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Research Article

USAGE OF ONLINE DATABASES BY THE RESEARCH SCHOLARS OF SCIENCE DISCIPLINES IN GURU NANAK DEV UNIVERSITY, AMRITSAR: A CASE STUDY

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ABSTRACT

The present study attempts to find out the uses of online databases by the science research scholars of Guru Nanak Dev University (GNDU), Amritsar. The study deals with the methods of learning skills for using databases, frequency of using online databases, purpose of using databases, success rate in finding the information, problems faced in using online databases and usefulness of information from online databases. The study also aims to find out whether the online databases are able to satisfy the needs of the research scholars. A well-structured questionnaire was designed to collect the responses of research scholars regarding the use of online databases. The study reveals that all the research scholars are familiar with online databases and majority of them (72.73%) use SCOPUS database followed by SciFinder Scholars (68.18%) and Web of Science (58.18).

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INTRODUCTION

Innovations in ICT have brought radical changes the way information is generated, stored, processed and disseminated. Electronic publishing has been revolutionizing the format of recorded knowledge. Electronic information services are attracting users' attention in today's networked environment. Electronic journals and databases have numerous advantages over its print counterparts.¹As a result, Internet and other digital resources of information are widely used to cater to research and other information needs. E-journals and online databases open up many exciting opportunities and potentials for researchers by allowing greater accessibility, flexibility, data migration between systems and multiple search approaches s.a. keywords, discipline, author, country, publication date etc.

Online Databases at Guru Nanak Dev University

Guru Nanak Dev University founded in 1969 has scaled new heights in achieving excellence in academic, sports and cultural activities. The university attained highest status of "University with Potential for Excellence"² and has been accredited with A+ rating by the National Assessment and Accreditation Council. At present, the university has 13 faculties with 37 departments in Social Sciences, Humanities and Science and Technology, of which there are 11 science departments which are broadly divided into three faculties namely Faculty of

Sciences (Chemistry, Mathematics and Physics); Faculty of Applied Sciences (Food Science & Technology and Pharmaceutical Sciences) and Faculty of Life Sciences (Biotechnology, Botanical & Environmental Sciences, Human Genetics, Microbiology, Molecular Biology & Biochemistry and Zoology).

The university library called BhaiGurdas Library was established in March 1970. The library has total collection of more than 4,84,000 books related to different disciplines. It is subscribing 65 foreign and 80 Indian printed journals. An OPAC is available for searching multilingual Books, Thesis and dissertation, Serials holding and Manuscripts etc. University library is subscribing database of Sciverse Scopus and also getting access to 169 IEEE online journals and 9000 Conference Proceedings relating to Electronics Technology and Computer Science and Engineering. The University Library is a member of DELNET and also accessing 15000+ e-journals and some databases such as MathSciNet, SciFinder Scholar, Web of Science, Royal Society of Chemistry through e-ShodhSindhu.

Objectives

The objectives of the study are:

- To identify the extent of awareness and use of various online databases among the science research scholars;
- To find out the most preferred databases;

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- To identify the purposes of using online databases;
- To know how frequently the research scholars use online databases;
- To identify the place of accessing online databases by the research scholars;
- To find out the methods used for searching and access of online databases;
- To find out the usefulness of online databases;
- To know the problems faced in using online databases; and
- To know the satisfaction level of the research scholars with online databases.

Scope and Sample of the Study

The scope of the present study includes to 354 full-time Ph.D. research scholars (2015-2016) of science disciplines of Guru Nanak Dev University (GNDU), Amritsar. The study is further limited to the online databases available in GNDU.

REVIEW OF LITERATURE

Bar-Ilan, & others (2003)³ conducted a survey on the use of electronic databases and electronic journals accessed through the web by the academic staff of Israeli universities. The major findings of the survey showed that the use of electronic sources was widespread among the respondents and more than 50% of the respondents found the electronic services indispensable.

Singh & Gautam (2004)⁴ focused on access to information through online or CD-ROM media in Indian scenario. It revealed that many of the electronic databases were being created and made available today in India for use both inside and outside of the country.

Khan & Zaidi (2009)⁵ analyzed Online databases usage by research scholars of the Aligarh Muslim University (AMU) and revealed that majority of the research scholars were aware about J-gate, Science Direct, INSPEC, Compendex and Medline. It was further found from analysis that a high percentage (84.72%) of research scholars searched and accessed online databases directly whereas links through publisher websites received low priority.

Khan & others (2009)⁶ surveyed the use of on-line databases by faculty members and research scholars of Jawaharlal Nehru University (JNU) and Jamia Millia Islamia (JMI), New Delhi. The survey revealed that all the faculty members and research scholars were aware of the availability of online databases and largely used them for reference purpose in their research work and studies. It was also observed that a large number of respondents of both the universities were using field searching and Boolean operators to access information from online databases. Kaur & Randhawa (2010)⁷ analyzed the use of electronic databases in three university libraries of British Columbia, Canada and revealed that 82.85% of the students used the databases for their homework or assignments whereas 59.09% of the teachers used for their teaching purposes.

