

Use of ICT among Distance Learners: An Investigation among the Social Science Students in Annamalai University

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Abstract

In the fast-emerging and ever-growing information explosion it is very difficult to retrieve particular information without wasting time. Recent advances in the field of information technology contribute significantly to improve the services of libraries. Now-a-days libraries are not only seen with printed document and non-print document but also with computers. The impact of technologies such as CD-ROMs, multimedia, computer networks, Internet, etc. have lead to a paperless society. With the availability of computers, capable of computing at very high speed and having large disc storage space, it is possible to digitize and store information in the form of high quality graphics, color images, voice signal and video clips at a relatively affordable cost. This paper is an attempt to investigate the use of electronic information resources by the Social Science distance learners of the Annamalai University, India. For this purpose a survey was carried out using questionnaire tool. The findings indicated that 67.33 percent of the respondents are 21-30 age group. The results show that 39 percent access the internet from the Internet café. The study reveals that most of the respondents use of electronic information resources through e-journals. The paper highlighted the various problems and issues involved in handling electronic information resources and has given suggestions to improve the library services to meet the demands of the users.

Keywords: ICT; Open and distance learning (ODL); Social science; Internet; Search engines; CD-ROM; User study.

Introduction

The rapid advancement of information and communication technology (ICT) has brought a revolutionary change in the information scenario giving rise to a number of options to handle varied information sources conveniently and effortlessly as a result of which e-resources have become the most sought after modern library's reserves in satisfying varied needs of students, teachers, and researchers with minimum risk and time. Information technology has changed the world and has become one of the important tools for retrieving information. The electronic

information resources have acquired a major portion of library collections. The value and use of information resources, particularly e-resources, have increased with the time. Therefore, there is necessity to make study on the different aspects of e-resources and the issues relating to the use of e-resources by users, more particularly by the faculty members of academic institutions. The present study is an attempt to analyse the use of e-resources by the Library and Information Science distance learners of Annamalai University and to find out the problems and constraints faced by the users in accessing the e-resources with some purposeful suggestions for its development.

Distance education providers

Distance education in India had its genesis in the early 1960s. It started as correspondence education a supplementary method of education to meet the growing demand for higher education. Since then it has expanded rapidly, particularly over the last two decades.

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In 2005, there were 12 open universities [including the Indira Gandhi National Open University (IGNOU)] and 106 dual mode university distance education institutes/centres in the country, catering to over 2.8 million students. Each year, nearly 1.3 million students register for various courses in these universities.[1] This was considered as an economical and a quick way of increasing enrolment in higher education. The emergence of distance education has been a major development over the last two decades. There are diverse types of providers offering a variety of programmes. The regulatory bodies have little control over them. They operate in different ways and sometimes at cross purposes with each other. The growth has been haphazard and the quality is both unsatisfactory and uneven.[2] Also, there is an anomaly of the major provider - IGNOU being the regulator. The regulator for distance education - the Distance Education Commission (DEC) is a part of IGNOU. This results in conflict of interest with IGNOU getting a preferential treatment over the other distance education providers from the regulator. Nowadays, the boundaries between distance education and on-campus education are in a continuous process of convergence, and it is likely that the future interrelations between them will be marked both by a growing competition and a growing cooperation.

ICT in Open and Distance Learning

The role and the use of the Information and Communication Technology (ICT) in Learners Support Services in Open and Distance Learning (ODL) is a proven fact now. The distance education system responded positively and quickly to the revolution in ICT. It is because of three reasons - the need to reduce the cost of imparting education, to introduce need based educational programmes to a large number of people and to reduce time required for sanctioning new programmes by adopting new flexible nature of administration. ICT is a major factor in shaping the new global economy and producing rapid changes in

society. Within the past decade, the new ICT tools have fundamentally changed the way people communicate and do business. They have produced significant transformations in industry, agriculture, medicine, business, engineering and other fields. They also have the potential to transform the nature of education where and how learning takes place, and the roles of students and teachers in the learning process.

