Information Literacy Competencies among Research Scholars of University of Agricultural Sciences, Dharwad: A Pilot study

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Abstract

Information Literacy (IL) is set of abilities to recognize information need, locate, access, retrieve, evaluate and make use of the information effectively. IL plays an important role in the learning process. Due to the rapidly changing information environment, diverse choices and exponential growth of information in print and electronic form, it has become difficult for any information user to get the required information when needed. To deal with this problem many educational institutions are coming forward to integrate the Information Literacy into the curriculum. In India, Universities of Agricultural Sciences have introduced a non-credit but mandatory subject on Library Skills. Keeping this in view, the present study was undertaken to assess the impact of the IL programme on research scholars of University of Agricultural Sciences, Dharwad.

Keywords

Information Literacy, Information Literacy skills, Information skills, Information Literacy competencies, Library skills.

Electronic access

The journal is available at www.jalis.in

Journal of Advances in Library and Information Science
ISSN: 2277-2219 Vol. 7. No.1. 2018. pp.65-71

INTRODUCTION

Today information is available through different avenues like libraries, community resources, special interest organizations, media and internet. Often, this information comes to an individual in unfiltered formats. Simultaneously the questions are being raised about its objectivity, authenticity, validity, reliability and credibility. It has become horrendous task for an individual to understand the information structures and environment due to the complexities associated information access. Information literacy has evolved from library practices such as user orientation, user education, bibliographic instruction etc. With the advent of ICT (Information & Communication Technology) and its influence on information activities, the information is doubling every year. The mere availability of abundant of information sources will not suffice and create more informed citizenry, but the information seeker must be equipped with the set of abilities to access, retrieve and make use of it effectively. IL is a basis of Life Long Learning, it even assumes a greater role in learning and research activities as it equips an individual with certain competencies which make learning self directed and independent.

The Association of College and Research Libraries (ACRL) defines information literacy as 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" (ACRL,2000). Chartered Institute of Library and Information Professionals (CILIP) stresses on ethical use of information, according to it Information Literacy is "knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner" (CILIP, 2012). Doyle (1994) argues "an information literate person as one who recognizes that accurate and complete information is the basis for intelligent decision making; recognizes the need for information; formulates questions based on information needs; identifies potential sources of information; develops successful search strategies; accesses sources of information, including computer-based and other technologies; evaluates information; organizes information for practical application; integrates new information into an existing body of knowledge; and uses information in critical thinking and problem solving".

Bruce (1994) identified seven key characteristics of an information-literate person. According to him an

information literate is the one who, "engages in independent, self-directed learning; uses information processes; uses a variety of information technologies and systems; has internalized values that promote information use; has a sound knowledge of the world of information; approaches information critically; and has a personal information style that facilitates his or her interaction with the world of information".

REVIEW OF LITERATURE

Sharma (2010) conducts an assessment study of information literacy skills among PG students, Research scholars and faculty in Punjab Agricultural University, Ludhiana by using questionnaire. It was found that Information Literacy (IL) skills of the majority of the respondents found to be satisfactory. The author attributes this positive result to the IL programmes which are made part of the curriculum in the university. Singh and Joshi (2013) evaluate IL competencies among Post-Graduate students of Haryana Agricultural University, Hisar, India. The study reveals that the IL skills among the respondents is satisfactory, however there is a significant difference between the first and second year students. Lata and Sharma (2013) found the majority of the faculty and PG students of IMER, Chandigarh and Pt. B. D. Sharama university of Health Sciences, Rohtak rated their IL skills as high in accessing and making use of information. However an average number of them are aware of evaluating skills of information and very less number of them are aware of Boolean search. Joshi (2013) assess the IL competencies among the research scholars of science discipline in universities of Delhi and IIT Delhi based on the ACRL standards for Science, Engineering and Technology. The author found that researchers from IIT, Delhi are better equipped with IL skills than the researchers from other institutes.

NEED FOR THE STUDY

The present study was an attempt to pre-test the questionnaire before taking up the actual research going to be conducted on the "Information Literacy Competencies among the Post-Graduate students and Research Scholars of Universities of Agricultural Sciences in Karnataka state: A study".

