

## ICT LITERACY AMONG LIBRARY PROFESSIONALS IN THE ENGINEERING COLLEGE LIBRARIES OF TAMIL NADU: AN ANALYTICAL STUDY

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### ABSTRACT

The Information and Communication Technology (ICT) is one of the important buzzword of today's world. It has changed the society into Information Society and our way of life. It has been integrated in every walk of life, ICT includes computers and communication technology for processing, storage and its retrieval of Information faster and effective. Information and communication technologies have introduced new methods of teaching and conducting research and have been brought into education facilities for online learning, teaching and research collaboration. This paper is primarily concerned with self- efficacy in the context of information literacy. The focus is primary on the concept of self efficacy, followed by attainment of self efficacy beliefs. Considerable effort has been invested in the paper for the outcome of a comprehensive study on information literacy of engineering college library professionals, with special reference to rapidly changing scenario of divergent information resources and its assorted formats and media, which are immensely affected by the ever-growing information and communication technology in 21<sup>st</sup> century. The study found that the respondents indicated that 95.12 percent of professionals have knowledge in computer fundamentals, 81.07 percent in Internet, 42.68 percent in multimedia and only a very few professionals 29.26 percent have knowledge in computer programming.

**Keywords:** Information and Communication Technology (ICT), Internet, Multimedia, Search Engines, Web-Resources, Automation, OPAC.

### Introduction

Information is the lifeblood of democracy and it is considered as the vital source of power. Information literacy is currently understood as embracing the ability to define a problem, find information to solve the problem, evaluate information and use it effectively. Information literacy as a way to move efficient access, evaluation and use of information should be taken into account and used for improving information end users. It is a set of information and knowledge of skill that enable individuals to recognize when information is needed and when it is not, how to locate, evaluate, integrate, use and effectively communicate information in an ethical way.

In short information literacy means knowing information about information. Information literacy refers to a constellation of skills revolving around information research and use. Hence, the library professionals should acquire the skills to access and use efficiently and effectively the myriad sources of information, information and communications technology, search techniques and knowledge of e-resources so as to satisfy successfully the various complex information needs of the users. The library professionals as the information providers / information facilitators should act as library managers to guide

and educate the student community for self- sufficiency and independent learning and information literacy is one such potential tool that empowers the learners (Choudhury,2009).

Over past few decades, the library environment has changed considerably in terms of collection, organization and services. The e-resources (both online and offline) have occupied a considerable space in the library collection, the transaction of library materials are fully automated, new web based services are offered by libraries to attract users participation in redesigning the library system and services and so on. These changes are mainly due to the development and impact of Information Communication Technology (ICT) in libraries which have also made sea changes in all walks of life. The ICT tools and services are being used in libraries to manage libraries more efficiently and to cater users demand properly. In this changing library scenario, the library and Information professionals must possess adequate ICT skills to manage the modern libraries, more specifically the academic libraries . They need to acquire continuous knowledge and skills on the fast changing Information Communication Technology to provide better library services to users (Sunil Kumar Satpathy,2011).

### **Literature Review:**

In any field of study, the existing literature constitutes a base on which all further research is carried out. The Encyclopedia of Educational Research says that the related literature is the embodiment of complete informational knowledge of any specific subject or topic of research. This helps the researcher to highlight the studies and their findings related to the problem undertaken for research. The researcher feels that there is a need for review of literature, which has some relation to the relevant area and considers the most important pre-requisite to actual planning and conducting the study. Therefore, the researcher made an elaborate review of the research material available on the study.

1. Rehman, Majid and Baker (1997) interviewed 60 top and middle-level managers of academic libraries in Malaysia to validate a list of competencies (knowledge and skills) required by entry-level academic librarians. They identified sets of foundation and operational competences namely: knowledge of collection, automation, information technology, database design and management. The competences to work with different information systems and resource sharing consortia were perceived to be a need for future years.
2. Al-Ansari (2002) report a questionnaire survey on the current continuing professional development practices and perceptions of academic library employers about skills that need to be developed in their staff in the six Gulf Cooperation Council countries. It was found that systematic staff development program is generally lacking. Current continuing professional development activities focus on immediate institutional needs. Information and communication technology skills preferred relate to automated systems, electronic resources, networking, and multimedia application.
3. Joint (2003) attempts to flesh out the heterogeneous skills required by LIS professionals by relating them to past and present practice, and sketches possible paths along which digital library training might evolve.