Embedding ICT in teaching-learning process is a major initiative in all branches of education; ICT has a particularly important role to play in developing provision for bilingual learners. This is concerned with exploring new ways of working with bilingual learners as well as facilitating more established techniques. The increased use of ICT to deliver and enhance aspects of educational provision is now an emerging practice for all learners belonging to rural and geographically remote and mainly monolingual areas thus having advantages in overcoming geographical barriers. For example video conferencing facilities developed to enable isolated learners to share learning with others in remote areas can also be used to reduce linguistic isolation by allowing same first language learners to discuss and communicate remotely. Learners Support Services are an important part of Distance Educational system. Since the learners in ODL system are not directly involved in the regular classroom teaching-learning process having direct interaction with the teachers regularly, they are provided with adequate Learners Support Services. Such support services include the pre-admission counselling, admission process, provision of study materials both in print media and audio visual forms, subject specific academic counselling, audio visual viewing facilities, participation in teleconferencing, ICT facilities for e-learning, library services, laboratory support facilities, academic career guidance, information services related to rules, regulations, procedures, schedules etc. The role of ICT to speed up the delivery of the support services has now become inevitable for the distant learners. It also considers the shift from mass

produced generic resources to tailored, personalised support and communications and sets this in the context of globalisation of the economy and the changing expectations of students as 'consumers.'

ICT and Learner Support

Distance and open education schemes that have until recently relied mainly on the mailing of written materials, videos, cassette recordings, and radio or TV broadcasting techniques can be augmented, enhanced or replaced by new on-line tools and technologies which have the power to transform the learning environment. Technological developments are coming together which offer the following benefits:

- Through the Internet and worldwide web, new and enlarged sources of information and knowledge that offer teachers and students opportunities for self-development as well as benefits from incorporation into classroom environments.
- Through e-mail and other Internet related feedback mechanisms, greater opportunity to reduce the isolation and time delay associated with distance education.
- Through the extraordinary pace of software development, enriched teaching and learning with enhanced graphics, interaction, animation and visualisation.
- Through lowering telecommunications bandwidth costs and emergence of enhanced cable, wireless and satellite systems, greater opportunities for basic access, video conferencing, on-line interactive learning, and live interaction with the central place of a distance education programme.
- Through community access schemes, more potential to make the benefits of distance education eventually available to lower income people and rural communities.

Sound pedagogical principles would

increasingly dictate the need for a more interactive learning environment which was earlier difficult to achieve and also adds considerably to the remotest areas. But it was noted that its deployment requires expensive satellite resources as well as an expensive face-to-face lecture and broadcast system running in parallel. Very Small Aperture Terminal (VSAT) satellite systems are increasingly seen as a powerful distribution mechanism for Internet based resources, with ready access to interactive learning tools and e-mail, especially when linked or packaged with key educational web-site sources, servers and services. VSATs can overcome many of the bandwidth/delivery speed, limitations of terrestrial systems, particularly in developing countries, and can be especially economic when deployed in an asymmetric multi-casting mode in which high-speed 'downlink' capability is combined with slower speed 'up linking.' These features and the emerges the need of specially designed Distance Education network management and learner software packages of ICTs in distance education especially in the developing world. The use of ICT in distance education actually depends on at least five factors. These are:

- *Geographical Size and Situation:* Large countries with dispersed people and communities have an additional drive or motivation to use communications to deliver educational services cost-effectively.
- *Policy on Telecommunications:* The Internet, IT and Education, Privatisation and Liberalisation of telecommunications and the Internet are improving quality, lowering costs and accelerating innovation around the world. Education policy is often the key to raising awareness and providing leadership in educational use of ICTs.
- *Population and Market Size:* Small markets attract fewer investors and less competition, and offer fewer economies of scale which would lead to price reduction, while regional schemes can overcome that, aggregate market size and achieve scale economies.

- *Per Capita Means*: To address start-up investment challenges and the market affordability to attract commercial players to ease the way to change and growth.
- *Perceived Educational or Developmental needs*: These can relate to educational delivery challenges due to geographic or cultural isolation, or appreciation for the more systematic challenges - such as adapting to the demands of the information economy which can only be seriously addressed with ICTs.

For the purpose of finding out the effectiveness of the use and role of ICT in distance mode, Annamalai University has been chosen as a case study. This is mainly because Annamalai University uses a wide variety of ICT materials to reach out to the distance learners/students.

Distance Education in Annamalai University

The University that started with only seven departments in 1929 has over the years developed into a famed institution of higher learning with 49 departments under 10 faculties thus gaining the reputation of being one of the few Institutions in India with all faculties under one roof. The University has the advantage of a well equipped Central Library and Laboratories that provide excellent facilities for undertaking research projects for Ph.D. and Post- Doctoral work. Several research projects, funded by national and international funding agencies including the State and Central Government, has been carried out by the various Faculties, in addition to which close co-operation has been developed with neighbouring industries for promotion of research and training programmes. The University thus promotes the spirit of learning, fulfils the aspirations of enlightenment as aptly observed by Dr.S.Radhakrishnan when he headed the Indian University Grants Commission that "Annamalai University is eminently fitted to be a genuine centre of learning and culture by virtue of its situation and its beautiful campus".

