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Information Literacy Competency with a Particular Reference to Information Search Skills among the Research Scholars and Faculty Members of the University of Burdwan: An Analytical Study

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Abstract - **Information is the main ingredient of teaching and research. Research scholars and faculty members are in need of the qualitative information to satisfy their day to day information need. Before the invention of the internet and web they were completely dependent on the printed materials of the library for such information. In recent times, qualitative information is scattered in different branches of knowledge due to exponential growth of information. Both online and print resources are growing fast and the research scholars and faculty members approach towards the use of online resources of information is increasing. The present study aims to investigate the information search skills of the research scholars and faculty members as a part of their information literacy competency of some selected departments of Arts and Science Faculty of the University of Burdwan. It is found that the ability of the respondents to search information in print and online environment is not in balanced way. To increase such ability among the respondents university library should take the responsibility. The University Libraries should conduct seminar, workshop, and training programme in the library training room or department wise through departmental/seminar/reference library by constituting the team of experts for delivering information literacy related activities.**
Keywords: **Information Literacy Competency, Information Search Skills**

I.INTRODUCTION

Information is the main ingredient of teaching and research. Research scholars and faculty members are in need of the qualitative information to satisfy their day to day information need. Before the invention of the internet and web they were completely dependent on the printed materials of the library for such information. To retrieve information either from printed resources or from online resources they need strong information search skills that may include the ability to formulate different search strategies for searching in the library resources and online resource and the ability to formulate search strategies to accomplish the research work effectively. Finding information is a mix of method and technical skill (Glasgow Caledonian University). Broadly speaking information search skill is the ability of the consumer of information to retrieve pinpointed and exhaustive piece of information either from print sources or online sources in right way and at right time.

II. REVIEW OF LITERATURE

There are different studies of information literacy competency among the different academic communities are available worldwide but very few studies are available on the information literacy competency with a particular reference to information search skills of the university research scholars and faculty members. Maharana and Mishra (2007) conducted a study among the faculty members at Sambalpur University on digital information literacy and found that majority (98.57%) of the respondents expressed their need for electronic information in addition to traditional print sources Search engines were most frequently used for browsing and searching on the web. Other tools such as subject gateways, bibliographic databases, digital libraries, etc. were less used by them. Sing (2009) conducted a study among faculty members, research scholars and post graduate students of Delhi University to describe and demonstrate the set of information literacy skills that makes a person a competent lifelong learner to find, evaluate, filter and use information in an effective manner. Bansode (2012) explore a study among the research students working in various science departments located in the Pune University Campus to identify the areas of strengths and weakness in ICT literacy skills and their search strategies and reveals that majority of the students are having ICT skills in finding and using the information available on the web but when it comes to using of various search strategies they are rely upon making simple search, they need to learn/orient about the use of Boolean operators for better output and majority of the research students are not aware of the copyright issue, also there is need teach them about plagiarism. Rafique (2014) conducted a study entitled Information Literacy Skills of Faculty Members: A Study of the University of Lahore, Pakistan and found that majority of faculty members were deficient in searching catalog and its use, choice of information sources, selection of relevant sources and formulation of search strategies. Likewise, many faculty members did not successful users of the university libraries. Ramaiah and Ramya (2015) conducted a study among the 106 research scholars of Pondicherry University to assess the information literacy training needs covering several subjects of nine schools and identified that almost all the research scholars agreed that they need information literacy trainning course and the

suitable agency to deliver the course may be a combination of the Department of Library & Information Science, subject teachers, and central library. In this study they have also suggested the topics to be covered under IL course.

III.THE UNIVERSITY OF BURDWAN AND ITS CENTRAL LIBRARY

Burdwan University, located in Burdwan, is one of the leading teaching and research university in West Bengal, India. Since its opening in 1960, Burdwan University has been dedicated to finding solutions to big challenges and to preparing students for leadership in a complex world.

