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APPLICATION AND USES OF
INFORMATION COMMUNICATION
TECHNOLOGY (ICT) IN ACADEMIC
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AND SCIENCE COLLEGES IN TIRUNELVELI
DISTRICT, TAMIL NADU : A STUDY

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**APPLICATION AND USES OF INFORMATION COMMUNICATION TECHNOLOGY
(ICT) IN ACADEMIC LIBRARIES WITH REFERENCE TO ARTS AND SCIENCE
COLLEGES IN TIRUNELVELI DISTRICT, TAMIL NADU : A STUDY**

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ABSTRACT

Information and Communication Technology (ICT) is an important resource of a Modern Library or Information centre. The ICT is the electronic means of capturing, processing, storing and communicating information. It encompasses an array of hardware, software services and networks that enables access to digital information. Hence, this study deals with the application and uses of Information Communication Technology (ICT) in Academic Libraries with reference to Arts and Science Colleges in Tirunelveli. The researcher had employed a well structured close - ended questionnaire for collecting the required data from PG students, Research scholars and Faculty members of six colleges that are serving within the corporation area of Tirunelveli and affiliated to Manonmaniam Sundaranar University, Tirunelveli. Survey method was used for collecting primary data. The findings of the study of the respondents are adequacy of using ICT based resources. The study reveals that 781 (56.44%) respondents always using ICT based resources, 632 (40.49%) sometimes using ICT based resources.

Key words: *Information, Communication, Technology, E-resources, ICT, Internet.*

Introduction

Information and Communication technology (ICT) is an important resource of a Modern Library or Information centre. ICT is the electronic means of capturing, processing, storing and communicating information. It encompasses an array of hardware-software services and networks that enable access to digital information. In the 21st century, Information Technology had rapid changes in education. The conventional teaching and learning is gradually moving towards online.

Review of Literature:

The review of literature is a critical look at the existing research that has relevance and significance to the work that is being carried out. The reviews comprise of Indian and foreign studies on the topic of present investigation.

Rannappanavar and Vijayakumar (2001) have surveyed the use of hard ware and software facilities in the University of Agricultural Science Libraries in Karnataka. The study evaluated the access of networks, information services and barriers in information technology applications. The study also covered the collection of the agricultural university libraries, in house data base, use of IT in administration and the impact of IT applications on libraries. Results revealed that none of the University libraries at the time of study had databases and full implementation of IT applications in their libraries. The study recommended that the librarians should approach the University authority to train the library personnel on IT application and approach funding agencies like INFLIBNET and ICAR for their library automation and provide IT based information services to their clientele.

Mohamod Haneefa (2007) carried out a study to examine the application of information and communication technologies (ICT) in special libraries in Kerala, India. The results indicated that library automation in special libraries in Kerala was largely commenced during 1990-2000.

CDS/ISIS was used more in the libraries than in any other software. The library catalogue was found to be the most popular area for automation. Most of the libraries were hampered by lack of funds, lack of infrastructure and lack of skilled professionals to embark on automation of all library management activities and application of ICT.

Dhanavandans et al. (2011) found that the role of engineering colleges in the technical manpower development is quite significant. They need rapid information communication technology infrastructure and in this content there is a need for adequate development of electronic resources. The lack of adequate finance is the main reason for not developing information communication technology infrastructure especially in the case of libraries that do not receive financial help from the UGC of India or others like AICTE. The problem can be solved only through the aid from the state government or ICTE. The establishment of information communication technology infrastructure and in this context, there is a need for adequate development of electronic resources. The establishment of information communication technology infrastructure facilities in the self financing college libraries in Tamil Nadu can improve the efficiency of information support, the information retrieval and quality of education as a whole.

Murugesan and Balasubramani (2011) carried out a study to examine the use and application of information and communication Technology in research and development libraries in Tamil Nadu. The study suggested the Research and Development institutions to give priority to consortia based subscription and boost the funds and recruitment of information technology trained staff for better ICT based services and products to their library users.

Jones (2005) observed that reference services in academic libraries traditionally included professional assistance with general reference questions, information gathering, development of

research strategies, resource selection and mediated data base searching. However, the distance reference services, rather than in a face-to-face transaction, called for more “innovative approaches” with focus on the internet services.