METHODOLOGY

To collect the required data, survey method has been adopted, a well structured questionnaire was designed and distributed among the Research scholars of University of Agricultural Sciences, Dharwad using simple random sampling. Around 90 Questionnaires were distributed, out of which 70 were returned with a response rate of 77.7%. For testing the hypotheses of the study, the researcher has used ANOVA and Tukey Post hoc test.

SCOPE AND LIMITATIONS

The study covers only regular research scholars who were pursuing their Ph. D. at the time of collection of data during 02/02/2017 to 15/02/2017 in the main campus of University of Agricultural Sciences, Dharwad. Further, the study relies on the data collected from questionnaires only.

OBJECTIVES

1. To know the level of familiarity about information retrieval tools among the respondents.
2. To evaluate the respondents awareness about sources of information.
3. To know the awareness about databases and consortiums among the respondents.
4. To know the respondents awareness about search techniques.
5. To know the frequency of use of services by the respondents.
6. To know the preferred mode of information literacy programme by the respondents.

HYPOTHESES

1. ***H_0**: There is no significant difference in the Research Scholars awareness about different sources of information.*
   ***H_1**: There is a significant difference in the Research Scholars awareness about different sources of information.*
2. ***H_0**: There is no significant difference in the Research Scholars awareness about Databases/Consortiums.*
   ***H_1**: There is a significant difference in the Research Scholars awareness about Databases/Consortiums.*
3. ***H_0**: There is no significant difference in the Research Scholars awareness about Search techniques.*

H_1: There is a significant difference in the Research Scholars awareness about Search techniques.

4. **H_0:** There is no significant difference in the mode of training preferred by the Research Scholars.
   H_1: There is a significant difference in the mode of training preferred by the Research Scholars.

DATA ANALYSIS AND INTERPRETATION

Gender-wise distribution of respondents: The Research Scholars i.e. 44 (62.9%) of them belong to the male category while 26 (37.1%) of them belong to the female category which shows that the study is well represented by both male and female category.

Awareness about Information Retrieval (IR) tools among the respondents:

Table 1: Awareness about Information Retrieval (IR) tools among the respondents

IR tools	Excellent	Good	Unaware	Average	Poor
Catalogue	26 (37.1)	39 (57.7)	00 (00)	02 (2.9)	03 (4.3)
OPAC	32 (45.7)	22 (31.4)	09 (12.9)	07 (10.0)	00 (00)
Information Kiosk	16 (22.9)	25 (35.7)	22 (31.4)	07 (10.0)	00 (00)
Indexes	11 (15.7))	31 (44.3)	13 (18.6)	15 (21.4)	00 (00)
Abstracts	29 (41.4)	28 (40.0)	05 (7.1)	08 (11.4)	00 (00)

Table-1 revels that the awareness about information retrieval tools among the respondents. It is found that the majority of the respondents i.e. 39 (57.7%) of them rated their awareness about catalogue as good followed by 26 (37.1%) of them have rated as excellent. About 32 (45.7%) of them have rated their awareness about OPAC as excellent while 22 (31.4%) of them rated as good for the same. Further it also reveals that the respondents i.e. 25 (35.7%) have rated their awareness about making use of Information Kiosk as good whereas an average number of them i.e. 22(31.4%) have said that they are unaware. The awareness about Indexes and abstracting is necessary for the research scholars as which will help in the review of literature in the research. About 31 (44.3%) have rated their awareness about Indexes as good while 15 (21.4%) have rated as average followed by 13 (18.6%) said that they are unaware of the same followed by about their ability to make use of abstracts, 29 (41.4%) of them have rated as excellent and 28 (40%) of them rated as good while only 08 (11.4%) have rated as average for the same.

Awareness about sources of information: To evaluate the respondents ability to identify the a particular source of information, the researcher had framed a task oriented question where the respondent was supposed to identify the appropriate source for a query. The large majority of them i.e. 68 (97.1%) are aware of Journals followed by 35 (50%) of them are aware of Handbook, 33 (47.1%) of them are aware of Wikipedia and 28 (40%) of them are aware of Thesaurus. The less number of the respondents are aware of other sources such as Manual 25 (35.7%), Directory 25 (35.7%), Bibliography 21 (30.0%) and Encyclopaedia 14 (20.0%).

