Information literacy abilities improve over time as the individual gains expertise in the topics he/she chooses to investigate and as he/she practices searching for, selecting and evaluating the information and ideas he/she encounters.

ALA Presidential Committee on Information Literacy (1989) spells out the attributes of information literate: “a person must be able to recognise when information is needed and have the ability to locate, evaluate and use effectively the needed information".
Rader (1990) feels that becoming information literate is essential for survival in the future; information literate citizens will be prepared to acquire and use information appropriate for any situation, within or beyond the library, locally and globally. He also highlights the outcomes of being an information literate person as under:

Information literate can,

- Survive and be successful in an information/technology environment;
- Lead productive, healthy, and satisfying lives in a democratic society;
- Effectively deal with rapidly changing environments;
- Ensure a better future for the next generation;
- Find appropriate information for personal and professional problem solving; and
- Have writing and computer proficiencies.

Doyle (1992) identifies an information literate person as one who: (i) recognises the need for information; (ii) recognises that accurate and complete information is the basis for intelligent decision making; (iii) identifies potential sources of information; (iv) develops successful search strategies; (v) accesses sources of information, including computer-based and other technologies; (vi) evaluates information; (vii) organises information for practical application; (viii) integrates new information into an existing body of knowledge, and; (ix) uses information in critical thinking and problem solving.

According to ACRL (2000), an information literate individual is able to: (i) determine the extent of information needed; (ii) access the needed information effectively and efficiently; (iii) evaluate information and its sources critically. (iv) incorporate selected information into one’s knowledge base; (v) use information effectively to
accomplish a specific purpose; (vi) understand the economic, legal and social issues surrounding the use of information and access and use information ethically and legally.

Gorman and Dorner (2006) while critiquing ALA’s definition of information literacy, consider that an information literate person should:

- be aware of why, how and by whom information is created, communicated and controlled, and how it contributes to the construction of knowledge;
- understand when information can be used to improve their daily living or to contribute to the resolution of needs related to specific situations, such as at work or school;
- know how to locate information and to critique its relevance and appropriateness to their context, understand how to integrate relevant and appropriate information "with "what they already know to new construct knowledge that increases their capacity to improve their daily living or to resolve needs related to specific situations that have arisen.

From the above, it can be understood that information-literate people are independent and lifelong learners in the information society and can be successful individuals in all walks of their life.

1.1.4. Need for Information Literacy

Information literacy helps to identify what information is needed, to locate various sources of information, to evaluate the information to find out whether using the information solves the problem. The word ‘information literacy’ is being used widely due to information explosion. Singh (2009) has stated that information literacy is recognised
mainly because of the arrival of Information and Communication Technologies (ICT) and World Wide Web. Information overload and ICT instability have resulted in info-stress and techno-stress among the information seekers. Information literacy provides elbow support during these stressful moments. Moreover in today’s state of information explosion, the Internet is open to anyone to post any information; therefore evaluation of information becomes essential which is facilitated by information literacy.

Information literacy forms the basis of lifelong learning which is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to find the right information from authentic sources and extend their investigations, become more self-directed and assume greater control over their own learning. It has become the responsibility of higher educational institutions to make the students as lifelong learners. Students are expected to be well-informed and continuous learners after their formal education is over and are also expected to continuously grow higher in their career ladder as individuals. Information literacy plays a vital role in fostering this growth and helps students to become independent and lifelong learners.

Donham (1999) has also stressed the importance of information literacy and according to him, “if the ability to access information efficiently, to discern quality and authority to apply information to decision making and problem solving are keys to success in a world of rapidly growing information, information literacy is indeed a basic survival skill for today’s students. He also highlighted that the students leaving the schools need to be independent learners as they are expected to be lifelong learners, intelligent and informed decision makers in the 21st century”.
The importance of information literacy to the students is well-explained by Eisenberg, et al (1998) as under:

- Information literacy is a process – because it makes the students to understand how to find information, how to evaluate information and how to use the information in the context;
- Information literacy represents a shift in thinking – because information literate students will have to analyse the information and critically evaluate the information before using the same;
- Information literacy is valuable – because it makes the students independent and lifelong learners.

1.2. Information Literacy Competency

Competency is an underlying characteristic of a person that leads to or causes effective or outstanding performance. Each competency is a constellation of functionally-related actions, linked by common often unconscious, intent (Audia & Pillutla, 2005). Competency is a cluster of related knowledge, skills and attitudes that affects a major part of one’s job that correlates with performance on the job, that can be measured against well-accepted standards and that can be improved via training and Development (Parry, 1996) (as cited in Sanghi, 2004).