The present Central Library is housed in a partly three-storied building. Being in the middle of the campus it is easily accessible from all departments of the University. It has a carpet area of about 12,000 sq mt. The library remains open from 8.00 a.m. to 7.00 p.m. from Monday to Friday and from 10.00 a.m. to 5.00 p.m. on Saturday. There are 19 departmental libraries in the Golapbag campus attached to the respective departments. The library provides consultation facilities to outside scholars, teachers of the affiliated colleges and students of other Universities as well as ex-students of Burdwan University following the library norms. The main thrust of the library continues to be the improvement of the quality of services and facilities, achieving higher degree of user's satisfaction and modernization of its activities and operations.

A. Orientation Programme at the Central Library

The Central Library organises User orientation programmes for the newcomers in different PG departments in the University. This helps user in familiarising with the library collection and services, rules and regulations of the library. Users are given hands-on training in searching bibliographic database, e-resources etc. Library staff helps PG students and Researchers in searching and downloading information from E-Journals and databases which indirectly motivates them to use the E-resources.

IV. OBJECTIVES OF THE STUDY

The main objectives of the study is,

1. To identify the competency of searching information in online resources
2. To explore the competency of general library search skills.
3. To identify the information search skills in a particular situation.
4. To provide some guidelines to the appropriate authority responsible for improving IL competency.

V. SCOPE OF THE STUDY

Scope of the study is limited to the selected research scholars and faculty members working in the selected post graduate departments of the University of Burdwan mainly focus on their different aspects of information search skills. The present study covers the sample of 100 research scholars and faculty members covering from the department of Commerce, Economics, History, Philosophy and Sanskrit under the faculty of Arts and Botany, Chemistry, Mathematics, Physics and Zoology under the Faculty of Science.

VI. SAMPLE OF THE STUDY

Under the University of Burdwan there are two faculties of post graduate studies namely, Faculty Council for Post-graduate Studies in Arts, Commerce, Law, Fine Arts & Music and Faculty Council for Post-graduate Studies in Science. Under the Faculty of Arts there are 21 departments offering post graduate degree and under the Faculty of Science there are 15 departments offering post graduate degree. From these depatrments only ten departments, five from Arts Faculty and Five from Science Faculty, offering both post graduate degree and Ph. D degree has randomly been selected for the study. Among the selected departments from among the research scholars and faculty members randomly ten members has been selected as sample.

A structured questionnaire with different aspects of information literacy competency was distributed among the selected sample; within the questionnaire there were some questions to assess the information search skill of the respondents. On the basis of those questions the analysis of data received from the respondents has been presented below.

VII. DATA ANALYSIS

Total 150 questionnaires were distributed among the respondents and 150 questionnaires were returned. Hence, the response rate is 100%.

Table 1 reveals that among the respondents 55 (55%) is male and 45 (45%) is female respondents. It is evident from the above table that among the respondents male respondents are predominant.

TABLE 1 DISTRIBUTION OF RESPONDENTS

Departments	No. of respondents		
	Male (N=27)	Female (N=23)	Total (N=50)
Commerce	08 (14.55)	02 (04.44)	10 (10)
Economics	07 (12.73)	03 (06.67)	10 (10)
History	03 (05.45)	07 (15.55)	10 (10)
Philosophy	04 (07.27)	06 (13.33)	10 (10)
Sanskrit	05 (09.09	05 (11.11)	10 (10)
Botany	05 (09.09)	05 (11.11)	10 (10)
Chemistry	05 (09.09)	05 (11.11)	10 (10)
Mathematics	07 (12.73)	03 (06.67)	10 (10)
Physics	06 (10.91)	04 (08.90)	10 (10)
Zoology	05 (09.09)	05 (11.11)	10 (10)
Total	55 (100)	45 (100)	100 (100)

Note: Figures in parenthesis indicate percentage

To find out required documents in the library, users first go to the library catalogue whether it is card catalogue or Online Public Access Catalogue (OPAC) and search the catalogue according to his/her approach. To identify and measure the correct approach of searching documents in library catalogue research scholars and faculty members were asked a question to find out all the documents about William Shakespeare available in library collection how they will search the catalogue.

