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Use of Electronic Databases by Postgraduate Students and Research Scholars at GBPUAT Library, India

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Abstract

The aim of this paper is to examine the impact and use of e-databases at GBPUAT library because a huge amount is invested for the subscription, growth, and management of e-databases. The main aim is to determine the purpose of use of e-databases; and to find out their level of use, level of satisfaction, problems, and instructions/help in accessing of e-databases. To collect research data, questionnaire was administered randomly among 250 registered postgraduate students and research scholars of GBPUAT and 143 filled in questionnaires were returned. Finally, the researcher selected 137 useable questionnaires for the analysis using statistical techniques to derive the result. The study reveals that e-databases such as AGRIS, AGRICOLA, CAB abstract, and agriculture & natural resources were highly used among the postgraduate students and research scholars. The majority of postgraduate students and research scholars got training and individual instruction in accessing databases and most of the research scholars were satisfied with the available databases at GBPUAT library. The study identifies the importance of e-databases and the role of user education program or information literacy program to boost the usage of available databases at GBPUAT library.

Introduction

In higher education, two major shifts have been identified. First shift shows that the higher education is moving away from a teaching to a learning culture whereas the second shift reveals that the revolution in information technology is changing delivery of education. Academic libraries have taken these two shifts into account while planning their services (Toner 2008, & Bennett 2003). Due to the very slow growth of agricultural universities during the period of 1947-60, the history of agricultural university libraries in India starts with the green revolution, a dream of Pt. Jawaharlal Nehru, the first Prime Minister of India, led the foundation of G. B. Pant University of Agriculture and Technology (GBPUAT), Pantnagar, on 17 November 1960. The GBPUAT is a symbol of successful partnership between India and the United States and has now become a leading institution for producing quality human resources, technology and its direct utilization for the agricultural development of the country. Now, India has a total of 46 agricultural universities, and their libraries function in different parts of the country (Rokade, 2005; Rathinasabapathy and Amudhavalli, 2006).

The GBPUAT library has a highly specialized collection of 3,68,119 documents (*GBPUAT Library Annual Report*, 2004-05) in the field of agriculture, veterinary sciences, animal husbandry, home

science, fisheries, basic sciences, humanities, technology & other allied subjects. The library collection as textbooks, monographs, advanced treatises, research publications, reference works, popular works, pictorial works, theses, periodicals, standards, reprints, globes, toposheets, records, films, microfilms, tapes, cards, maps, other graphic works, CD-ROM, full-text e-databases (CD-ROM/online databases) of e-resources, is primarily enhanced to the curricular needs of the university faculties, and to the research and extension activities of the university. All levels of reading material required to serve the needs of the community are acquired.

E-Database

A large, regularly updated file of digitized information (bibliographic records, abstracts, full-text documents, directory entries, images, statistics, etc.) related to a specific subject or field, consisting of records of uniform format organized for ease and speed of search and retrieval and managed with the aid of database management system (DBMS) software. Content is created by the database producer (i.e. Thomson Reuters), which usually publishes a print version (*Biological Abstracts*) and leases the content to one or more database vendors (EBSCO, OVID, etc.) that provide electronic access to the data after it has been converted to machine-readable form (*BIOSIS*), usually on CD-ROM or online via the Internet, using proprietary search software.

An electronic database in which the content is revised and/or augmented, usually on a regular basis, to provide current information or to add recently published sources and also designs to provide information about a very specific topic, as opposed to a range of topics, usually for a limited audience. Most journal databases are updated on a regular basis as new issues are published and indexed. Most databases used in libraries are catalogs, periodical indexes, abstracting services, and full-text reference resources leased annually under licensing agreements that limit access to registered borrowers and library staff (*ODLIS*). There are many, many different types of electronic databases in the world today, including statistical databases, image databases, and others. These databases are becoming very important these days as they are more up-to-date, and can be accessed anywhere, crossing all geographical boundaries. Such electronic databases are very valuable and useful for time-saving while conducting R&D activities.