The aforesaid definitions clearly underscore the importance of competency in information literacy with regard to the ability to find and use information appropriately to enhance one’s performance.
Information Literacy Competency ensures maximum utilisation of the information resources as well as optimisation of information handling capabilities. 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 arenas of life (Ramesh Babu, 2008). Information literacy competency is the ability to think in a critical and integrated manner about one’s information needs and the knowledge of how to find, evaluate the quality, use, and manage information. According to Goetch & Kaufman (1998), Information Literacy Competency involves the following six factors:

(i) Thinking critically about the information need (for example, a fact, statistics, critical analyses, a set of articles);

(ii) Understanding the structure and types of information in a discipline, or being aware that such structure differs among disciplines, and knowing how to start (for example, when to ask an information expert for help);

(iii) Finding information to meet specific needs;

(iv) Evaluating the quality of the information found (for example, refereed versus non-refereed journals; data sets from professional organisations with high quality control versus "Ronald's Quick 'n Fast Data mart");

(v) Using the information (for example, selecting and using statistical analysis programmes, managing bibliographic citations); and

(vi) Managing the information (for example, understanding what information can be found repeatedly and what requires special tasks, maintain information on a long-term basis).
1.2.1 Information Literacy Competency Assessment

Assessment is the means for learning, not just the method of evaluation. It is designed to inform about the acquisition of skills and thought processes by students (Avery 2003).

Information literacy competency assessment is to find out whether a person possesses information literacy competency and if so, to what level. Information literacy competency assessment of an individual or group of individuals will help to structure or restructure an information literacy programme to best suit the level of an individual or group of individuals. To assess information literacy competency, one should know what should be assessed, how it should be assessed, is there even a valid and feasible set of assessment tools, and so on (Farmer & Henry, 2008). According to Webber and Johnston (2003), assessment of information literacy development should be designed to serve a number of purposes: (i) Diagnostic - to provide information about the current level of students' knowledge and competence, (ii) Formative - to provide useful feedback during instruction to enable modifications and improvements, (iii) Summative - to determine whether learning outcomes have been attained by the course evaluation and to determine the overall success of the programme.

1.2.2. Methods of Assessment

Librarians from many institutions and universities have developed a number of assessment methods like standard classroom tests based on multiple choice, fill-in-the-blanks, and matching questions. Rockman (2002) has stated that student performance can be assessed through a variety of quantitative and qualitative measures such as portfolios,
quizzes, tests, reflective essays, web-based tutorials, direct observations or service learning opportunities. However, Dunn (2002) contends that such tests cannot assess the effectiveness of student’s search skills in real life situation. Walsh (2009) content analysed the existing literature to find out the methods that were developed and used by librarians to measure information literacy and if those methods had proven reliability and validity. He found that out of the nine types of assessment tools identified, the most commonly used by over a third of the studies was, multiple choice questions. Further, four (analysis of bibliographies, multiple choice questions, quiz/test and self-assessment) out of the nine accounted for 79 per cent of the studies. The other methods of assessments are essay, final grade, observation, portfolio and simulation.


1.2.3. Information Literacy Competency Standards for Higher Education by ACRL

Research on information literacy gained such a momentum during the middle and latter part of the twentieth century, that many institutions of higher learning developed standards and models of their use. Prominent information literacy models are Big 6Skills, Seven faces of information literacy, Empowering 8 and so on. Standards like Information
Literacy Competency Standard for Higher Education, Australian and New Zealand Information Literacy Framework, Information literacy standards and indicators of school libraries, Alaska Association of School Librarians Standards and so on have been developed by various associations and institutions across the globe (Eisenberg et al., 1998).

Among the available standards, Information Literacy Competency Standard for Higher Education was developed by the ACRL. ACRL, a division of the American Library Association, is a professional association of academic librarians and other interested individuals. It is dedicated to enhancing the ability of academic library and information professionals to serve the information needs of the higher education community and to improve teaching, learning and research skills. (http://www.ala.org/ala/mgrps/divs/acrl/about/whatisacrl/index.cfm).