TABLE 2 LIBRARY CATALOGUE SEARCH

Options	Department wise respondents										
	Commerce (N=10)	Economics (N=10)	History (N=10)	Philosophy (N=10)	Sanskrit (N=10)	Botany (N=10)	Chemistry (N=10)	Mathematics (N=10)	Physics (N=10)	Zoology (N=10)	Total (N=100)
By subject	00 (00)	02 (20)	01 (10)	00 (00)	03 (30)	03 (30)	02 (20)	02 (20)	00 (00)	03 (30)	16 (16)
By title	00 (00)	00 (00)	03 (30)	04 (40)	04 (40)	01 (10)	02 (20)	01 (10)	02 (20)	02 (20)	19 (19)
By publisher	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)
By author	10 (100)	05 (50)	06 (60)	06 (60)	03 (30)	06 (60)	06 (60)	07 (70)	08 (80)	04 (40)	61 (61)
By country	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	01 (10)	01 (01)
Don't know	00 (00)	03 (30)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	03 (03)
Total	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	100 (100)

Note: Figures in parenthesis indicate percentage

Table 2 reveals that among the subjects of both faculties only 03 (30%) research scholars and faculty members of Sanskrit, Botany and Zoology have the ability to search the above query in correct approach followed by 02 (20%) of Economics, Chemistry, Mathematics and 01 (10%) of History. On the other hand in totality 61 (61%) of the respondents prefer to search by author followed by 19 (19%) by title, 01(01%) by country and 03(03%) have no idea about it. It is evident from the above table that the respondents have the very low level of documents/ information search skills through library catalogue.

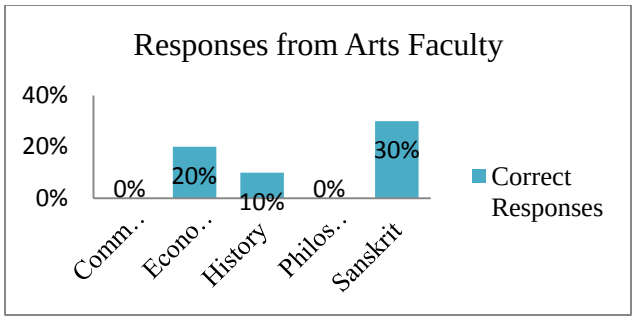

Fig.1 Responses from Arts Faculty

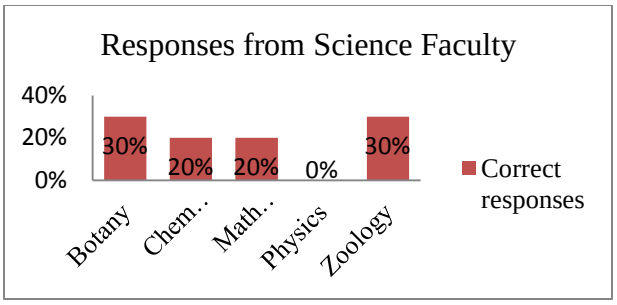

Fig.2 Responses from Science Faculty

It is evident from the above diagrams that ability of searching from library resources through catalogue among the arts faculty respondents under study only 03(30%) of Sanskrit is higher followed by 02(20%) of Economics and only 01(10%) of History and rest of the respondents have no ability to search library catalogue identifying right approaches. Among the respondents of science faculty respondents of Botany 03(30%) and Zoology 03(30%) is higher than Chemistry and Mathematics 02(20%), and rest of the respondents have no correct approach to search library catalogue.

Research scholars and faculty members require information pin pointedly to accomplish their day to day work effectively. If a subject specific search produces very small number of documents which is not enough for the searchers to complete the particular assignment. They need to revise the search so that they can get more number of relevant documents. Considering this type of situation the respondents were asked a question what should be their best course of action during such situation, i.e., either they will choose a boarder topic, change their topic, narrow down the topic, consult with an expert or they think other than these option or do not know about this.