Krishnamoorthy (2005) aimed to share the experience of the design of digital library in relation to digitize of data base and making use of user community with a view to give an efficient library practice. He presented a case study approach to the design of digital library service to provide insight into the development of online resources and discussed important services like online resource, online public access catalogue (OPAC), consortium and how these sources are helpful in building digital collection in Indian statistical Institute, Bangalore.

Scope of the study:

The study covers feasibilities in enhancing the use of ICT resources and, digital information practices for academic research in the institutions surveyed. The survey also covers the information seeking pattern, information requirements and the modes of communication via media and institutions of the target groups in using information resources. The study also carried out the access of the existing library and information services and productivity of the faculty and students in the six Arts and Science colleges functioning in Tirunelveli corporation area. All the six colleges are government aided, Post-Graduate, first grade Colleges affiliated to Manonmaniam Sundaranar University, Tirunelveli.

The colleges selected for study are:

1. St. Xavier's College, Tirunelveli.
2. St. John's College, Tirunelveli.
3. Sara Tucker College for Women, Tirunelveli.
4. Saratha College for Women, Tirunelveli.
5. Sathakathulla Appa College, Tirunelveli.
6. M.D.T. Hindu College, Tirunelveli.

Objectives of the Study

The following are the objectives of the study:

1. To identify the problems faced by the users of their college libraries.
2. To find out the frequency of accessing library by the users.
3. To study the purpose of using ICT based resources and services among the users of library.
4. To identify the method of acquiring IT skills by the users of library.
5. To find out the most preferred place for accessing IcT based resources among the users of library.
6. To find out the level of expertise with computers among the users of library.

Sampling Design

There are seven arts and science Colleges imparting higher education in Tirunelveli. Among them four are co-head and three are exclusively for women students. Out of the seven colleges, one college is a govt. college for women students and the remaining six colleges are government aided colleges. All these six colleges are homogenous in character and are affiliated to Manonmaniam Sundaranar University, Tirunelveli. Hence all these six colleges have been selected for study.

Methodology of Research

Survey method of research was used to collect first hand information: On the basis of the total strength of students of the colleges, a total of 1600 respondents have been selected on the basis of stratified random sampling method. The researcher has employed a well structured, close – ended questionnaire for collecting, the required data from students, research scholars and faculty member. Out of the 1600 respondents, only 1561 questionnaires were received back fully filled-in.

Tools used

Though many tools are available in the field of research, the researcher has rightly chosen the questionnaire in which each statement was prepared after extensive discussion with the experts in the field of library and Information science. A Pilot study was also conducted before finalizing the

questionnaire. Suitable statistical techniques such as averages, percentages, SPSS, chi-square and correlation co-efficient, scoring techniques and ranking chart were applied to test to the hypotheses.

Limitations of the Study:

The study covers only six Arts and Science Colleges which are functioning within the corporation Area of Tirunelveli. The study does not include engineering colleges working in Tirunelveli. The Government owned Arts and Science College and Law and Medical colleges are excluded. Hence, the outcomes of the study cannot be generalized and it is applicable only to the colleges chosen as respondents.

Data Analysis:

Data collected through the issue of questionnaires, informal talk with knowledgeable persons and interview with librarians, were classified and tabulated according to the objectives of the study. For analysis and interpretation, statistical tools such as averages, percentages, correlation co-efficient, SPSS, chi-square tests were used.

Table 1

Distribution of Respondents, frequency of Visit to the Library

Academic Status	Daily	Twice in a Week	Once in a Week	Once in a Month	Occasionally	Total
PG students	407 (53.13)	212 (27.68)	68 (8.88)	27 (3.52)	52 (6.79)	766
Research scholars	101 (38.11)	72 (27.17)	31 (11.70)	25 (9.43)	36 (13.58)	265
Faculty Members	210 (39.62)	121 (22.83)	94 (17.74)	59 (11.13)	46 (8.68)	530
Total	718 (46.00)	405 (25.94)	193 (12.36)	111 (7.11)	134 (8.58)	1561

Source: Computed from Primary Data

The information given in table 1 shows that the academic status-wise distribution of respondent's frequency of visit to the library. It is seen from the table that, out of the total 1561 respondents about 718 (46%) respondents visited the library daily, 405 (25.94%) respondents visited the library twice in a week, 193 (12.36%) visited the library once in a week. About 111 (7.11%) respondents visited the library once in a month and 134 (8.58%) visited the library occasionally. Among PG students, 407 (53.13%) respondents visited daily and 27 (3.52%) students visited the library monthly. Out of the 530 faculty members 39.62% visited the library daily and 8.68 percent visited the library occasionally.

