



Investigation and analysis of current use of electronic resources in university libraries

Wu Shuling

*The Library of Shaanxi University of Science and Technology, Xianyang,
Shaanxi, People's Republic of China*

Abstract

Purpose – In recent years, electronic resources have become the library's important storage of a university library, and the fund purchased electronic resources also increased quickly, year after year. In order to find out the readers' present conditions, difficulties and requirement of using e-resources, The Library of Shaanxi University of Science and Technology, carried out sampling, questioning and investigating of all teachers and students at campus. The purpose of this paper is to present the findings of this investigation.

Design/methodology/approach – The investigation was carried out in 206.3 at the campus, and the investigative target involves teachers, scientific staff, cadre, graduate students, scientific staff, undergraduate students, and some training students, from 15 institutes in the whole university. It centers on seven subjects, designs 24 question and 155 selective answers, and everyone is multilateral, 1,000 questionnaires were sent out, 909 reclaimed. The ratio is 90.9 percent.

Findings – The investigative result shows that: nearly half of the readers investigated are satisfied with e-resources of our university. At present, the main way that reader's obtained rebases or literature is from traditional library storage. This illustrated that the printing literature obtained important functions. The e-book does not substitute the traditional printed book. The construction of library storage should advocate the printed one. Readers selecting the printed and e-book occupy the greatest majority. This shows that the two type of literature are not completely substituted, only mutually supple. The way readers liked obtaining information is to skim the homepage of the library. This indicated the homepage had become the important window to give publicity and serve the outside. It also shows the use of reading on screen, non-familiarizing the structure and the retrieval method. Showing that the net condition and computer facilities are the main external factors.

Research limitations/implications – This paper analyses the consciousness of using e-resources, and the ability of obtaining literature for university readers, by investigating some readers' utility of e-resources at Shaanxi University of Science and Technology. Therefore the readers' range is limited.

Practical implications – In this paper the result from one side reflects every unit and layer personnel's utilizing condition and difficulty of e-literature at the whole university. By investigating and analyzing, the work emphasis of the library is defined.

Originality/value – The investigating table does not only look into some teachers and students' utilizing condition, and readers' opinions and proposing to use the library's, but also obtains the disseminated fanfaron to all people using the library. By angling the result, it supplies theoretic foundation of e-resources' order, storage's construction, readers' serve, etc.

Keywords Electronic media, University libraries, Information services, China

Paper type Research paper



Introduction

In recent years, electronic information has gradually become a major resource in every university library. A statistical analysis of the use of the electronic resources has

become a hot issue in the field of library study. Electronic documents differ from the traditional paper document in the following aspects: paper document is tangible, and statistics can be done according to the readers' registering records; while electronic document is intangible and statistics are done by the logging frequency. Some database managers provide the statistics, but others do not. Even if they provide the service, it cannot meet the needs of the library. Therefore, it is an effective way to conduct an investigation of the use of electronic resources by questionnaires. The author takes as an example the teachers and students' use of electronic resources in Shaanxi University of Science and Technology, analyzes the university readers' awareness of use of electronic resources and their ability to acquire document information, and then analyzes the reasons caused by the situation, then puts forward the countermeasures on improving the information service of the library.

By the end of 2005, the library of Shaanxi University of Science and Technology owned 16 specialized databases including: CNKI, CA, etc. and over 110,000 electronic books. There are a variety of databases covering abstract, bibliographic data and whole-length type. The library electronic holdings, an indispensable component in teaching and scientific research, cover all the subjects. The outlay for purchasing the electronic resources starts at 60,000 yuan in 2000 to 1,100,000 yuan in 2005. The accumulative total has exceeded 2000,000 yuan. The library of Shaanxi University of Science and Technology conducted a questionnaire investigation in order to know the benefits such a large outlay, and the difficulties and needs of the readers' using the electronic resources.