TABLE 3 REVISION OF SEARCH TOPIC

Options	**Department wise respondents**										
	Commerce (N=10)	**Economics (N=10)**	**History (N=10)**	**Philosophy (N=10)**	**Sanskrit (N=10)**	**Botany (N=10)**	**Chemistry (N=10)**	**Mathematics (N=10)**	**Physics (N=10)**	**Zoology (N=10)**	**Total (N=100)**
Pick a broader area.	02 (20)	05 (50)	02 (20)	02 (20)	02 (20)	04 (40)	03 (30)	05 (50)	00 (00)	02 (20)	27 (27)
Change your topic	00 (00)	00 (00)	01 (10)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	01 (01)
Narrow down your topic.	00 (00)	03 (30)	00 (00)	04 (40)	00 (00)	00 (00)	00 (00)	00 (00)	04 (40)	01 (10)	12 (12)
Consult an expert	06 (60)	02 (20)	07 (70)	04 (40)	08 (80)	05 (50)	05 (50)	03 (30)	05 (50)	05 (50)	50 (50)
Other (please, specify)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)
Don't know	02 (20)	00 (00)	00 (00)	00 (00)	00 (00)	01 (10)	02 (20)	02 (20)	01 (10)	02 (20)	10 (10)
Total	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	100 (100)

Note: Figures in parenthesis indicate percentage

Table 3 reveals that only 05(50%) respondents of Economics and Mathematics have the ability to revise the search results followed by 04(40%) of Botany, 03(30%) of Chemistry, 02(20%) of Commerce, History, Philosophy, Sanskrit and Zoology. 08(80%) of the respondents prefer to consult with an expert followed by 07(70%) of History, 06(60%) of Commerce, 05(50%) of Botany, Chemistry, Physics and Zoology, 04(40%) of Philosophy 03(30%) of Mathematics and 02(20%) of Economics. Overall 50(50%) of the respondents want to consult with an expert followed by 27(27%) of the respondents has given right choice, 10(09.35%) of the respondents do not know anything about revision of search and rest of the respondents has given wrong answers.