Naqvi (2012)⁸ investigated the use of electronic databases by postgraduate students and research scholars at GBPUAT Library India. The study showed that 50% of the postgraduate students and 48.93% of research scholars were using e-

databases to download articles for their research. The study concluded that 91.49% of the research scholars and 68.89% of the postgraduate students were satisfied with e-databases. A survey was made by Shaji & Jalaja (2012)⁹ to investigate the use and user perceptions of electronic information resources among the academic community especially among the faculty members of University of Calicut, Kerala which showed that the speed of availability and ease of accessibility of information made majority of the faculty members (88.89%) to make frequent use of electronic resources to obtain relevant information in their area of specialization.

Adeyomoye & others (2014)¹⁰ in their study on "Use of electronic databases among academics at Ondo State University of Science and Technology (OSUSTECH) Library, Okitipupa, Nigeria" found that 92% of the lecturers used the e-journals. 69.2% of them indicated the use of e-journals for research needs.

Uma (2014)¹¹ in her study on the use of online databases in the order of priority and ranking of databases by the faculty and research scholars of University of Hyderabad (UOH) and Osmania University (OU), Hyderabad reported that the user communities of both the universities were familiar with electronic databases and Science Direct was the highly used online database in both the universities.

METHODOLOGY ADOPTED AND DATA COLLECTION

To accomplish the objectives of the study, survey method is adopted. Random sampling technique is used for data collection. Therefore, a questionnaire was designed to collect the data for the present study. 130 questionnaires were distributed and 110 duly filled up questionnaires were received back showing overall response rate of 84.62 %. The questionnaire method has been supplemented by interview method to get additional information. In addition, the factual data has been taken from annual reports, library records and university publications.

Data Analysis

The collected data are analyzed and tabulated by employing statistical methods and presented as under:

Table 1 Familiarity of Research Scholars with Online Databases

Familiarity	Number of responses	Percentage
Yes	110	100.00
No	-	-
Total	110	100.00

Table 1 above clearly shows that all the research scholars are familiar with online databases.

Table 2 Use of Most Preferred Databases

Online databases	Number of responses	Percentage
SCOPUS	80	72.73
MathSciNet	44	40.00
SciFinder Scholar	75	68.18
Web of Science	64	58.18
Royal Society of Chemistry	50	45.45

(Multiple answers were permitted)

Table 2 shows that majority of the research scholars i.e. 72.73% use SCOPUS, followed by SciFinder Scholars by 68.18%, Web of Science by 58.18%, Royal Society of Chemistry by 45.45% and MathSciNet by 40.00%. Therefore, it is evident that SCOPUS, SciFinder Scholar and Web of Science are most popular databases among the research scholars.

Table 3 Purpose of Using Online Databases

Purpose of use	Number of responses	Percentage
For research work	88	80.00
For update subject knowledge	73	66.36
Others	51	46.36

(Multiple answers were permitted)

Table 3 indicates that majority of the research scholars i.e. 80% use online databases for their research work, 66.36% to update their subject knowledge and 46.36% for some other purposes.

Table 4 Frequency of Using Online Databases

Frequency of use	Number of responses	Percentage
2-3 times a week	33	30.00
Once a week	30	27.27
2-3 times a month	25	22.73
Once a month	15	13.64
Occasionally	07	06.36
Total	110	100.00

It is found from Table 4 that 30% research scholars use online databases 2-3 times a week, followed by 27.27% who use them once a week, 22.73% use them 2-3 times a month, 13.64% use database once a month and 6.36% use them occasionally.

Table 5 Place of Using Online Databases

Place of use	Number of responses	Percentage
Main Library	32	29.09
Departmental Library/Lab/Hostel	102	92.73

(Multiple answers were permitted)

Table 5 indicates that more users i.e. 92.73% of the research scholars use online databases in departmental library/lab while only 29.09% use in the main library.

Table 6 Method of Learning Database Usage Skills

Method of learning	Number of responses	Percentage
Self Learning	34	30.91
Guidance from the Library Staff	20	18.18
Guidance from Friends/Colleagues	47	42.73
Guidance from Computer Staff	09	08.18
Total	110	100.00

Table 6 indicates that 42.73% research scholars got guidance from their friends/colleagues for using the online databases, 30.91% learnt it through self instructions, only 18.18% got guidance from the library staff and 8.18% from computer staff.

Table 7 indicates that majority of the research scholars i.e. 71.82% search and access online databases directly, followed by links through search engines i.e. 57.27%, links through library website i.e. 35.45% and links through publisher website i.e. 10%.

Table 7 Methods of Searching and Accessing of Online Databases

Methods of search and access	Number of responses	Percentage
Links through Search Engines	63	57.27
Links through Library Website	39	35.45
Links through Publisher Website	11	10.00
Direct links through online databases	79	71.82

(Multiple answers were permitted)

It is clear from the table that links through search engines receive top priority while links through publisher website receives low priority.