The content, method and object of investigation

The investigation was conducted in the university in March, 2006, involving the teachers, scientific research personnel, cadres, postgraduates, college students and a few junior college students from 15 colleges and departments. The scale and size of every college, and the ratio of different types of readers, which represents basically, the situation of the readers, determine the number of people under investigation. The investigation questions are mainly as follows:

- The basic information of the people investigated (including the colleges and departments they belong to, their age range, the type of readers, their educational background, and academic title, etc.).
- The readers' understanding about the electronic information resources of the library and the service concerned.
- The readers' use of all types of electronic resources of the library.
- An investigation of the readers' ability to use electronic resources.
- An evaluation on whether the readers are satisfied with electronic information resources.
- The situation of the readers' being involved in the training provided by the library.
- Further jobs to be done on the electronic resources, especially the service of network database.

In total, 24 questions and 155 choices have been designed around seven subjects listed above. Each question includes multiple choices. The people investigated can simply tick inside the bracket.

A total of 1,000 questionnaires have been sent out, among which 909 have been returned. The rate is 90.9 percent. Among them 404 were scientific research personnel, which accounts for 44.4 percent; 260 postgraduates, which accounts for 28.6 percent; and 245 college students, which accounts for 27 percent. The type, academic title, educational background and age of the people investigated are shown in Table I.

From the academic title, educational background and age range of the people investigated, the proportion of the people of every level and age group corresponds with the teacher-student ratio in the whole university. The investigation data reflect to some degree the situation of the personnel (of different types, different academic titles, different educational backgrounds) using electronic information resources in the library.

The result and analysis of the investigation

The readers' knowledge about the electronic resources of the library

In order to solve the pertinent difficulties and problems of the readers' using electronic information resources, we conducted an investigation, regarding the degree of knowledge they have on the electronic resources, according to the age range and the type of the reader (see Table II).

From Table II, it can be seen clearly that the number of people who are knowledgeable on the electronic resources account for 18.2 percent, the people knowing very little account for 77.4 percent and those who know nothing account for 4.4 percent. The overwhelming majority of the readers know a little about electronic resources. Those who know most and those who know nothing account for a small percentage.

Their (the readers of different types, different academic titles) attitudes towards electronic resources of the library and their difference in using electronic resources

Table III shows clearly that the assistants make the most use of "printed periodicals", teachers and students use many networks databases and the postgraduates make the most use of network databases, while the others choose documents either of printed copy or electronic copy. The reason why the assistants make the most use of printer periodicals, are as follows:

- It is not long since they were teaching and they are busy preparing their lessons and improving their teaching skills, so they have little time to do scientific research.
- Network is not available at home because they cannot afford it.

The results of the investigation on the question: "printed and electronic periodical, which do you prefer?" is shown clearly in Figure 1: among all the readers, 49.6 percent chose printed periodicals. College students prefer printed periodicals, much more than teachers and postgraduates do. In total, 40.2 percent chose electronic periodicals, among them postgraduates and teacher's accounting for a large percentage. A total of 12.4 percent chose network databases, which are mostly used by postgraduates.

The author presents two reasons: first, teachers and postgraduates have stronger awareness of information and are in greater need of documents. They are also eager to join the training classes on the use of electronic resources, and they are familiar with the electronic resources and methods for searching for materials. However, the college students are busy with their studies and they use mainly reference books for their research. With the outlay's raising on buying books, the readers' needs are met.

Type of the People Investigated	Proportion (%)		Academic title	Proportion (%)		Educational background	Proportion (%)		Age range	Proportion (%)	
	Number	Proportion (%)		Number	Proportion (%)		Number	Proportion (%)		Number	Proportion (%)
Teacher Scientific research personnel	285	31.4	Professor	49	12.1	Doctor	24	2.6	20-29	632	69.5
	39	4.3	Associate professor	111	27.5	Master	374	41.1	30-39	154	16.9
Cadre	80	8.8	Intermediate Academic title	165	40.8	Undergraduate	490	53.9	40-49	87	9.6
Postgraduate	260	28.6	Elementary Academic title	79	19.6	Junior college student	21	2.3	50-55	27	3
Student	245	27	Teaching staff	404	44.4	Postgraduate	260	28.6	Over 56	9	1
Total	909								College student	245	27