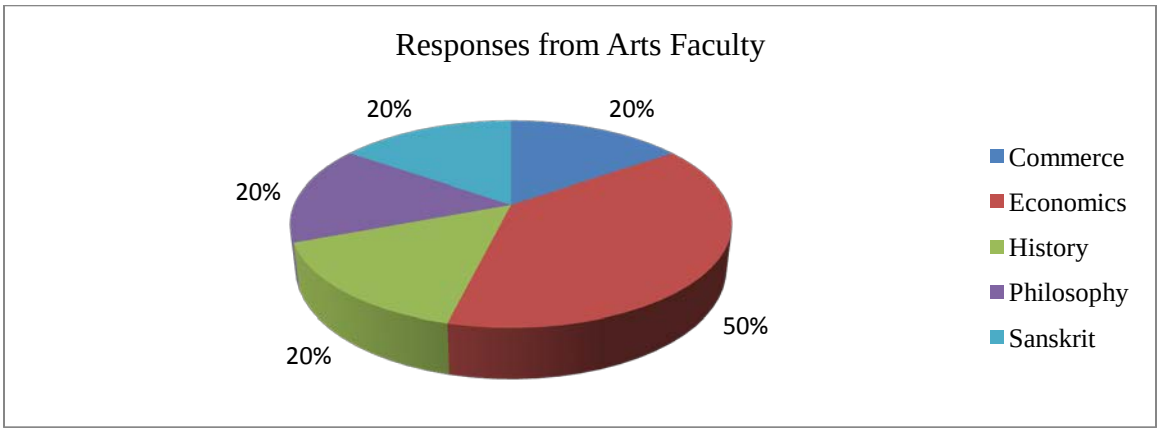

Fig.3 Responses from Arts Faculty

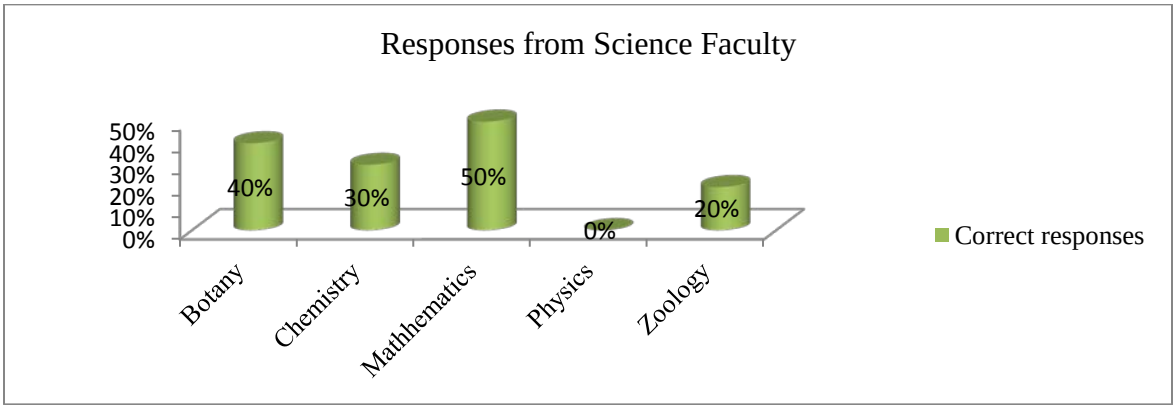

Fig.4 Responses from Science Faculty

It is clear from the above diagram that among respondents of arts faculty Economics 05(50%) has higher level on competency followed by Commerce, History, Philosophy, Sanskrit 02(20%) and rest of the respondents are not competent to revise a particular search result. Among the science faculty respondents, 05(50%) of Mathematics has higher level of competency followed by 04(40%) of Botany, 03(30%) of Chemistry and 02(20%) of Zoology and rest of the respondents are not competent to revise a particular search properly.

Boolean Operators are simple words (AND, OR, NOT or AND NOT) used as conjunctions to combine or exclude keywords in a search, resulting in more focused and productive results. This should save time and effort by eliminating inappropriate hits that must be scanned before discarding (library.alliant.edu). To assess the skills of using Boolean operator the query was to search a topic with several synonyms which Boolean operator is the appropriate.

TABLE 4 USE OF BOOLEAN OPERATOR

Options	Department wise respondents										
	Commerce (N=10)	Economics (N=10)	History (N=10)	Philosophy (N=10)	Sanskrit (N=10)	Botany (N=10)	Chemistry (N=10)	Mathematics (N=10)	Physics (N=10)	Zoology (N=10)	Total (N=100)
And	00 (00)	00 (00)	03 (30)	02 (20)	05 (50)	00 (00)	05 (50)	03 (30)	05 (50)	01 (10)	24 (24)
Or	10 (100)	04 (40)	04 (40)	03 (30)	02 (20)	04 (40)	01 (10)	06 (60)	05 (50)	05 (50)	44 (44)
Not	00 (00)	02 (20)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	02 (02)
Near	00 (00)	00 (00)	00 (00)	00 (00)	03 (30)	02 (20)	00 (00)	00 (00)	00 (00)	02 (20)	07 (07)
Adj.	00 (00)	04 (40)	03 (30)	05 (50)	00 (00)	00 (00)	02 (20)	01 (10)	00 (00)	00 (00)	15 (15)
Don't know	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	04 (40)	02 (20)	00 (00)	00 (00)	02 (20)	08 (08)
Total	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	100 (100)

Note: Figures in parenthesis indicate percentage

Table 4 describes that 10(100%) of the respondents of Commerce have the understanding of using Boolean operator followed by 06(60%) of Mathematics, 50(50%) of Zoology and Physics, 04(40%) of Economics, History, Botany, 03(30%) of Philosophy 02(20%) of Sanskrit and 01(10%) of Chemistry. Among the total respondents 44(44%) respondents have the understanding of Boolean operator, 08(08%) respondents have no idea about this, among these respondents 04(40%) of Botany, 02(20%) of Chemistry and Zoology and rest of the respondents has given wrong understanding about wildcard character.