4. Mahmood (2003) provided a list of 75 competencies needed by entry-level academic librarians. Validated by 70 chief librarians of universities and post graduate level colleges from the public and private sector, ten competencies, were recognized as the most essential competencies, seven of which belonged to information technology category. The validated list was then compared with the curricula of LIS programs in Pakistan.
5. Kavulya, (2007) identifies priority areas of training and critical IT skills required by LIS professionals in relation to current job market and performance requirements.

### OBJECTIVES OF THE STUDY:

For the present study, some of the specific objectives are made:

- To know the ICT literacy among the library professionals in engineering colleges.
- To construct strategies for locating information
- To understand the present status of the librarians & their ICT Knowledge.
- To find out the problems faced by the LIS professionals in engineering colleges in Salam, Tamil Nadu.
- To evaluate information obtained from different sources;
- To organize, apply and communicate information to others in ways appropriate to the situation;
- To support and enable users to interact with knowledge resources in creating awareness among users;
- To accept change and adapt to new circumstances in library environment and to provide quality service.
- To provide/suggest some of the recommendations for the development of engineering college libraries in tamilnadu state.

### Methodology:

In order to collect the comprehensive and relevant data from the library professionals of the fifteen engineering colleges in Salem, Namakkal and Coimbatore district, a structured questionnaire was designed and interview method was also adopted as the tool for collection of data. The questionnaire was formulated keeping in view, the objective and various facers of the study and the questionnaires were personally distributed and collected with constant personal pursuance and the data obtained from the filled in questionnaires, later classified, analyzed, tabulated and logically interpreted.

### Data Analysis and Discussion:

Analysis of data is the ultimate step in research process. It is the link between raw data and significant results leading to conclusions. This process of analysis has to be result oriented.

### Gender-Wise Distribution:

A detailed analysis of the data and its interpretation is presented below in the form of tables and graphs. The particulars of the sample studied for this research work is presented in the table No.1 below.

Table 1: Gender -Wise Distribution of Respondents

Gender	No. of Respondents	Percentage
Male	64	62.74
Female	38	37.26
Total	102	100.00

It is shown in table-1, 62.74 percent of populations studied were males and only 37.26 percent of total were females.

Table.2 District wise distribution of Respondents

Name of the District	No. of Respondents	Computer Literate	Percentage
Salem	34	26	76.47
Namakkal	28	20	71.42
Coimbatore	40	36	90.00

In rapid growth and wide spread of information and communication technology the library professionals have made themselves fit to cope with the modified services and activities of libraries. In this context table-2 clearly explains that the highest 90 percent of library professionals are ICT literate in Coimbatore district in comparison to 76.47 percent in Salem district and only 71.42 percent in Namakkal district.

### Computer Courses undertaken

Table-3 Computer courses undertaken

Type of computer course	Number	Percentage
Short term course	17	20.74
DCA course	21	25.60
PGDCA Course	34	41.47
Degree	10	12.19
Total	82	100.00

In order to target the increasing users' ever-changing demand and rising needs of the age library professionals should undergo certain type of computer training to prove own self adventitious in tendering services in the library. In relation to this issue the table-3 depicts that the library professionals of engineering colleges are in leading position as computer education undertaken by them which includes 41.47 percent have undergone PGDCA course, 25.60 percent DCA course followed by 20.74 percent have undergone short term course and 12.19 percent have done degree course.

**Computer Skill:** Computer skills are very much needed to every LIS professional in the digital environment. So, to know the level of ICT awareness from the respondents, the question is distributed to them.

Table-4 Computer Skill

Type of Skill	Number	Percentage
Computer fundamentals	78	95.12
Programming	24	29.26
Internet	67	81.07
Multimedia	35	42.68

Note: Total sample exceeds the required size since the questions are multiple choices

It might perhaps be useful to understand the efficiency of professionals on the basis of their computer skill in their day to day activities at work place. The table-4 shows that the library professionals of engineering colleges are highly skilled. As the respondents indicated that 95.12 percent of professionals have knowledge in computer fundamentals, 81.07 percent in Internet, 42.68 percent in multimedia and only a very few professionals 29.26 percent have knowledge in computer programming.

**Sources of Training:** Training & Development is essential to every employee of any organization, for library, it is very essential, because it is a service as well as public institution.