Objectives, Scope and Limitations

E-databases in agricultural libraries are making a significant growth as a part of library collection. A huge amount is invested in the development of e-databases in the libraries. The study offers to identify the acceptance of e-databases in the library under study along with its advantages, performances, user's satisfaction and barriers faced during the use of e-databases. This study was conducted to seek user's opinion concerning the impact and use of e-databases in GBPUAT library.

The objectives of the study were to:
- determine the purpose for which e-databases are used by the postgraduate students and research scholars;
- ascertain the awareness and use of available e-databases by the postgraduate students and research scholars;
- identify the frequently used e-databases by the postgraduate students and research scholars;
- find out the problems faced and the types of instruction/help got by the postgraduate students and research scholars while accessing and using e-databases;
- ascertain the level of user's satisfaction and recommend appropriate solutions regarding the effective use of available e-databases.

The scope and limitation of the study is confined to the users (postgraduate students and research scholars) of GBPUAT library regarding the effective use of e-databases.

Review Literature

Most of the universities provide e-databases to their users to support teaching, research and development. The literature shows that e-databases with their retrieval from network capabilities, have

been gradually replacing some of their printed counterparts. In order to utilize the growing range of e-databases, P.G. Students and research scholars must acquire and practice the skills necessary to exploit them. "For students using a variety of on-line databases, it is as though they were parking lot attendants, where every vehicle is not only a different make and model but has a different configuration" (Blandy and Libutti, 1995). The study results showed that the students and faculty are aware of e-sources and also the internet. Even though a majority of the academic community uses electronic information sources for their academic-related work (Kumar and Kumar, 2010). A large number of social scientists are aware of the e-resources (such as e-books, e-journals, e-encyclopedias, e-theses, CD-ROM databases, e-mail, internet and the OPAC) and they use these e-resources for their research work. Many faculty members strongly agreed with the necessity for computer and internet literacy to access information and a majority of social scientists were satisfied with the e-resources available at the NASSDOC library (Haridasan and Khan, 2009) and Kwok (1992) sampled a group of scientists and examined the use of materials such as CD-ROM databases, online databases, journals, monographs etc. to do research. Singh and Gautam (2004) focused on access to information through online or CD-ROM media that has remained a challenging effort for both the user and the intermediary. It further reveals that many of the e-databases are being created and made available today in India for use both within the country and outside. Swain, (2010) in his study reveals that the majority of students are aware of EBSCO, and Emerald Management Xtra.

Calvert (2000) has evaluated the impact of electronic journals and aggregate databases on interlibrary loan activities. His findings reveal that results are not significant enough to justify searching, borrowing requests in aggregate databases and changing current inter-library loan procedure for searching request before ordering. Mercado (1999) has suggests in his study that the library users know how to search and learn critical thinking skills for databases and keyword selection. Bates (1996) study found that most humanities scholars made little use of online databases. Scholars appreciated that the databases covered many topics, but complained about the difficulty of their search language and the lack of availability of desired resources. It is interesting to note that scholars regarded themselves as experts in their subjects and did not expect to learn anything new from the databases.

Due to the growing number of databases of e-resources, the agricultural university libraries are interested in subscribing them considering their advantages. The transition from print to electronic has a great impact on the usage of library and research. So far, few studies have already been conducted to identify the impact and use of e-databases at the university libraries. The library has now developed a number of e-databases to meet the ever growing expectations of GBPUAT community. It is very imperative to know how far postgraduate students and research scholars are making use of existing databases and impact of e-databases on their research work.

Research Methodology

Due to a large number of agricultural universities in India, GBPUAT was selected for conducting in-depth study. The questionnaire survey was the research method used in the collection of data for the study. Validated questionnaire was tested and administered randomly among 250 (10.23%) registered postgraduate students and research scholars of GBPUAT and 143 (57.2%) students returned the filled in questionnaires. Further, the researcher selected 137 (54.8%) useable questionnaires for the analysis and interpretation using statistical techniques to draw the qualitative and quantitative results.