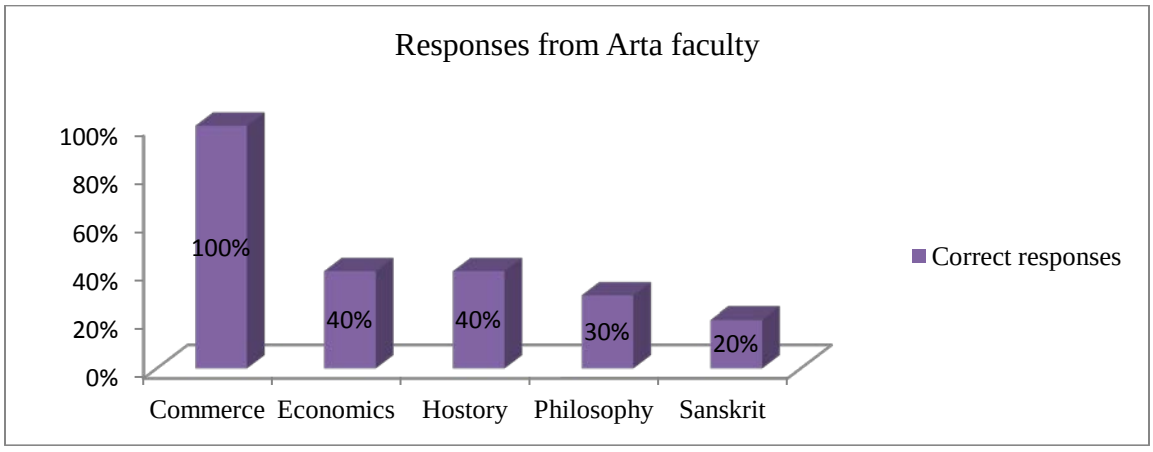

Fig.5 Responses from Arta faculty

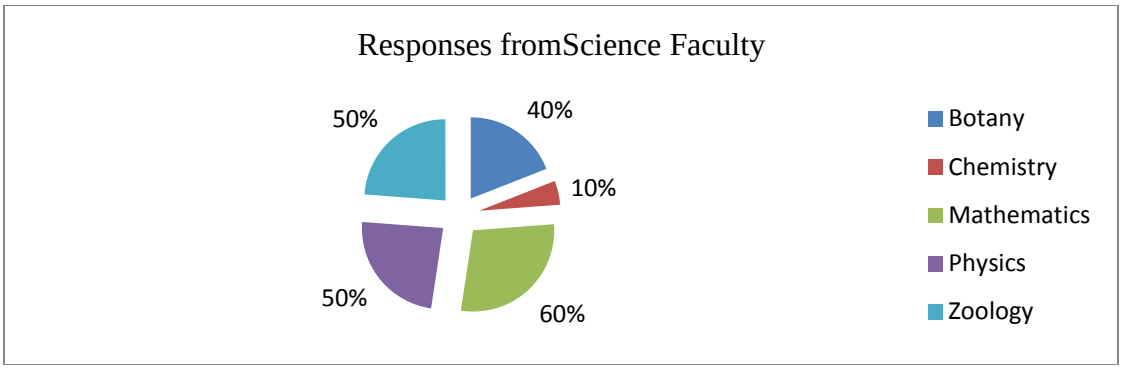

Fig.6 Responses from Science Faculty

The above charts describes that respondents of Commerce 10(100%) have the ability to understand the use of Boolean operator in searching information followed by Economics and History 04(40%), Philosophy 03(30%), Sanskrit 02(20%) and rest of the respondents of the arts faculty have no ability to understand the use of Boolean operators. Among the respondents of science faculty 06(60%) of Mathematics followed by Physics and Zoology 05(50%), Botany 04(40%), Chemistry 01(10%) and rest of the respondents have no idea about using Boolean operator in information search.