Table-5 Sources of Training

Sources	Number	Percentage
Self study	13	15.85
By the library	38	46.35
In a computer institute	10	12.19
By any outside agency	21	25.61
Total	82	100.00

The precision to what the table-5 transformed that probable all the library professionals of engineering colleges have undergone training from certain sources. Out of 82 respondents, 46.35 percent were provided training by the library, followed by 25.61 percent by outside agency, 15.85 percent by self study and a very few respondents 12.19 percent were provided training by the computer institute.

### Type of Training Needs

Table-5 Type of Training Needs

Training Need	Number	Percentage
Use of bibliographic resources	24	29.26
Use of on-line catalogue	58	70.73

E-books / E-journals	35	42.68
Internet tools and techniques	30	36.58
Search techniques / strategies	14	17.07
Library management software package	78	95.12
Evaluation of information resources	6	7.31
Handling, preservation, conservation of book and non-book materials	4	4.87

Note: Total sample exceeds the required size since the questions are multiple choices

Over the time, the innovation of computer and communication technology spread round the corner and collaboration of these with libraries day to day activities as well as services, has a wide ranging impact on the library professionals to be competent enough to cope with the new environment for working comfortably. In this regard they are to be provided requisite training so far as to be able to render multi various services to the potential users. The table-5 clearly connotes that the highest 95.12 percent of library professionals need training on handling library management software packages followed by 70.73 percent for use of online catalogue, 42.68 percent for e-books and e-journals, 36.58 percent need training for Internet tools and techniques.

### Library Automation:

Library automation is need today's` library and Information Centers in the ICT era for providing the needed information the all types of the user community. For that, the question is distributed to the respondents and the responses were presented in the below

Table-6 Knowledge of Library Automation

Response	Number	Percentage
Yes	54	65.85
No	28	34.15
Total	82	100.00

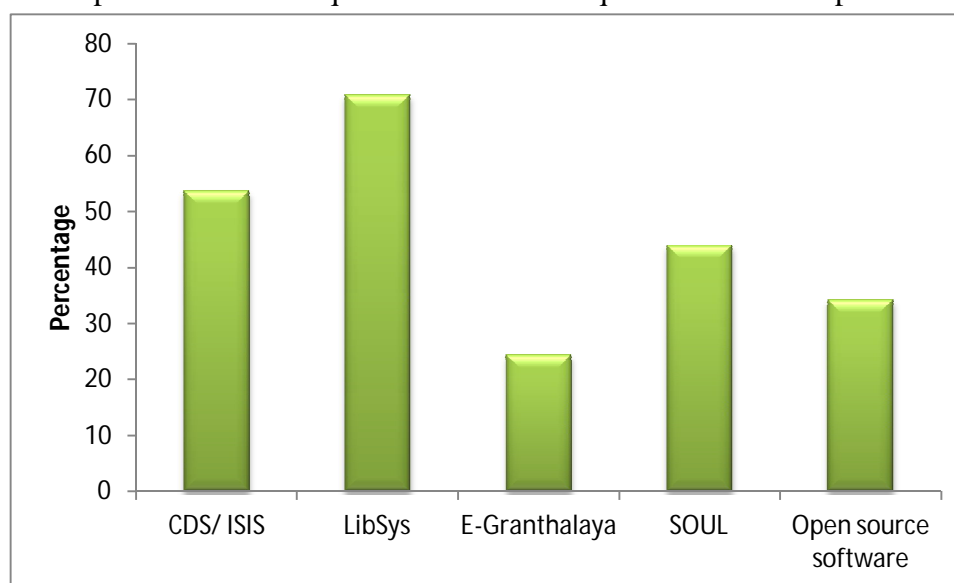
Library automation has become the bare necessity for each and every library; hence all library professionals need to have basic knowledge of library automation. The present study collected data on this which has been tabulated in table-6. The analysis of data reveals that out of 82 respondents, 54 (65.85%) have knowledge of library automation where as 28 respondents (34.15%) do not have this knowledge.

Table-7 knowledge of library automation software

Library Automation Software	Number	Percentage
CDS/ ISIS	44	53.65
LibSys	58	70.73
E-Granthalaya	20	24.39
SOUL	36	43.90
Open source software	28	34.14



Note: Total sample exceeds the required size since the questions are multiple choices



**Fig.4 knowledge of library automation software**

Further data were collected on the level of knowledge of various library automation software by the Library professionals which has been tabulated as table-7. The analysis of data of table-7 shows that out of 82 respondents, who possess knowledge of library automation, maximum number of respondents have knowledge of LibSys automation software, followed by CDS/ISIS, SOUL, Open source software and E-Granthalaya library automation software.