Data Analysis and Interpretation

To determine the impact and usage of e-databases at GBPUAT, the analysis and description of the study showed that 90 (60%) useable questionnaires were from postgraduate students while 47 (47%) from research scholars. The collected data reveals that highest percentage of respondent's questionnaires i.e. 90 (60%) questionnaires received were from postgraduate students.

Frequency of visit to the library

Table I. Frequency of visit to the library

Frequency	Respondents	
	P.G. Students N=90	Research Scholars N=47
Daily	16 (17.78)	20 (42.55)
2-3 Times in a week	46 (51.11)	22 (46.81)
Once in a Month	21 (23.33)	3 (6.38)
Occasionally	1(1.11)	1 (2.13)
Never	6 (6.67)	1 (2.13)

(Figures in parentheses are percentage)

For the convenience of the study, the frequency of visit for using e-databases has been classified into five categories as shown in table I. It is observed that majority 51.11% of the postgraduate students visited the library 2-3 times in a week, whereas 46.81% and 42.55% of the research scholars visited the library 2-3 times in a week and daily.

Purpose of usage of e-databases

**Table II. Purpose of usage of e-databases**

Purpose	Respondents	
	P.G. Students N=90	Research Scholars N=47
To update knowledge	23 (25.56)	14 (29.79)
To consult databases for research	18 (20)	23 (48.93)
To download articles	45 (50)	6 (12.77)
All the purposes	4 (4.44)	4 (8.51)

(Figures in parentheses are percentage)

The purpose is crucial for understanding the usage of e-databases. The above data in table II shows that 50% and 25.56% of the postgraduate students used e-databases to download articles and to update knowledge respectively, whereas 48.93% and 29.79% of the research scholars consulted the available e-databases for their research and to update their knowledge respectively.

Awareness and use of e-databases

Fig. I. Awareness and use of e-databases
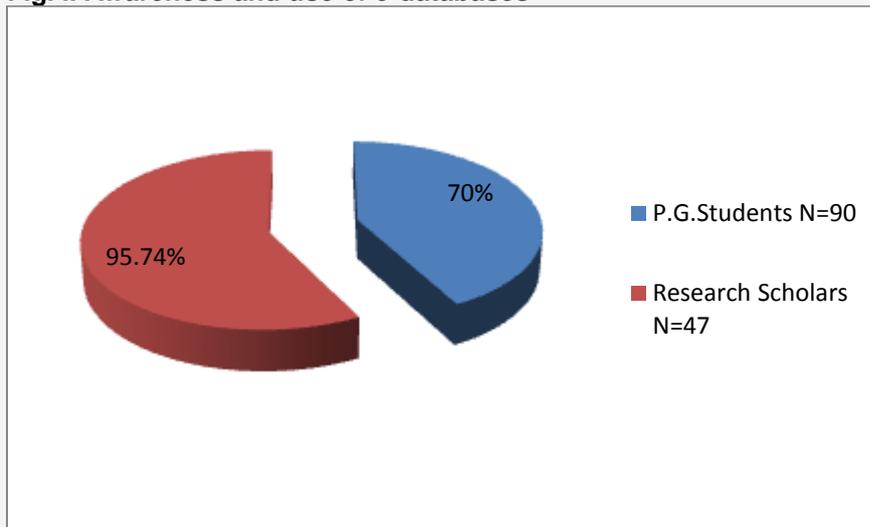
Now, e-databases are mushrooming in agricultural university libraries as fig. I reveals that the majority 95.74% of the research scholars and 70% of the postgraduate students were well aware about the available databases and they also used these for their different purposes.