A wildcard character is a special character that represents one or more other characters. The most commonly used wildcard characters are the asterisk (*), which typically represents zero or more characters in a string of characters, and the question mark (?), which typically represents any one character. Wildcard character is used to search online resources. To assess the ability of using wildcard character respondents were asked to give their understanding if they use "educat*" in a journal database search what type of search results they expect.

TABLE 5 USE OF WILD CARD CHARACTER

Options	Department wise respondents										
	Commerce (N=10)	Economics (N=10)	History (N=10)	Philosophy (N=10)	Sanskrit (N=10)	Botany (N=10)	Chemistry (N=10)	Mathematics (N=10)	Physics (N=10)	Zoology (N=10)	Total (N=100)
Articles that only focus on education	02 (20)	00 (00)	05 (50)	02 (20)	02 (20)	01 (10)	04 (40)	01 (10)	04 (40)	01 (10)	22 (22)
Articles written only by educationists	00 (00)	00 (00)	00 (00)	03 (30)	01 (10)	00 (00)	00 (00)	00 (00)	00 (00)	01 (10)	05 (05)
Articles written only by educators	00 (00)	00 (00)	02 (20)	00 (00)	03 (30)	00 (00)	00 (00)	01 (10)	00 (00)	01 (10)	07 (07)
All articles that contain terms such as education, educationist, educators	02 (20)	09 (90)	03 (30)	05 (50)	04 (40)	06 (60)	06 (60)	03 (30)	04 (40)	06 (60)	48 (48)
Articles relating to the subject education	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)	01 (10)	00 (00)	01 (10)	02 (02)
Don't know	06 (60)	01 (10)	00 (00)	00 (00)	00 (00)	03 (30)	00 (00)	04 (40)	02 (20)	00 (00)	16 (16)
Total	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	10 (100)	100 (100)

Note: Figures in parenthesis indicate percentage

Table 5 describes that 09(90%) of the respondents of Economics posses actual level of understanding of using wildcard character in searching information and 06(60%) of Botany, Chemistry and Zoology, 05(50%) of Philosophy, 04(40%) of Physics, 03(30%) of History and Mathematics and 02(20%) of Commerce have such ability. Among the all the respondents 48(48%) of the respondents have the correct level of understanding about this and 16(16%) of respondents have no idea about using wildcard character and rest of the respondents have given some choices which are nearer to the correct level of understanding.