The ACRL standards could be rightfully considered the most elaborate and all-inclusive attempt to date in the endeavours to determine what constitutes, in a measurable way, information literacy. It is not surprising that Australia, a leading advocate of information literacy, and New Zealand have made it the basis of their information literacy framework (Bundy, 2004). The high-profile ACRL Information Literacy Competency Standards for Higher Education represent a comprehensive attempt to offer a legitimate framework for assessing information literacy at post-secondary level, by providing educators with a pre-determined list of desirable information literacy standards, and including a range of indicative "performance indicators" and “learning outcomes” in order to enable the construction of valid assessment tools in multiple subject context. The standards were designed primarily as assessment guidelines, which
instructors could adapt to local circumstances as they considered appropriate (McGuiness & Brien, 2007).

The ACRL standards provide the empirical necessities and educational guidelines, to facilitate information literacy education in its Information Literacy Competency Standards for Higher Education (ACRL, 2000). Information Literacy Competency Standards for Higher Education includes five standards and 22 performance indicators reflecting expectations of the standards, and enumerated 87 outcomes identifying specific behaviours that information literate individuals would hopefully exhibit. The Standards focus upon the needs of the students in higher education at all levels and the outcomes for assessing student progress toward information literacy. The ACRL (2000) standards and indicators are discussed below.

- **Competency Standard One - The information literate student determines the extent of the information needed:** This standard also includes four indicators namely, i) the information literate student defines and articulates the need for information, ii) the information literate student identifies a variety of types and formats of potential sources for information, iii) the information literate student considers the costs and benefits of acquiring the needed information, and iv) the information literate student re-evaluates the nature and extent of the information.

- **Competency Standard Two - The information literate student accesses needed information effectively and efficiently:** This standard includes five indicators namely, i) the information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information, ii) the information literate student constructs and implements
effectively designed search strategies, iii) the information literate student retrieves information online or in person using a variety of methods, iv) the information literate student refines the search strategy if necessary, and v) the information literate student extracts, records, and manages the information and its sources.

- **Competency Standard III - The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system:** There are seven indicators namely, i) the information literate student summarises the main ideas to be extracted from the information gathered, ii) the information literate student articulates and applies initial criteria for evaluating both the information and its sources, iii) the information literate student synthesises main ideas to construct new concepts, iv) the information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information, v) the information literate student determines whether the new knowledge has an impact on the individual’s value system and takes steps to reconcile differences, vi) the information literate student validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners, and vii) the information literate student determines whether the initial query should be revised.

- **Competency Standard IV - The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose:** The three indicators under this standard are i) the information literate student applies new and prior information to the planning and creation of a
particular product or performance, ii) the information literate student revises the
development process for the product or performance, and iii) the information
literate student communicates the product or performance effectively to others.

- **Competency Standard V** - The information literate student understands
many of the economic, legal, and social issues surrounding the use of
information and accesses and uses information ethically and legally: There
are three indicators namely, i) the information literate student understands many
of the ethical, legal and socio-economic issues surrounding information and
information technology, ii) the information literate student follows laws,
regulations, institutional policies, and etiquette related to the access and use of
information resources, and iii) the information literate student acknowledges the
use of information sources in communicating the product or performance.

1.3. **Statement of the Problem**

Many studies have been conducted on information literacy in universities and
also in the workplaces (e.g. Clyde, 2005; Lloyd, 2006; Parker, 2003). These studies
have demonstrated that information literacy is a competency, required right from the
first year of academic study and is particularly important for independent essay and
thesis writing. It is also required for subsequent professional activity, as part of lifelong
learning. A number of institutions in the developed countries have produced standards,
guidelines, models and research reports on information literacy.

Good research is good because it advances collective understanding. To advance
the collective understanding, a researcher or scholar needs to understand what has been
done before, the strengths and weaknesses of existing studies, and what they might mean. The academic community ought to be able to assume that a dissertation literature review indicates a doctoral candidate’s ability to locate and evaluate scholarly information and to synthesise research in his or her field (Boote & Beile, 2005). Therefore, a research scholar is expected to be competent in information literacy. Hence this study focuses on information literacy competency assessment of research scholars.

Information Literacy Competency Assessment is important not only for the individual per se but also for the institution and nation as a whole. Thus this study is set in the Indian environment and attempts to assess information literacy competency among the research scholars. The present study tries to throw light on the construction of a tool for information literacy competency assessment. This study purports to study select personal, educational and academic performance related-factors and information literacy competency assessment among research scholars.