Use of electronic resources

Table I.
The type, academic title, educational background and age range of the people investigated

Table II.
Statistics on the readers'
(of every age, every type)
knowledge about
electronic resources

	20-29 (%)	30-39 (%)	40-49 (%)	50-55 (%)	≥56 (%)	Total (%)	Teacher (%)	Postgraduate (%)	College student (%)	Total (%)
Know a lot	17.2	20.8	19.5	22.2	11.1	18.2	20.8	27.7	3.7	18.2
Know a little	77.1	79.2	78.2	70.4	88.9	77.4	80	68.8	85.7	77.4
Know nothing	5.7		2.3	7.4		4.4	1.5	3.1	10.6	4.4
Total (%)	69.5	16.9	9.6	3	1		44.4	28.6	27	

Note: Every percentage in the chart means the number of the people investigated divides the total number of the people

	Associate professor			Scientific research personnel			Total (%)			
	Professor (%)	Tutor (%)	Assistant (%)	Teacher (%)	Scientific research personnel (%)	Cadre (%)				
Printed periodical	28.9	24.8	27.7	84.6	27.2	23.4	19.6	30.5	23.9	27.4
Both printed and electronic copies	48.5	47.8	44.1	9.2	45.8	47.4	48.1	42	42.6	47.6
Network Database	11.3	14.2	17.5	6.2	15.3	19.8	21	12.2	18.9	18.9
Electronic periodical	11.3	11.5	10.7		10.6	9.4	11	12.2	11.3	12
Others		1.8	1.1		0.9			3.1	3.3	2.5

Use of electronic resources

Table III.
Their (the readers of different types, different academic titles) attitudes towards electronic resources of the library and their difference in using electronic resources

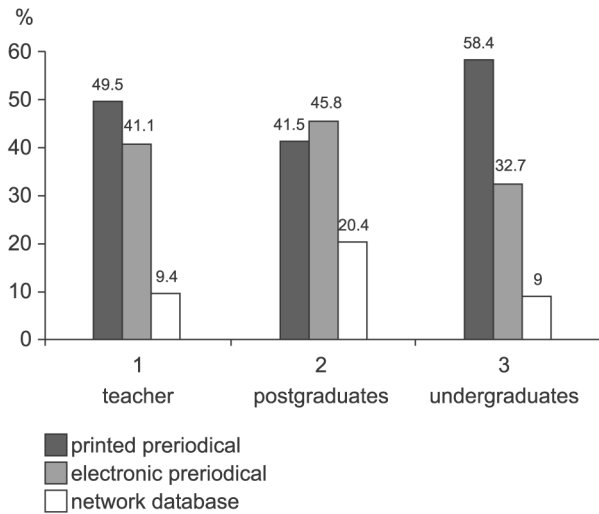


Figure 1.
Printed and electronic periodical, which do you prefer?

Second, the teachers and postgraduates have easy access to the information while there are relatively more restrictions for the undergraduates.

An investigation on the readers' awareness of using electronic resources

Figure 2 clearly shows that the readers obtain information mainly from traditional printed documents. This is especially true of the undergraduates, who account for 68.6 percent, 32.4 percent teachers and 23.1 percent postgraduates. The postgraduates who choose electronic resources account for 67.3 percent, teacher's account for 44.5 percent and undergraduates 10.2 percent. This explains that postgraduates and teachers have

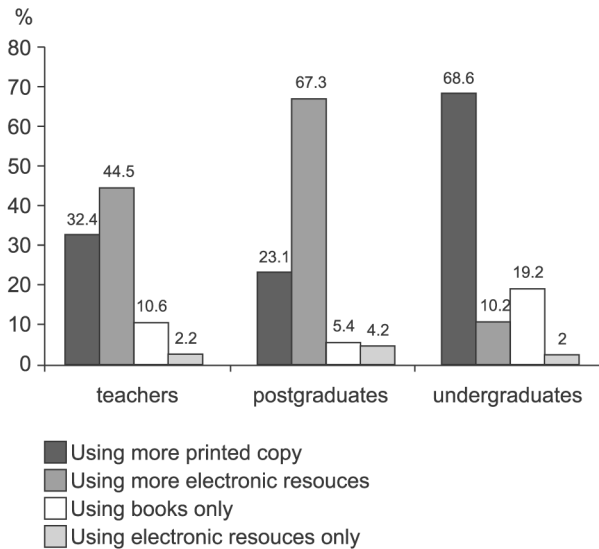


Figure 2.
An investigation on the readers' awareness of using electronic resources