Table 2

Distribution of Respondents' mode of learning ICT skills

Academic Status	Self instructions	Formal Training Programme	Faculty Research Scholars	Through reading Books/ Journals	Following Online Instructions	Help from Friends	Total
PG students	104 (13.58%)	219 (28.59%)	105 (13.71%)	202 (26.37%)	66 (8.62%)	70 (9.14%)	766 (49.079)
Research scholars	43 (16.23%)	41 (15.47%)	46 (17.36%)	89 (33.58%)	23 (8.68%)	23 (8.68%)	265 (16.98%)
Faculty Members	36 (6.70%)	85 (16.04%)	53 (10.00%)	101 (19.06%)	161 (30.38%)	94 (17.74%)	530 (33.95%)
Total	183 (11.72%)	345 (22.10%)	204 (13.77)	392 (25.11%)	250 (16.02%)	187 (11.98%)	1561 (100%)

Source: Prepared from primary data.

Data displayed in table 2 shows the academic status-wise distribution of respondent's mode of learning ICT skills. It can be inferred that out of 1561 respondents, 183 (11.72%) respondents used trial and error methods to learn ICT skills; 385 (22.10%) respondents learn the skills of IC through formal training. About 204 (13.07%) learn ICT skills from their teachers; 392 (25.11%) learn ICT skills through reading books and articles; 250 (16.02%) respondents learn ICT skills through online

instructions and 187 (11.98%) respondents learn ICT skills from their friends. It could be inferred from the above discussion that a considerable number of respondents (25.11%) learn ICT skills by reading articles and books.

Table 3

Distribution of respondents Factor-wise that Influence the use of Search Engine.

Academic Status	Popular	More Information	User friendly	Search strategy is simple	Easy to connect	Total
PG students	51 (6.66)	122 (15.93)	191 (24.93)	152 (19.84)	250 (32.64)	766
Research scholars	22 (8.30)	44 (16.60)	67 (25.28)	72 (27.17)	60 (22.64)	265
Faculty Members	35 (6.60)	67 (12.64)	148 (27.92%)	178 (33.58%)	102 (19.25%)	530
Total	108 (6.92)	233 (14.93)	406 (26.00)	402 (25.75)	412 (26.39)	1561

Source: Computed from Primary data (percentage with in brackets)

Table 3 shows the status-wise distribution of respondents' factor that influences the use of search engine. Out of the total respondents of 1561 about 108 (6.92%) respondents are using a particular search engine because of its popularity. About 233 (14.93%) respondents are using a particular search engine because it gives more information. Another 406(26%) respondents are using a particular search engine because, it is user friendly and 402 (25.75%) respondents are using a particular search engine because the search strategy is simple and 412 (26.39%) are using a particular search engine because, it is easy to get connected. Out of 766 PG students, 250 (32.64%) of them using a particular search engine because it is easy to be connected. Among 530 faculty members, 178 (33.58%) of them using a particular search engine because its search strategy is simple.

Table 4**Distribution of Respondents Time spend for searching, Accessing ICT based Services**

Respondents	Less than One Hour	One Hour	More than one Hour	Two Hours	More than two Hours	Total
PG students	36 (4.70%)	133 (17.23%)	174 (22.72%)	226 (29.50%)	198 (25.85%)	766
Research scholars	45 (16.98%)	48 (18.11%)	72 (27.17%)	55 (20.75%)	45 (16.98%)	265
Faculty Members	75 (14.15%)	73 (13.77%)	130 (24.53%)	147 (27.74%)	105 (19.81%)	530
Total	156 (9.99%)	253 (16.21%)	376 (24.09%)	428 (27.42%)	348 (22.29%)	1561

Source: calculated from Primary data, Percentages are given within brackets.

Table 4 shows the distribution of respondents time spent for accessing ICT based resources and services. It can be seen from the table that out of 1561 respondents 156 (9.99%) of the respondents spent less than one hour per day. About 253 (16.21%) spent one hour per day, 376 (24.069%) spend more than one hour per day. About 428 (27.42%) spent two hours per day for accessing ICT based resources and services. Among the 766 PG students, 29.50% of the respondents spend more than two hours per day and 4.70% of the respondents spend less than one hour per day. The distribution given in the above table clearly shows that the majority of the respondents and more than two hours per day for accessing ICT based resources and services.