Frequency of using e-databases

Table III
Frequency of using e-databases

Databases	Respondents											
	P.G. Students N=63						Research Scholars N=45					
	MF	F	SF	R	N	M (R)	MF	F	SF	R	N	M (R)
AGRIS	27 (42.86)	16 (25.40)	8 (12.70)	3 (4.76)	9 (14.28)	2.78 (1)	28 (62.22)	10 (22.22)	3 (6.67)	3 (6.67)	1 (2.22)	3.36 (2)
AGRICOLA	15 (23.81)	26 (41.27)	8 (12.70)	4 (6.35)	10 (15.87)	2.51 (2)	23 (51.11)	13 (28.89)	1 (2.22)	4 (8.89)	4 (8.89)	3.04 (3)
Agriculture & Natural Resources	19 (30.16)	14 (22.22)	13 (20.63)	4 (6.35)	13 (20.63)	2.35 (4)	16 (35.56)	9 (20)	2 (4.44)	7 (15.56)	11 (24.44)	2.27 (4)
Biotechnology	9 (14.28)	12 (19.05)	6 (9.52)	8 (12.70)	28 (44.44)	1.46 (5)	9 (20)	15 (33.33)	2 (4.44)	1 (2.22)	18 (40)	1.91 (6)
CAB Abstract	21 (33.33)	17 (26.98)	5 (7.94)	5 (7.94)	15 (23.81)	2.38 (3)	26 (57.78)	17 (37.78)	1 (2.22)	-	1 (2.22)	3.49 (1)
FSTA	12 (19.05)	7 (11.11)	7 (11.11)	9 (14.28)	28 (44.44)	1.46 (5)	6 (13.33)	10 (22.22)	8 (17.78)	1 (2.22)	20 (44.44)	1.58 (7)
Water Resource Abstract	2 (3.17)	10 (15.87)	7 (11.11)	6 (9.52)	38 (60.32)	0.92 (8)	4 (8.89)	6 (13.33)	12 (26.67)	-	23 (51.11)	1.29 (9)
Zoological Record	5 (7.94)	10 (15.87)	7 (11.11)	8 (12.70)	33 (52.38)	1.14 (7)	8 (17.78)	5 (11.11)	7 (15.56)	2 (4.44)	23 (51.11)	1.40 (8)
BIOSIS	6 (9.52)	8 (12.70)	10 (15.87)	6 (9.52)	33 (52.38)	1.17 (6)	13 (28.89)	7 (15.56)	7 (15.56)	1 (2.22)	17 (37.78)	1.96 (5)

(MF=Most Frequently, F= Frequently, SF=Somewhat Frequently, R= Rarely, N=Never, M=Mean & R=Rank)
(Figures in parentheses are percentage)

The library is subscribing some internationally prominent e-databases for searching the latest research literature on agriculture and these e-databases have become an important part of agricultural university libraries. The data in table III regarding the usage of e-databases presented that AGRIS was the most frequently used e-database by 42.86% of the postgraduate students, followed by CAB abstract (33.33%), agriculture & natural resources (30.16%) and AGRICOLA (23.81%) respectively. Whereas, AGRICOLA, CAB abstract, AGRIS, and Agriculture & Natural Resources were the frequently used e-databases by 41.27%, 26.98%, 25.40%, and 22.22% of the postgraduate students respectively.

Similarly, AGRIS was the most frequently used e-database by the highest 62.22% of the research scholars, followed by CAB abstract (57.78%), AGRICOLA (51.11%), agriculture & natural resources (35.56%), and BIOSIS (28.89%) respectively. This was also evident from the table that CAB Abstract, Biotechnology and AGRICOLA were the frequently used e-databases by 37.78%, 33.33% and 28.89% of the research scholars respectively. Only 26.67% of the research scholars used water resource abstract somewhat frequently.