relatively strong awareness of using electronic resources. In addition, some readers' means of obtaining information is outdated and single and they have little knowledge about searching information. Therefore, propagating and using electronic resources is one of the most important tasks for the library.

The situation of the readers' consulting electronic resources and statistics on the readers' visiting the main page of the library

An investigation on the readers' visiting the main page of the library is shown clearly in Table IV: there are 40 percent postgraduates, 16.6 percent teachers and 5 percent undergraduates. The teachers who generally visit the main page of the library account for about 61.9 percent. Those who seldom or never do that account for about 51.3 percent. It means that most teachers and postgraduates focus their attention on the information from the main page and they are eager to know and use the library resources. However, the undergraduates pay little attention to it.

From the investigation data of consulting electronic resources, the readers' visiting rate of the network and CD database is 51.8 percent, and the visiting rate of electronic books is 23.1 percent, which can explain that more than half of the students have been already aware of the significance of using electronic resources. Table IV clearly indicates that the percentage of teachers and students' consulting electronic books is 20.8 and 35 percent respectively, while the undergraduates account for only 14.3 percent. Postgraduates account for the largest percentage: 81.5 percent use the databases purchased by the library, and the undergraduates preferred to use the resources on line, free of charge, accounting for 73.1 percent. The statistics show that postgraduates aim at using resources, mainly consulting materials, while the undergraduates usually browse the electronic resources without any purpose. Table IV also reveals that besides the students who use resources online free of charge frequently, the teachers and postgraduates also often use resources online (including databases, electronic periodicals, patents, standards, reference books and statistical materials), accounting for 40.92 percent. It can be seen clearly that the electronic resources, purchased by the university, cannot meet all the needs of the readers. Hence, it is a good information service to introduce to the readers to some good scientific information resources, such as: patents, standards and free electronic resources at home and abroad.

An investigation and statistics on the readers' using documents

The questionnaire is aimed at investigating the situation of the readers' visiting network and CD databases. The result is that the whole-length database is more popular than the digest database. About 58 percent of readers use whole-length databases and 36.5 percent use digest databases. The details are shown in Figure 3.

An investigation on the readers' ability to use database

From Table V it can be seen that the majority of the readers, accounting for 54.9 percent of all readers, only know the "keyword" searching method. Those who use high-level searching account for 16.1 percent. So the readers have not really mastered the information-searching technique and their technique and skill should be improved.

Table IV.
An investigation on the
situation of the readers'
using electronic resources

	Electronic books	Browsing the network (%)			Searching electronic resources on the main page of the library (%)			
		Probative database	Database purchased	Resources on line free of charge	Many times	Some times	Seldom	Never
Teacher	20.8	19.8	49.8	20.79	16.6	61.9	14.1	3.2
Postgraduate	35	35	81.5	41.9	40	50.4	11.9	0.8
Undergraduate	14.3	11	23.7	73.1	5.7	38.8	35	16.3
Total	23.1	21.8	51.8	40.92	20.4	52.4	19.1	6.1