Table 2a: ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	26.555	7	3.794	18.743	.000
Within Groups	111.729	552	.202		
Total	138.284	559			

The table-2a shows that the ANOVA results conducted to know whether the respondents opinion is significant or non-significant. The results indicate that the significant value is 0.000 which is less than 0.05, which is highly significant therefore H_0 "There is no significant difference in the Research Scholars awareness about different sources of information" is rejected and alternative hypotheses is retained. To examine which specific groups differed significantly, the Tukey post hoc test was conducted. The Tukey post hoc results are presented in the following table-2b. Table-2b revels that the results of Tukey post hoc tests on one way ANOVA. The test shows that the multiple Comparison, from the table it is observed that there are three homogeneous groups of factors which differed significantly. In the first Homogeneous group the information sources such as Encyclopedia, Bibliograpy, manual, directory are grouped as they have received the similar response followed by Thesarus, Wikipedia, handbook are grouped in the second group which differed from

other two groups. In the third group there is only one source i.e. journal which is highly significant to other sources of information. The analysis reveals that there is significant difference between the three subsets.

Table 2b: Homogeneous Groups

Factor4	N	Subset for alpha = 0.05		
		1	2	3
Encyclopedia	70	.20		
Bibliography	70	.30		
Manual	70	.36		
Directory	70	.36		
Thesaurus	70		.40	
Wikipedia	70		.47	
Handbook	70		.50	
Journal	70			.97
Sig.		.147	.147	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 70.000.

Awareness about databases and consortiums among the respondents: The study reveals that the majority of the research scholars i.e. 46 (65.7%) are aware of CAB abstracts database, followed by 34 (48.6%) of them are aware of AGRIS/CARIS and 33 (47.1%) of them are aware of FAOSTAT. The less number of respondents are aware of other databases such as Acsess Digital Library 23 (32.9%), Web of Science 22 (31.4%), IndiaAgristat 20 (28.6%), Agricola 20 (28.6%), IDEAL (Agricat2.0) 16(22.9%), Green File 10(14.3%), DOAJ 12(17.1%), CeRa 05(7.1%) and SCOPUS 03(4.3%).

Table 3a: ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	24.952	11	2.268	12.676	.000
Within Groups	148.171	828	.179		
Total	173.124	839			

The table-3a shows that the results of one way ANOVA. The test of analysis of variance for difference is found to be significant as the significance value is 0.000 which is less than 0.05 and found to be highly significant. Therefore, H_0 "there is no significant difference in the Research Scholars awareness about Databases/Consortiums" is rejected at 5% level of significance and alternative hypotheses is substantiated. To observe specific groups Tukey Post hoc test was conducted, the results of the test are presented in the following table-3b.

Table-3b: Homogeneous Groups

Databases/ Consortiums	**N**	**Subset for alpha = 0.05**				
		1	**2**	**3**	**4**	**5**
SCOPUS	70	.04				
CeRA	70	.07	.07			
Green File	70	.14	.14	.14		
DOAJ	70	.17	.17	.17		
IDEAL (Agricat 2.0)	70	.23	.23	.23		
Agricola	70		.29	.29	.29	
IndiaAgristat	70		.29	.29	.29	
Web of Science	70			.31	.31	
Access Digital Library	70			.33	.33	
FAOSTAT	70				.47	.47
AGRIS/CARIS	70				.49	.49
CAB abstracts	70					.66
Sig.		.283	.111	.283	.183	.283

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 70.000.

The above table-3b depicts that homogeneous subsets of databases and consortiums. From the Post hoc test it is found that there are five subsets of groups which received the similar response from the respondents.

Awareness about search techniques among the respondents: The most of the respondents i.e. 51 (72.9%) and 49 (70%) are aware of basic search and advanced search respectively. The less number of research scholars aware of other search techniques such as Field search 26(37.1), Case sensitivity 25(35.7), Concept search 19(27.3), Parentheses 19(27.1), Boolean Search 16 (22.9), Phrase Search 13(18.6), Wildcards 10(14.3), Natural language search 08(11.4) and no respondent is aware of truncation search technique. From the study it is observed that the majority of the research scholars are unaware of the different search techniques which are essential in making use of electronic sources effectively.