Table 5**Adequacy of using ICT services**

Respondents	Always	Sometimes	Never	Total
PG Students	342 (44.65%)	400 (52.22%)	24 (3.13%)	766
Research Scholars	147 (55.47%)	105 (39.62%)	13 (4.91%)	265
Faculty Members	392 (73.96%)	127 (23.96%)	11 (2.08%)	530
Total	881 (56.44%)	632 (40.49%)	48 (3.07%)	1561

Source Calculated from Primary data percentages are given with the brackets.

In table 5 the respondents are distributed on the basis of adequacy of using ICT sources. Out of 1561 respondents, 881 (56.44%) respondents are using ICT based resources always. About 632 (40.49%) respondents are using ‘sometimes’ and 48 (3.07%) respondents stated that they never use ICT based resources. Out of the 766 Post Graduate students (52.22%) sometimes using ICT services and 24 (3.13%) stated that they never used ICT resources and services. It can be inferred from the above analysis that most of the respondents have reported that they are always using ICT based resources and services.

Table 6
Purpose of using ICT resources Gender-Wise

Gender	For Study purpose	Researcher	Finding Research information	Keeping upto Data	Publishing Articles & Books	Preparing for papers	NET/ SET Exam	Total
Male	151 (13.78%)	328 (29.93%)	286 (26.09%)	68 (6.20%)	47 (4.29%)	130 (11.86%)	86 (7.85%)	1096
Female	39 (8.39%)	94 (20.22%)	121 (26.02%)	72 (18.48%)	61 (13.12%)	47 (10.11%)	31 (6.67%)	465
Total	190 (12.17%)	422 (27.03%)	407 (26.07%)	140 (8.97%)	108 (6.92%)	177 (11.34%)	117 (7.50%)	1561

Source: Calculated from Primary data (Percentage are given within brackets)

Table 6 shows the gender-wise distribution of respondent’s purpose of using ICT based resources and services. Out of 1096 male and 465 female respondents 150 (13.78%) male and 39 (8.39%) female respondents have used ICT based resources and services for study purpose. About 328 (29.93%) male and 94 (20.22%) female respondents have used ICT based resources and services for research purpose. It could be inferred from the analysis of the data given in table 6 that a considerable number of male respondents have used ICT based resources and services for research purpose.

Findings and Suggestions:

The following are the major findings of the study:

1. The distribution of respondents mode of learning ICT skills reveal the fact that 25.11 percent of the respondents learn ICT skills by reading books and articles on the ICT.
2. The findings of the academic status-wise distribution of respondents' mode of learn ICT skills reveal that 219 (28.59%) Post graduate students learn ICT skills through formal training.
3. The study shows that 89(33.98%) Research scholars learn ICT skills by reading books and articles.
4. About 16 (26.67%) faculty members learn ICT skills through online instructions.
5. The findings of the gender-wise distribution of respondents mode of learn ICT skills reveal that 320 (29.20%) male respondents learning ICT skills by reading books and articles.
6. About 124 (2.67%) female respondents learn ICT skills through formal training.
7. The findings of the respondents' adequacy of using ICT resources reveal that 781 (56.44%) respondents always use ICT based resources.
8. The study reveals that only 48 (3.07%) respondents never use ICT based resources.
9. The respondents' hindrances faced' while accessing ICT based resources reveal that 23.72% of the male respondents and 22.37% of the female respondents faced difficulties in finding relevant information.
10. About 462 (29.60%) have mainly used ICT based resources because it is easy to use.
11. Since there is a lack of LAN facility in most of the Academic libraries, it is suggested that the usage of internet is less; hence, LAN facilities are to be introduced in all the college libraries.
12. The Academic Libraries must increase the video-conferencing facilities which enables the users to maximize the usage of ICT based activities and services.

Conclusion

The present study throws light on the various aspects of the use and user perception of ICT based resources and services in the Arts and Science colleges located in Tirunelveli and affiliated to Manonmaniam Sundaranar University. The study shows that the Faculty Members utilize ICT based resources and services up to the maximum level. It reveals that they are familiar with the ICT based resources and services and there by their productivity increases within a shortest duration.

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