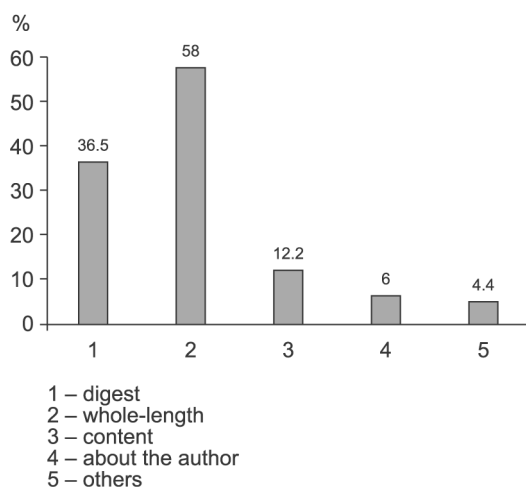


Figure 3.
An investigation and statistic on the readers' using documents

The readers' ability to use database	Number	(%)	Order
Using only key-word searching method	499	54.9	1
Using the high-level searching occasionally	346	38.1	2
Using specialized searching often	146	16.1	3

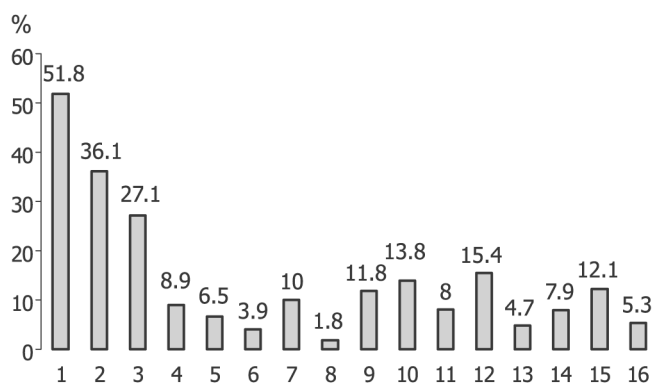
Table V.
An investigation on the readers' ability to use database

An investigation on the readers' using database

The investigation is shown in Figure 4: the Chinese database most frequently used, which is purchased, by the library, is CNKI whole-length periodical database, about 51.8 percent. Because the academic paper is profound in its content and reliable to resort to, the visiting rate is relatively high, about 36.1 percent. Wanfang electronic whole-length databases account for 27.1 percent, while the foreign language database used most frequently, ACS accounts for only 15.4 percent, and the noted CA digest database (CD) is 12.1 percent. It can be seen that the database purchased by the library, especially the foreign language database, is seldom used, and it also means that our electronic resources have great potential for the readers to use.

The investigation on the probative database of the library indicates that the most frequently used is the Chinese scientific paper on-line database, and about 231, 14.1 percent of the readers use it. In total 151, about 16.6 percent use the People Daily database; the readers and the cadres in the Administration College use it more frequently. A total of 123 use Qinghua Tongfang English simulation exercise system, among them many students use CET4, CET6 and the other exercises in the entrance exam for postgraduates. The three databases account for 30.8 percent of the whole databases. Therefore, in purchasing databases, the three should be given priority.

- CNKI periodical whole-length database.
- Chinese excellent master's thesis and doctoral dissertation whole-length database.
- Wanfang electronic whole-length periodical database.



1. CNKI Periodical Whole-length Database
2. Chinese Excellent Master's Thesis and Doctoral Dissertation Whole-length Database
3. Wanfang Electronic Whole-length Periodical Database
4. Chinese Enterprise and Product Database
5. Chinese Patent Whole-length Database
6. Almanac Database
7. Wanfang Digest Database
8. NSTL Digest Database
9. EBSCO Whole-length Database
10. Blackwell Whole-length Database
11. ASME Whole-length Electronic Periodical
12. ACS Whole-length Electronic Periodical
13. Patent Brand Whole-length Database
14. Ei Village Digest Database
15. CA Digest Database (CD)
16. PQDD Dissertation Digest Database

Figure 4.
The use of databases
purchased by the library

- Chinese enterprise and product database.
- Chinese patent whole-length database.
- Almanac database.
- Wanfang digest database.
- NSTL digest database.
- EBSCO whole-length database.
- Blackwell whole-length database.
- ASME whole-length electronic periodical.
- ACS whole-length electronic periodical.
- Patent brand whole-length database.
- Ei Village digest database.
- CA digest database (CD).
- PQDD dissertation digest database.