#### **Digital Library / Institutional Repository**

**Table-8 Knowledge of Digital library / Institutional Repository**

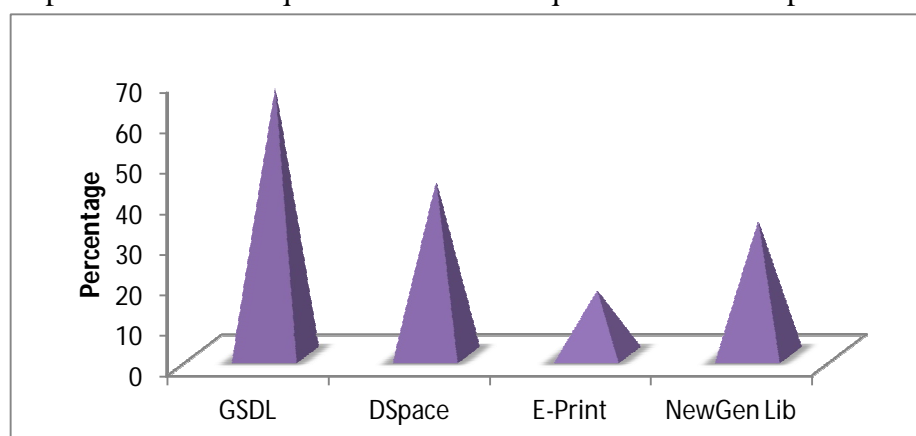
Response	Number	Percentage
Yes	63	76.82
No	19	23.18
Total	82	100.00

Digital library and Institutional repositories have become the latest ICT tools of libraries. The study attempts to collect data on this latest ICT tools which is tabulated in Table8. The analysis of data shows that as high as 63 respondents out of 82 (76.82%) have knowledge of this where as 19 respondents (23.18%) do not have.

**Table-9 Knowledge of Digital library / Institutional Repositories software**

Digital Library Software	Number	Percentage
GSDL	54	65.85
DSpace	35	42.68
E-Print	13	15.85
NewGen Lib	27	32.92

Note: Total sample exceeds the required size since the questions are multiple choices



**Fig.5 Knowledge of Digital library / Institutional Repositories software**

Further attempt was made in the study to know about the level of knowledge of library professionals on various Digital Library /Institutional Repository software and data collected on this have been tabulated in table-9. It is evident from the analysis of data of table-9 that, out of 82 respondents who possess the knowledge of digital library/institutional repositories software, maximum professionals have knowledge of GSDL, followed by DSpace, NewGen Lib and E-print.

### Evaluation of Web-Resources:

Table-10 Evaluation of Web-Resources

Response	Number	Percentage
Yes	54	65.86
No	28	34.14
Total	82	100.00

The approach of the library professionals on evaluation of web-resources as presented in table-10 indicates that maximum 65.86 percent professionals possess knowledge in evaluating web-resources of engineering college, while 34.14 percent professionals do not have efficiency in evaluating the web-resources.

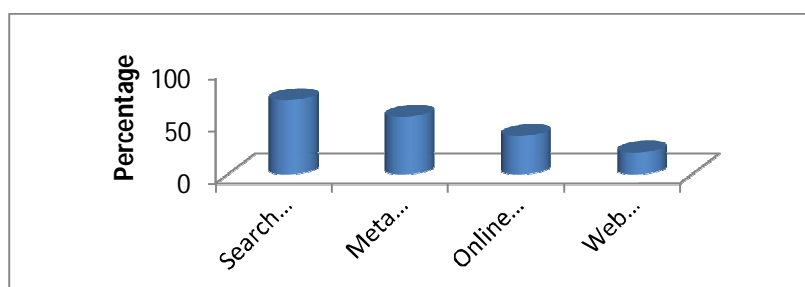
### Use of search tools

Table-11 Use of Search Tools

Search Tools	Number	Percentage
Search Engines	58	70.73
Meta Search Engines	45	54.87
Online bibliographic databases	30	36.58
Web portals / Subject portals / subject gateways	17	20.73

Note: Total sample exceeds the required size since the questions are multiple choices



**Fig.6 Use of Search Tools**

Data presented in table-11 relating to use of search tools denotes that 70.73 percent professionals use search engines followed by 54.87 percent professionals use meta search engines, 36.58 percent professionals use online bibliographic databases and 20.73 percent library professionals use web portals/subject Gateways.