1.4. Significance of the Study

Information literacy is becoming increasingly important in this contemporary society due to rapid technological change and proliferation of information resources. Individuals are faced with abundant information choices from a variety of sources - both print and electronic. Questions about the quality of information obtained from this wide array of choices, either from the Internet or other multimedia resources pose serious threats in terms of the authenticity, validity and reliability of the information as a result of which, special challenges arise in terms of evaluating, understanding and using information in an ethical and legal manner. In the university setting, information
literacy is of critical importance. Students are expected to discover things for themselves, find the information they need and use the data to support their assignment and projects. It is thus paramount for the universities to ensure that all students acquire competencies in knowing how to learn, to formulate questions, to access potential sources of information, to evaluate what is found for accuracy, to organise information and finally to use information to do something with it (Doyle, 2003). Proper utilisation of information can create opportunities for effective handling of the problems facing developing countries, such as unemployment, environmental degradation and poverty. Incorporating the concept of information literacy in the curricula has been recommended as a way to ensure that individuals are adequately equipped by the time they complete university education (Dadzie, 2007).

O’Connor, Radcliff and Gedeon (2001) found that although many researchers have developed tools for measuring students' knowledge of a specific library system or database, and for determining affective responses to library instruction (for instance, degree of confidence felt by students), there is not yet a standardised method for measuring information literacy that is easily administered and applied across institutions. Many librarians have developed their own tools to assess aspects of information literacy. There is a large body of literature that describes case studies and examples of information literacy assessment, particularly in the United States, many of which were based on the ACRL Information Literacy Competency Standards, 2000. The sheer quantity of examples in the literature however can make it hard for librarians looking to use or develop an assessment tool to find examples of best practice amongst the literature, especially those that address some for the concerns expressed above (Walsh, 2009).
Information Literacy Competency Standards for Higher Education provides a framework for assessing the information literate individual. The ACRL’s Information Literacy Competency Standards for Higher Education and accompanying documentation present an important step in standardising information literacy across higher education. The ACRL has established the Institute for information literacy to play a leadership role in assisting individuals and institutions in integrating information literacy throughout the full spectrum of the education process (Eisenberg et al., 1998). It is learnt from the literature that many studies have been conducted for information literacy assessment by having ACRL standard as a base. And it is also found that studies are limited in the Indian scenario. Therefore the researcher has prepared a validated tool based on ACRL standard customised for the Indian scenario and attempts to understand and analyse select aspects of personal, educational, and academic performance-related factors and Information Literacy Competency among full-time research scholars pursuing their pre-doctoral and doctoral research programmes at the University of Madras.

Given the importance and relevance of information literacy assessment among the research scholars, the present research study will make a significant contribution to the existing body of knowledge. This study has attempted to bring out a standardised tool to assess Information Literacy Competency. It is anticipated that the research will contribute to a wider understanding of how select personal and education related factors influence information literacy competency among research scholars. The findings will be of interest to academicians, academic administrators and policy makers.
1.5 Research Questions

The study seeks to answer the following questions:

• What standardised tool could be presented to assess information literacy competency in the Indian context?

• What is the level of information literacy competency of the full-time research scholars of the University of Madras?

• What are the differences in information literacy competency and its dimensions (if any) among the full-time research scholars that may be attributed to personal and educational factors?

• What is the strength of association between academic performance-related factors and information literacy competency and its dimensions (if any)?

• What is the effect of academic performance-related factors on information literacy competency and its dimensions (if any)?

1.6 Objectives of the Study

The research objectives are listed below.

1. To develop a validated tool to assess information literacy competency among research scholars in the Indian context.

2. To measure information literacy competency of the full-time research scholars of the University of Madras.

3. To find out the demographic and educational variables that explain the difference in information literacy competency and its dimensions.
4. To find out the association between academic performance-related variables and information literacy competency and its dimensions.

5. To predict information literacy competency and its dimensions based on academic performance-related variables.

1.7 Chapterisation

This thesis has been presented in five chapters. Chapter one provides an overview of the research problem under study, the statement of the problem, the significance of the study, the research questions and the objectives of the study. The second chapter presents the review of literature, wherein, an attempt has been made to present the results of significant studies related to the research topic. Chapter three describes the research methodology adopted in this study and the procedures used to gather data and analyse the same. The results of the analysis of the data collected and the findings that emerge from the study are discussed in chapter four. The final chapter presents the summary of the results, discussions, suggestions and directions for future research. This is followed by the references and the appendix. The tool of data collection has been appended.