Statistics on the readers' purpose to read and search electronic resources

The investigation discloses that most readers read and search electronic resources for "consulting the materials concerning the subject studied", and they account for 54.6 percent (see Table VI). Second, those who learn about the developing orientation of the subject studied account for 45.5 percent. There are 59.5 percent of the readers who do that while making preparation for writing their graduation paper, dissertation or doing their homework, which is their priority. Some 17.9 percent do that while indicating the origin of the "reference books" listed at the end of their papers. The number of those who browse without any purpose is about 5.3 percent. It means that the overwhelming majority of the readers have definite purpose when consulting the electronic resources.

Several factors influencing the users' using electronic resources

From the result of the investigation, it can be seen that the factors which influence the readers' using electronic resources are rather complex. The factors involve the problem of information-searching method, of awareness and of the construction of electronic resources. Among the several factors, the readers' not being familiar with the construction of databases and searching methods is the main reason to influence their use of the database, accounting for 26 percent of all the readers (see Table VII). Second, those who are not used to reading it account for 21.7 percent. Some 21.3 percent readers, most of whom are teachers, hold the opinion that the traditional books and periodicals can still meet their needs. It shows clearly that the teachers in our university have no awareness of using the electronic resources. Of course, there are many teachers, who make the students consult the materials for them, which influences the accuracy of statistics. Restricted by the network, the readers who do not feel confident to be online account for 15.5 percent. Those who are restricted by lack of computer experience, account for 10.1 percent. Under the current situation, the network and the computer are still the decisive factors, which influence the readers' use of the electronic resources. Those who "know nothing about the resources" account for 14.3 percent. We need to strengthen the propaganda and the readers' awareness of information should be raised. The readers who do not go online account for 8.8 percent, among whom teachers and postgraduates account for the largest percentage. The construction of electronic resources in the library need to be improved.

Purpose to read and search electronic resources	Number of the people	(%)	Order
Consulting the materials concerning the subject studied	496	54.6	1
Learning about the developing orientation of the subject	414	45.5	2
Making preparation for writing their dissertation	321	35.3	3
Doing homework	220	24.2	4
Learning about the origin of the notes and bibliography	163	17.9	5
Browsing without any purpose	48	5.3	6
Others	22	2.4	7

Table VI.
Statistics on the readers' purpose to read and search electronic resources

Table VII.
Several factors
influencing the users'
using electronic resources

The reasons why the readers unwillingly use or do not use electronic resources	Teacher (number)	Postgraduate number	College student number	Total (number)	Rate (%)	Order
Those who are not used to using electronic resources	74	68	55	197	21.7	2
Traditional books can meet the readers' needs	97	23	74	194	21.3	3
Those who are not familiar with database structure and searching method	64	69	104	237	26	1
Those who feel inconvenient to be on line	42	29	70	141	15.5	4
For the restriction of the computer	23	19	50	92	10.1	7
Knowing nothing about the resources	42	40	48	130	14.3	5
No readers need electronic resources	22	45	13	80	8.8	6

An evaluation on whether the readers are satisfied with the electronic information resources

From Figure 5, we see that the readers' satisfied with the electronic resources can reach 0-20 percent, covering 14.1 percent; 20-40 percent, covering 25.9 percent; 40-60 percent, covering 32.9 percent; 80-100 percent, covering 4.3 percent. It shows that 40-50 percent of the readers investigated are relatively satisfied in using the electronic information resources, 14.1 percent of the readers are not satisfied using the electronic information resources, and 4.3 percent of the readers are quite satisfied. The factors resulting in the differences of satisfaction of the readers toward the resources are awaiting further research.

Statistics on the readers' joining the training classes provided by the library

The investigation reveals (see Table VIII) that the readers joining the training classes provided by the library, account for 24 percent, and those who never join the training, account for 65.8 percent. There are 10.1 percent of readers who do not know anything about the database training. On the question that "whether the readers are willing to attend the lectures on database training arranged by the library", 88.3 percent readers say that they are, which means that the readers are eager to join the database training class. We should strengthen the database training of the library and meet more readers' needs.