Table 4a: ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	36.439	10	3.644	21.738	.000

Within Groups	127.229	759	.168		
Total	163.668	769			

The table-4a shows that the results of analysis of variance for respondents awareness about different search techniques. It is found to be significant as the significance value is 0.000 which is less than 0.05. Therefore hypothesis H_0 "there is no significant difference in the Research Scholars awareness about Search techniques" is rejected at 5% level of significance and the alternative hypothesis is retained. To examine for what factors the result is differing Tukey Post hoc test is conducted. The results of the Tukey post hoc test is presented in the table-4b.

Table 4b: Homogeneous Groups

Search Techniques	N	Subset for alpha = 0.05				
		1	2	3	4	5
Truncation	70	.00				
Natural Language Search	70	.11	.11			
Wildcards	70	.14	.14	.14		
Phrase search	70	.19	.19	.19	.19	
Boolean Search	70		.23	.23	.23	
Concept search	70		.27	.27	.27	
Parentheses	70		.27	.27	.27	
Case sensitivity	70			.36	.36	
Field search	70				.37	
Advanced search	70					.70
Basic Search	70					.73
Sig.		.209	.455	.074	.209	1.000

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 70.000.

Table- 4b depicts that the results of the Tukey post hoc test, it is found that there are five homogeneous subsets of groups which differ from one another. The advanced search and basic search are significantly differing from other subsets of homogeneous groups.

Frequency of Use of library services by the respondents:

Table-5 shows that the frequency of use of library services by the Research Scholars. The majority of the research scholars i.e. 49 (70%), 36 (51.4%), 34 (48.6%), 30(42.9) and 25(35.7) are making use of online database service, Current Awareness Service, Web-based library catalogue (OPAC), Reference service and Photocopy service always while 34 (48.6%) and 29(41.4) of them are making use of Book Lending and Indexing and Abstracting service often. Further, it can be observed that 40(57.1) of them are not making use of Interlibrary Loan service and Alerting service each followed by about 24 (34.3%) of them are also not making use of Document Delivery Service.

Table 5: Frequency of Use of library services by the respondents

Library Services	Always	Often	Sometimes	Seldom	Never
Online database services	49 (70.0)	19 (27.1)	00 (00)	02 (2.9)	00 (00)
Current Awareness Service	36 (51.4)	29 (41.4)	05 (7.1)	00 (00)	00 (00)
Book Lending	08 (11.4)	34 (48.6)	20 (28.6)	05 (7.1)	03 (4.3)
Indexing and Abstracting service	22 (31.4)	29 (41.4)	12 (17.1)	02 (2.9)	05 (7.1)
Interlibrary Loan	02 (2.9)	14 (20.0)	06 (8.6)	08 (11.4)	40 (57.1)
Photocopy service	25 (35.7)	14 (20.0)	23 (32.9)	06 (8.6)	02 (2.9)
Alerting services	05 (7.1)	10 (14.3)	09 (12.9)	06 (8.6)	40 (57.1)
Reference service	30 (42.9)	20 (28.6)	12 (17.1)	00 (00)	08 (11.4)
Newspaper clipping service	22 (31.4)	20 (28.6)	14 (20.0)	08 (11.4)	06 (8.6)
Document Delivery service	09 (12.9)	17 (24.3)	14 (20.0)	06 (8.6)	24 (34.3)
Web-based library catalogue (OPAC)	34 (48.6)	31 (44.3)	03 (4.3)	02 (2.9)	00 (00)

Mode of IL programmes preferred by the respondents: It is clear from the study that the majority of the respondents i.e. 60 (85.7%) preferred audio-visual instruction followed by 40 (57.1%) of them preferred Web based instructions and 39

(55.7%) of them preferred Training programmes/workshops. About 27 (38.6%) of them preferred Library guides and handbooks, 26 (37.1%) of them preferred computer assisted instructions, 18 (25.7%) of them preferred the mode of classroom lectures and demos, 17 (24.3%) of them preferred the mode of group library tours and the least i.e. 03 (4.3%) of them preferred the mode of pathfinders and subject guides.

Table 6a: ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	28.964	7	4.138	21.747	.000
Within Groups	105.029	552	.190		
Total	133.993	559			

It is observed from the ANOVA table-6a that the significance value is 0.000 (i.e., $p = 0.000$), which is less than 0.05 therefore, it is highly significant. That shows the difference between the means of factors is existed and the null hypothesis (H_0) "there is no significant difference in the mode of training preferred by the Research Scholars is rejected" at 5% level of significance and alternative hypothesis is retained. To examine which of the specific groups are differed significantly, it is necessary to conduct the Tukey post hoc test. The following table-6b presents the results of the post hoc test.