Reasons for unawareness about e-databases

Table IV. Reasons for unawareness

Reasons	Respondents	
	P.G. Students N=27	Research Scholars N=2
Lack of skills	14 (51.85)	-
Costly	-	-
Lack of time	9 (33.33)	1 (50)
Poor facility	4 (14.81)	1 (50)

(Figures in parentheses are percentage)

Table IV attempts to reveal the reasons that 51.85% and 33.33% of the postgraduate students were not using e-databases due to lack of skills and lack of time respectively, whereas 50% and 50% of the research scholars were not using e-databases due to lack of time and poor facility respectively.

*Problem in using e-databases*

Table V. Problems in using e-databases

Problems	Respondents			
	P.G. Students N=63		Research Scholars N=45	
	Yes	No	Yes	No
Technical	7 (11.11)	56 (88.89)	3 (6.67)	42 (93.33)
Connectivity	15 (23.81)	48 (76.19)	14 (31.11)	31 (68.89)
Downloading	16 (25.40)	47 (74.60)	11 (24.44)	34 (75.56)
Interrupted power supply	5 (7.94)	58 (92.06)	1 (2.22)	44 (97.78)
Lack of guidance	34 (53.97)	29 (46.03)	11 (24.44)	34 (75.56)

(Figures in parentheses are percentage)

It is also important to know the problems that are faced by the postgraduate students and research scholars in using e-databases as mentioned in table V. The analysis of tabulated data reveals that majority 53.97% of the postgraduate students had problems due to lack of guidance while using e-databases, followed by slow downloading (25.40%), whereas 31.11% of the research scholars also faced connectivity problem in using e-databases.

Instruction/help in using e-databases

Fig. II. Instruction/help in using e-databases
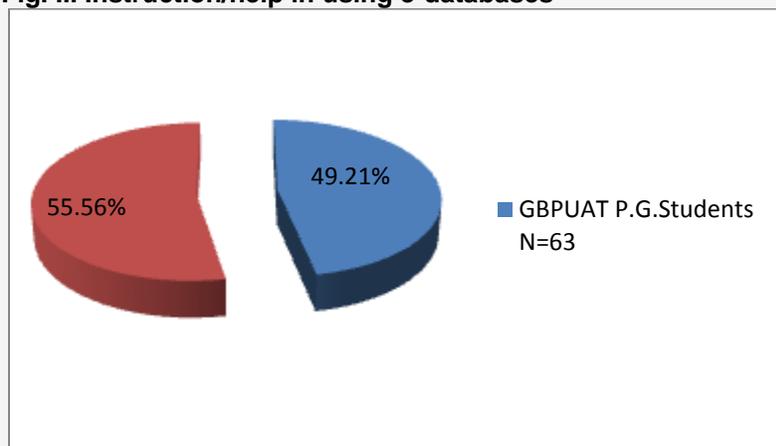
For maximum utilization of e-databases of library, it is necessary that users should be instructed in accessing and browsing of library e-databases. The fig. II indicates that majority 55.56% of the research scholars and 49.21% of the postgraduate students got instruction/help, while using e-databases.

Types of instruction/help in using e-databases

Table VI. Types of instruction/help in using e-databases

Types of Instruction/Help	Respondents	
	P.G. Students N=31	Research Scholars N=25
Training given by the library	17 (54.84)	12 (48)
Online instruction/ guidance	10 (32.26)	8 (32)
Individual instruction	15 (48.89)	12 (48)
Help by your library colleagues	6 (19.35)	8 (32)

(Figures within parenthesis are %age) (Multiple answers were permitted)

In the user education program, various types of instructions are given to the users in using e-databases in the library. Data in table VI depicts that 54.84% of the postgraduate students received training provided by the library in using e-databases, followed by individual instruction by library staff (48.89%). Whereas, 48%

of the research scholars got training given by the library in using e-databases, followed by individual instruction by library staff (48%).