The jobs to be done to strengthen the service of electronic resources, esp. network database

Although great efforts have been made, when asked what jobs should be strengthened, the results are as follows: still 29.3 percent readers (see Table IX) think that the propaganda is not enough. The propaganda of electronic resources seems simple, in reality the library should strengthen their propaganda to meet the readers' needs.

How to use the network database is a question, which needs to be solved by many of the readers. The readers who asked for network database training account for 40 percent. Although the searching interface of the internet database is more and more identical and concise, every database has its own features. For the readers who seldom

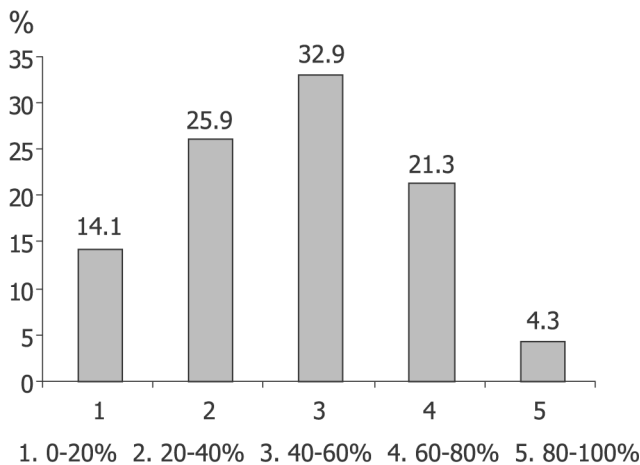


Figure 5. Chart 5. An evaluation on whether the readers are satisfied with electronic information resources

use the database (the users who are not familiar with the database), it is essential to provide the searching aid for them to at least some degree.

The increasing electronic resources bring some trouble to the readers who seldom consult the document. The Network Database in content includes: whole-length type and digest type; the languages included are Chinese language type and English-language type. The subjects included were: arts and science, etc. It therefore shows that making known that the resources are available, should be done by the library. The investigation shows that 27.4 percent of the readers think that integration of the paper document and the electronic resources should be done, and 37.3 percent readers have the idea that a subject navigation system should be built. The percentage that asked for online consultation account for 26.2 percent.

Conclusion and strategies

Conclusion

The investigation has met due expectation and obtained good results. Conclusions reached are as follows:

- Most of the readers know a little about the electronic resources. Those who know a lot about these resources, and those that do not know anything at all, account for a small percentage.
- The main method for readers, especially for undergraduates, to obtain the document is the traditional holdings in the library. It means that printed documents still play a very important role and electronic books cannot replace

Table VIII.
An evaluation on whether the readers are satisfied with electronic information resources

	Have you joined any database training provided by the library?		Whether you will consider joining the lectures on database provided by the library		
	Number	(%)	Number	(%)	
Yes	219	24	Yes	803	88.3
No	598	65.8	No	104	11.4
No idea	92	10.1			

Table IX.
The jobs to be done to strengthen the service of electronic resources, esp. network database

The jobs to be done to strengthen the service of electronic resources, especially internet database	Number	Proportion (%)	Order
Strengthen the database searching training	345	40	1
Strengthen the propaganda of internet database	266	29.3	3
Construction of subject navigation system	339	37.3	2
Conformity of paper document and electronic resources	249	27.4	4
Start a column to introduce briefly the databases at home and abroad	221	24.3	6
On-line consultation	238	26.2	5
Do not need	11	1.2	8
Others	15	1.7	7

the traditional printed ones. The library holdings should have the printed copies as a main component.