Table 8 Success Rate in Finding the Information

Success rate	Number of responses	Percentage
100%	06	5.45
75-99%	58	52.73
50-74%	23	20.91
25-49%	14	12.73
Less than 25%	09	08.18
Total	110	100.00

Table 8 indicates that 52.73% of the respondents succeed in the range of 75-99% in finding information, 20.91% in the range of 50-74%, 12.73% in the range of 25-49% and 8.18% in the range of less than 25%. Only 5.45% have 100 percent success in finding the information.

Table 9 Usefulness of Information from Online Databases

Usefulness of information	Number of responses	Percentage
Most helpful	39	35.46
Helpful	62	56.36
Not helpful	09	08.18
Total	110	100.00

Table 9 shows that 56.36% research scholars feel that the information available from online databases is helpful, whereas 35.46% feel that the information is most helpful. Only 8.18% research scholars have responded that it is not helpful.

Table 10 Problems Faced in Using Online Databases

Problems faced	Number of responses	Percentage
Limited number of computers	10	09.09
Mass of irrelevant information	48	43.64
Hours of the library/lab	07	06.36
Coverage of online databases is not suited to my research	33	30.00
Slow downloading	12	10.91
Total	110	100.00

Table 10 shows the problems faced by the respondents in using online databases. It is found that 43.64% of the research scholars face the problem of mass of irrelevant information, followed by coverage of online databases is not suited to their research (30%). 10.91% of the research scholars face the problem while accessing online databases due to slow downloading, 9.09% are unable to access online databases due to limited number of computers. Only 6.36% of the research scholars face the problem due to the working hours of their library/lab.

Table 11 indicates that only 23.64% of the research scholars are fully satisfied with the information found through online

databases. 68.18% of the research scholars are partially satisfied whereas 8.18% are not satisfied.

Table 11 Satisfaction Level of Online Database Services

Satisfaction level	Number of responses	Percentage
Fully satisfied	26	23.64
Partially satisfied	75	68.18
Not satisfied	09	08.18
Total	110	100.00

Findings

The major findings of the study are:

- All the research scholars are aware of the online databases and this is a well used tool for research work.
- The most preferred databases are SCOPUS, SciFinder Scholar, Web of Science, Royal Society of Chemistry and MathSciNet.
- A majority of the research scholars i.e. 80% make use of the online databases mainly for research work followed by subject knowledge and for other purposes i.e. 66.36% and 46.36% respectively.
- 30% of the research scholars use online databases 2-3 times a week, 27.27% once a week, 22.73% 2-3 times a month, 13.64% once a month and 6.36% occasionally.
- A majority of the research scholars i.e. 92.73% use online databases at their departments while 29.09% are using online databases through the main library.
- 42.73% of the research scholars got guidance from their friends/colleagues for using online databases, 30.91% learnt it through self instruction, 18.18% got guidance from the library staff and 8.18% from computer staff.
- A high percentage of research scholars i.e. 71.82% search and access online databases directly, followed by links through search engines i.e. 57.27% and links through library website i.e. 35.45% while links through publisher website receives low priority i.e. 10%.
- A majority of the research scholars i.e. 52.73% have 75-99% success rate in finding the required information while 5.45% have the least success rate.
- 35.46% of the research scholars have shown that information from online databases is most helpful.
- The most common problem faced by the research scholars is mass of irrelevant information.
- Only 23.64% of the research scholars are fully satisfied with the information they find through online databases.

Suggestions

Based on the findings of the study, the following suggestions are made to strengthen the research activities and improve the use of online databases among the research scholars in the university:

- In order to strengthen the research activities more online databases need to be subscribed.
- The number of computers should be increased in the library.
- It is found that only 18.18% of the research scholars learnt the online databases through guidance from the library staff. It is suggested that the librarian's visits to

the departments should be made compulsory to provide online database services more efficiently and effectively.

- Instructions about 'How to Use Online Databases' should be available in the library.
- Printing facility should be provided in the library, so that the research scholars can take print outs of the material that they need.
- Efforts should be made to increase the speed of the Internet access.
- The success rate in finding the required information is quite good, but it can be improved. The study also found that some of the respondents have less than 25% success in finding the information. The reason may be that they do not know how to find the information. Therefore, it is suggested that more training sessions or regular workshops should be organized in the library to enhance the usage of online databases.

CONCLUSION

From this study, it is revealed that all the research scholars are familiar with online databases as well. A majority of the research scholars use online databases for their research work. The study also revealed that the information from online databases is helpful. But it also identifies that some of the research scholars face problems in finding the required information.

In order to make online databases more beneficial, feedback can be taken from faculty and research scholars and from their respective departments so that their needs can be determined. The Guru Nanak Dev University Library is making all its efforts to provide the benefits of e-resources and services to its users. To conclude, we can say that online databases are the major sources of information in the era of technology for the research scholars of science based disciplines and these are in good use at the university level.

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