Table 6b: Homogeneous Groups

Mode of IL programmes	N	Subset for alpha = 0.05			
		1	2	3	4
Pathfinders and subject Guides	70	.04			
Group Library tours	70	.24	.24		
Classroom lectures and Demos	70	.26	.26		
Computer assisted instructions	70		.37	.37	
Library guides/handbooks	70		.39	.39	
Training Programmes/Workshops	70		.44	.44	
Web Instructions	70			.57	
Audio-visual instructions	70				.86
Sig.		.073	.121	.121	1.000

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 70.000.

From the post hoc test presented in the table-6b, it can be observed that the means of groups are divided into four homogeneous subsets. The first subset includes Pathfinders and subject Guides, Group Library tours and Classroom lectures and Demos followed by the second subset includes Computer assisted instructions, Library guides/handbooks and Training Programmes/Workshops while the third subset contains Web Instructions and the fourth subset Audio-visual instructions is highly significant than other groups of means.

FINDINGS OF THE STUDY

1. From the study it is found that the majority of the respondents i.e. 39 (57.7%) rated their awareness about catalogue as good followed by 26 (37.1%) rated as excellent
2. About 32 (45.7%) of the research scholars have rated their awareness about OPAC as Excellent while 22 (31.4%) rated as good.
3. The research scholars i.e. 25 (35.7%) rated their awareness about Information Kiosk as good followed by 22 (31.4%) of them remained uncertain.
4. An average number of research scholars i.e. 31 9 (44.3%) have rated their awareness about Indexes as good followed by 15 (21.4%) as average and 13 (18.6%) remained uncertain.
5. About abstracts, the research scholars i.e. 29 (41.4%) rated as Excellent while 28 (40%) of them have rated as good.
6. It is found from the study that 68 (97.1%) of the research scholars are aware of Journals followed by 35 (50%) of them are aware of Handbook While 33(47.1), 28(40.0), of them are aware of Wikipedia, thesaurus respectively. 25 (35.7%) of them are aware of Manual and Directory each.
7. It is observed that the majority of the research scholars i.e. 46 (65.7%) are aware of CAB abstracts database followed by 34 (48.6%) are aware of AGRIS/CARIS, 33 (47.1%) are aware of FAOSTAT.
8. The majority i.e. 51 (72.9) of them are aware of Basic search followed by 49 (70.0%) are aware of Advanced search.

SUGGESTIONS

1. The study found that the majority of the respondents rated their awareness about different

information retrieval tools as either good or excellent but a fair number of them either rated as average or remained undecided, therefore it is felt that there is still scope for improvement. Hence it is suggested to focus more improving the information retrieval skills of the respondents.

2. The respondents awareness about different sources of information and the kind of information they provide is found to be poor, hence there is need to focus on improving the awareness about the different sources of information and heir importance.
3. The study reveals that the majority of the research scholars are unaware of databases and consortiums in their field of subject, hence the IL programmes need to focus on creating awareness about databases and consortiums.
4. The study shows that the majority of the Research Scholars are unaware of the different search techniques except for basic search and Advanced search, therefore it is necessary to create awareness about making use of search techniques either by conducting training programmes or workshops which will help in making use of E-resources in a better way.
5. The respondents shown interest in audio-visual instruction, web based instruction apart from classroom teaching so that the LIS professionals need to develop audio-visual instructions on how to make use of the library sources and services by making use of the social networks, web applications.

CONCLUSION

The findings of the study lead to the conclusion that the IL programme being conducted at the University of Agricultural Sciences, Dharwad have not made dramatic impact on the students though the IL course has been made compulsory. The results of the study show that the majority of the respondents' understanding about different sources of information is found to be poor except for journals and large majority of them are unaware of the many databases in the field of Agriculture Sciences and different search techniques to make use of electronic information resources. The success of the IL programme also depends on the involvement and interest of the LIS professionals. There is need to improve the teaching skills of the library staff to impart the IL programmes effectively. The IL programmes will prove to be very fruitful with the cooperation and collaboration among the library staff, faculty and authorities is established. The qualified LIS professionals and the necessary infrastructure within the library structure will ensure better way to carry out the Information Literacy task.

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