- The overwhelming majority of readers chose both the printed and electronic resources, which shows that both have their advantages and they cannot replace each other; they can supplement each other.
- The postgraduates and teachers who prefer electronic resources to paper documents, account for 67.3 and 44.5 percent respectively. It shows that most postgraduates and teachers are well aware of the electronic resources. It is the postgraduates and teachers who make the most use of the electronic resources.
- Whole-length electronic resources are most frequently used and the combination of digest and whole-length is the best service.
- The Chinese database purchased by the library and most frequently used is “CNKI periodical whole-length database”, and followed by the “Chinese excellent master’s thesis and doctoral dissertation database”, also “Wanfang electronic whole-length periodical database”. At present the database of the library is not frequently used, especially the foreign language database. The library of our university has great potential for the readers to use.
- The three probative databases “Chinese scientific paper on line, people daily picture and essay database, Qinghua Tongfang English simulation exercise system” account for 30.8 percent among all the databases. Therefore, these three databases should be given priorities.
- Not being used to reading on screen, and not familiar with the structure of the database and the searching method is one important factor influencing the readers’ using the electronic resources. The restriction of the computer and the online service is the main obstacle to their use of electronic resources.
- One of the main aims for the readers to consult electronic resources is consulting the materials concerning the subject studied.
- The method preferred by the readers to obtain relevant information is browsing the interface of the library. The library interface has become an important propaganda and service window. This is also one of the most important reasons why the library interface has been continuously renewed and constructed.
- Half of the users investigated are rather satisfied with the electronic resources in the library.
- The readers investigated who have not joined any training account for 65.8 percent; 88.3 percent readers are willing to join the database training, which means that the readers are eager to join.

Countermeasures

Improving the conditions for the readers to consult materials and raising the efficiency of the readers’ using document. The internet and computer are the main obstacles for the readers using electronic resources. The undergraduates use electronic resources mainly in the electronic reading room of the library, so strengthening the construction and administration of the electronic reading room can meet the needs of the readers, especially the undergraduates.

To strengthen the propaganda of electronic resources and the readers' training. The inadequacy of the information is the second factor to restriction of the electronic resources. The library has not only handy and free information highway, but also the adequate and efficient information transport means, which allows the readers to use the tools and obtain the information they need.

Valuing the function of the librarians' information navigation. All types of probative and electronic resources free of charge are scattered in the sea of information. Searching the information for average readers is like looking for a needle in haystack. The specialized librarians gather these resources to supplement the documents to the largest extent.

Setting up the rules of the librarians. The databases purchased by the library are designated to the librarians concerned, i.e. setting scientific rules of the librarians. Every librarian studies in depth the features, searching method and the problems of the database they are using. First, it can raise the librarians' ability to obtain information and make them an expert in one field; in addition, when searching information, the readers are being assisted by the specialists.

In summary, the questionnaire investigation reflects from one aspect the readers in the higher institutions use and value electronic resources. Through investigation, the key jobs of the library are specified. In the questionnaire, the teachers and students not only present their problems, but put forward many suggestions. Some suggestions are over several hundred words long, pointing out our future orientation of our jobs. Knowing about the readers' needs, the library can suit the case and try to do its utmost to remedy this.

Further reading

- Jiyuan, Y. (2001), "A comparison study on the use of electronic resources between American and Chinese universities", *Tianjin Study Periodical*, No. 6, pp. 55-60.
- Xiaoling, H. (2004), "Increasing the knowledge about electronic resources", *Theory and Practice of the Library*, No. 5, pp. 108-9.
- Xintong, Z. (2005), "An investigation on the readers' using electronic resources of our college", *Shandong Library Quarterly*, No. 3, pp. 85-8.
- Yan, Z. (2004), "An analysis of current situation of network database of Jiangsu Library", *Modern Books Information Technique*, No. 11, pp. 43-5.
- Yongfang, L., Juan, H. and Tieli, L. (2005), "An investigation and analysis of the electronic resources and relevant service of Beijing Industrial University", *The Construction of the Library*, No. 1, pp. 79-81.
- Zengzhi, S. and Huanxin, Z. (2003), "An Investigation and Analysis of the College Library Users' Attitudes Towards Electronic Resources", No. 1, pp. 19-26.

About the author

Wu Shuling was born in Xi'an Shaanxi Province. In 1977 she graduated from Maths Department, Northwest University. She works as associate researcher, director of Reading Section in Shaanxi University of Science and Technology and she is involved in compiling two reference books and has published more than 30 papers. Wu Shuling can be contacted at: shulw@sust.edu.cn wsl1953@hotmail.com