Satisfaction with e-databases
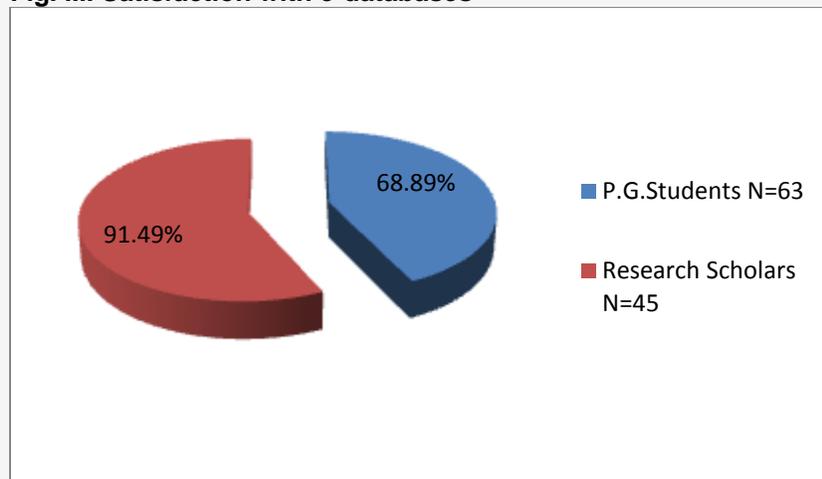
Fig. III. Satisfaction with e-databases

Figure III reveals that majority 91.49% of the research scholars and 68.89% of the postgraduate students were satisfied with e-databases. This is evident that e-databases were preferred form among the research scholars of the university.

Summary of Findings

The findings of the study conducted on the usage of e-databases among the postgraduate students and research scholars at GBPUAT can be summarized as follows:
- Majority of the postgraduate students and research scholars visited the library 2-3 times in a week, and 2-3 times in a week & daily for using the available e-databases respectively.
- A large number of postgraduate students and research scholars were using e-databases to download articles and for their research respectively.
- The majority of the research scholars and postgraduate students were well aware about the available e-databases and they also used these for fulfilling their purposes.
- The mean use frequency score and ranking of e-databases among the postgraduate students and research scholars indicated that AGRIS, AGRICOLA, CAB abstract, and agriculture & natural resources were highly used databases by the postgraduate students, while CAB abstract, AGRIS, AGRICOLA, agriculture & natural resources, BIOSIS, and biotechnology were highly used e-databases among the research scholars.
- postgraduate students were not using e-databases due to lack of skills and lack of time, whereas research scholars were not using due to lack of time and poor facility.
- The majority of the postgraduate students had problems due to lack of guidance and slow downloading, whereas research scholars also faced problem while using e-databases due to connectivity.
- The majority of the research scholars and postgraduate students got instruction/help while using e-databases.
- The majority of the postgraduate students and research scholars got training and individual instruction while using e-databases.
- The majority of the research scholars were satisfied with the available e-databases and these were the preferred resources among the research scholars of the university.

Conclusion and Recommendations

Due to the advancement in technologies, agricultural university libraries moved from traditional to digital environment. To meet the ever-increasing demands of users, agricultural libraries are now subscribing a large number of e-databases. The adequate computer literacy in using the existing databases has become the need of the hour. The study reveals the effective use of available e-databases with a few constraints.

This study, therefore, recommends the following:

- Due to the paradigm shift in services offered throughout the world, university library should subscribe more number of databases of e-resources. More number of networked computers should also be purchased and installed in the library with appropriate packages or software for searching and browsing the needed information.
- University library should intensify their awareness campaigns concerning the availability of databases of e-resources. The use of e-mail alert system, text messages and prizes for those who use a lot of databases of e-resources should be considered by the university library as methods of promotion.
- Library-centered services are changing to user-centered. Librarian and library staff should improve their skills by attending more training program on e-database searching and retrieval in order to provide training to the users more effectively.
- For maximum utilization of databases of e-resources, library should provide orientation assistance to the users and one credit course BHS-610 entitled "Storage and Retrieval of Scientific and Technical Information.

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