### Use of Search Engines:

Table.12 Use of Search Engines

Name of Search Engines	Number	Percentage
Yahoo	48	58.53
Google	64	78.04
Rediff	30	36.58
Alta Vista	25	30.48
Lycos	18	21.95
Bingo	10	12.19
HotBot	6	7.31

Note: Total sample exceeds the required size since the questions are multiple choices

A study of data in table-12 indicates the respondents satisfaction on search engines. It can be assessed with the help of 7 search engines. The respondents' satisfaction towards utilization of 7 search engines can be observed from the following discussion. 78.04 percent of respondents use Google search engines followed by 58.53 percent use Yahoo, 36.58 percent use Rediff, 30.48 percent use Alta Vista, 21.95 percent use Lycos, 12.19 percent use Bingo and 7.31 percent use HotBot. It could be seen clearly from the above discussion that respondents have high level use of search engines such as Google and Yahoo.

### Use of Storage Media

Table-13 Use of Storage Media

Type of Storage Media	Number	Percentage
Floppy	8	9.75
Compact Disc	68	82.92
Digital Video Disc	55	67.03
Pen Drive	78	95.12

Note: Total sample exceeds the required size since the questions are multiple choices

Now we are moving from the typographical age to the electronic era. As a result of these developments there are a large number of options i.e. Floppy, CD, DVD and Pen Drive etc. for recording and preservation of information resources in addition to print on paper.

Use of these storage media has spread over all the levels of society as we;; as in library. So the library professional must keep adequate skill in using these storage devices. In this context table-13 clearly shows that the highest 95.12 percent professionals use pen drive followed by 82.92 percent use CD, 67.03 percent use DVD and 9.75 percent use floppy.

### Skill in using OPAC and Web-OPAC

Table-14 Skill in using OPAC and Web-OPAC

Response	Number	Percentage
Yes	58	70.74
No	24	29.26
Total	82	100.00

This is the age of automation and digitization. Everywhere, there is rapid initiation and application of automation, digitization and networking programmes. In automated libraries the use of OPAC is a must and the professionals should be well versed for the use of these. In this regard the table-14 connotes that the maximum 70.74 percent of professionals use OPAC and Web-OPAC, while the 29.26 percent professionals of engineering colleges do not have skill to use OPAC and Web-OPAC.

### Constraints in acquiring ICT skills

Table-15 Constraints in acquiring ICT skills

Constraints	Number	Percentage
Tight working schedule	76	92.68
Poor infrastructural facilities	38	46.34
Lack of cooperation from the authority	28	34.14
Poor in service training provision	54	65.85
Personal inabilities	15	18.29

Note: Total sample exceeds the required size since the questions are multiple choices

Data have been collected on the constraints faced by library professionals in acquiring ICT skills and have been tabulated in table-15. The analysis of data of Table15 shows that the main constraint in acquiring ICT skills by library professionals is tight working schedule as 76 respondents out of 82 have responded to this (92.68%). It is followed by other responses such as poor in-service training provision (65.856%), poor infrastructural facilities of the library (46.34%), lack of cooperation from the authority (34.14%) and personal inabilities (18.29%).

### Recommendations:

After careful observation of the present investigation/study, the following recommendations were made:

1. Library professionals should be encouraged and deputed by the authority to attend seminars, workshops, conferences, training programmes on library management software, IT tools, Search techniques.
2. The library authorities need to provide necessary scope and motivation to upgrade the ICT literacy of library professionals.

3. They should know about different consortiums and benefits of a library being member of it.
4. The engineering institutes need to develop the infrastructural facilities of their libraries so that the ICT literacy of library professionals can be best used.
5. They should be provided requisite financial benefits for rendering highly technical and modern library services to the users as they demand.
6. The library schools of Tamil Nadu need to change their curricula focusing more on ICT and changing library environment.

**Conclusion:**

Information and Communications Technology (ICT) or Information Technology (IT) usually a more general term that stresses the role of unified communications and the integration of telecommunications, computers, middleware as well as necessary software, storage- and audio-visual systems, which enable users to create, access, store, transmit, and manipulate information. The library professionals must possess sufficient knowledge of new ICT skills such as library automation, e-resources management, content management, organization of information on Internet and Intranet, developing and maintaining digital libraries/institutional repositories, web based library services etc. The sole aim of the survey is to understand and sketch a framework of information literacy level of library professionals of fifteen major engineering colleges in the state of Tamil Nadu, in order to meet the ever changing demand of users. Professionals with right ICT skills and expertise will have plenty opportunities in future and will be crucial to the management of technology intensive libraries.

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