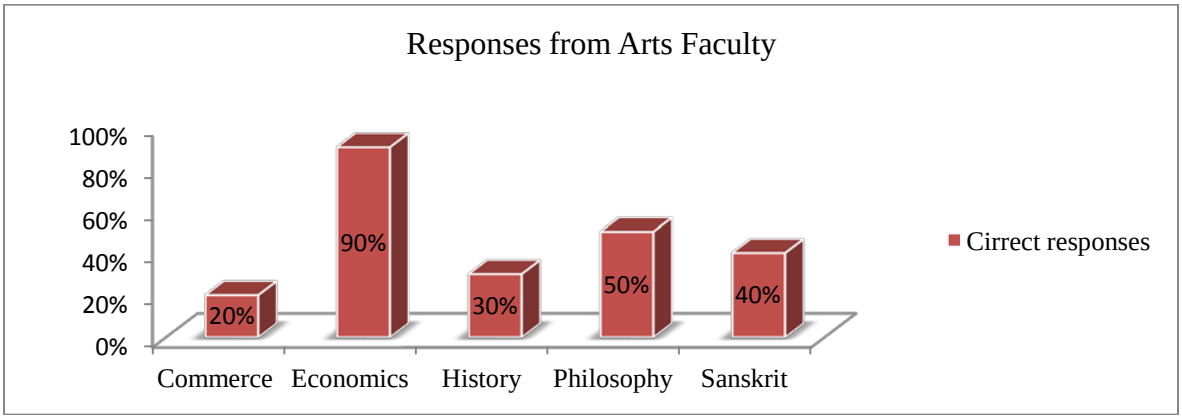

Fig.7 Responses from Arts Faculty

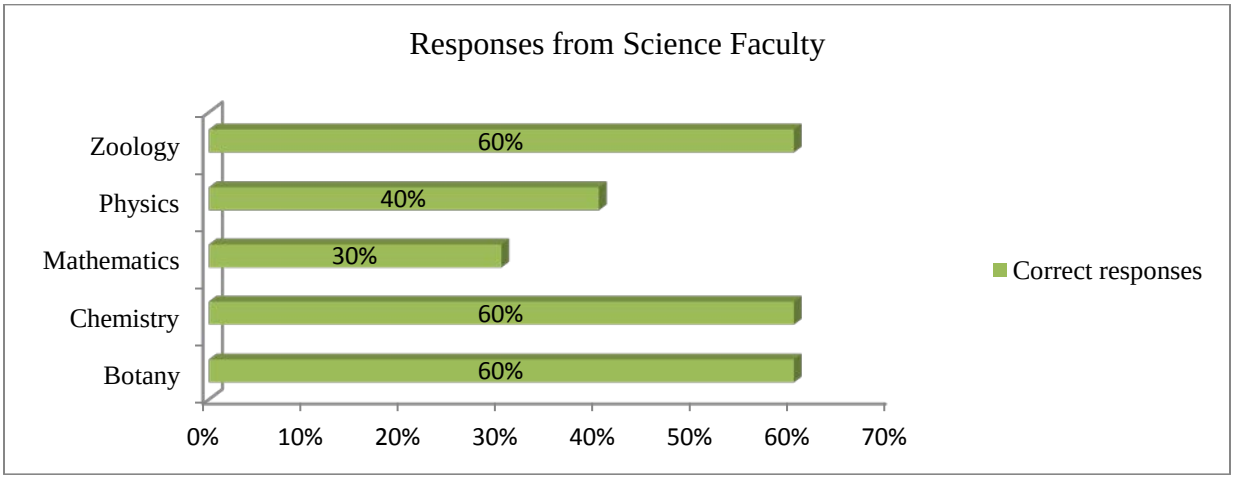

Fig.8 Responses from Science Faculty

It is evident from the above bar diagram that among the respondents of arts faculty Economics 09(90%) are competent in using Wildcard character in searching information followed by Philosophy 05(50%), Sanskrit 04(40%), History 03(30%) and Commerce 02(20%) and rest of the respondents have no clear understanding of using Wildcard character. Among the science faculty respondents Botany and Chemistry 06(60%) are competent to use Wildcard character in searching followed by Zoology 09(52.94%), Physics 04(40%), Mathematics 03(30%) and rest of the respondents are not competent in using Wildcard character in information searching.

VIII. RECOMMENDATIONS AND CONCLUSION

The present study aims at assessing the information literacy skills among the research scholars and faculty members of some selected departments of arts and science faculty of the University of Burdwan with a particular reference to their nature of information searching skills. The main intension of this study is to assess the level of information searching ability in print and electronic environment which is the need of the hour in the present context of critical information environment. It is evident from the above analysis that very less percentage 16(16%) of respondents has clear idea about library catalogue search to find out their required information in a single approach. Ability to revise the

search result, very less percentage 27(27%) of respondents have given correct response. While measuring the ability to conduct search in online environment using Boolean logic only 44(44%) has given correct responses. And to measure for extracting the information using Wildcard character the ability has increased to 48(48%) respondents. It can be inferred from the above discussion that the ability of the respondents to search information in print and online environment is not in balanced way. To increase such ability among the respondents university library should take the responsibility. It should conduct seminar, workshop, and training programme in the library training room or department wise through departmental/seminar/reference library by constituting the team of experts for delivering information literacy related activities. The proposed team of information literacy expert should deliver lecture with hands on practice in the course work for research students. On introduction of new services in the library the university library should publish information brochure and circulate it among its users community regularly. The library website should have an interactive portion to interact with the information literacy expert team regarding searching and using information for research purpose.

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