The Directorate of Distance Education established in 1979 offers four hundred and one different programmes of study under the Regular Stream. It is credited with the largest enrolment in India and is well equipped with computer and other infrastructure, adequate teaching faculty and administrative set-up of its own, study centres, computer training centres, etc., to serve its students' clientele in their best interest at their door steps. It has also the unique distinction of offering first in India, Postgraduate Degree Programmes in Applied Psychology, Physics, Chemistry, Zoology, Botany, Bioinformatics and Law through Distance Education mode. The Directorate of Distance Education is also offering the Programmes on Fashion Design, Textile Design, Interior Design, Hotel Management and Catering, B.Ed., Technology Programmes, Retail Management, Twinning Programme, Programmes on Health Science, Commonwealth Youth Programme, Yoga, Music, Fire and Safety, Pharmaceutical and Taxation Programmes. All the programmes of study offered by the Directorate of Distance Education have the approval of the Distance Education Council, New Delhi.

Review of Literature

A research survey was undertaken by Guruprasad, R and Khaiser Nikam (2010) amongst the 16 prestigious aerospace organisations in Bengaluru. The sampling boundary is restricted to these selected 16 organisations. Out of the 650 questionnaires distributed, 612 were received back, and finally 583 questionnaires suitable for the study were selected. The analysis is based on the responses from the aerospace scientists and engineers. The major observations include: (i) aerospace engineering e-Journals are extremely important to aerospace scientists or engineers and are a major source of scientific and technical information, (ii) the use patterns of aerospace engineering e-Journals amongst the 16 aerospace organisations are not uniform and hence show a heterogeneous nature in their use patterns. Also, the most preferred

aerospace engineering e-Journals in the order of priority and usage (from the responses received) by this 'niche' aerospace engineering community are: Aerospace Science and Technology; Progress in Aerospace Sciences; Journal of Aerospace Engineering; IEEE Transactions on Electronics and Aerospace Systems; Web of Science; Online Journals: Aerospace; Journal of Turbo and Jet Engines; The Journal of Failure Analysis and Prevention (ASM International); European Space Bulletin-ESA; Informatics-J Gate; and International Journal of Satellite Communications and Networking.[3]

According to Kokosalakis (2004) no universal definition of Lifelong Learning exists. However, the author states that the following definitions was adopted and proposed: - Those novel forms of teaching and learning that equip students (learners, individuals) to encounter with competence and confidence, the full range of working, learning and life experiences. Lifelong Learning addresses three fundamental objectives of education: personal development, social cohesion and economic growth.[4] The term "Lifelong Learning" to Kokosalakis is often used as a synonym with adult education, permanent education and/or continuing education. In France, Germany and Spain, for instance, "permanent" or "continuing education" is used instead of Lifelong Learning. In some cases, Lifelong Learning is seen primarily as entailing distinct forms of provision for distinct groups of people. In others, it is more integrated in the totality of higher education. Lifelong learning is a process through which individuals acquire knowledge, skills and values in a range of formal and informal settings, throughout life. It provides formal education, vocational training, and personal development. Lifelong learning enables informed citizens to make positive and rewarding contributions to sustain their environment, their community and the economy (Lugg, 2000). With this definition a lifelong learner may be refers to as an individual who continues to seek new skills and knowledge throughout their lifetime, be it from formal institutions like schools or informal sources like as family, sporting clubs

or through hobbies.

Kannappanavar and Rajanikanta's (2008) paper highlights the use of e-learning resources in medical colleges. The study has found that Medical education popularized only after the independence of the country. It is found that majority of the colleges under the study area have e-information resources, e-databases. Almost all colleges under study are also becoming members of a consortium. As far as the infrastructure facilities are concerned, almost all colleges under study have provided very good infrastructure facilities to their libraries to serve their clients effectively.[5]

Varatharajan and Chandrashekhara (2007) have found that digital libraries and digitization play an important role in preserving and disseminating knowledge in art and culture, education, science and technology, literature and humanities, media and entertainment, cultural heritage, and history. In India, a substantial number of libraries and information centres have initiated digital library activities. Indian society has created and preserved the resources of traditional and cultural heritage in various forms; however, thousands of ancient books and manuscripts that remain in perishable palm leaves urgently need digitization. This article describes some of the digital libraries and institutional repositories of India.[6]

Lohar and Roopashree (2006) have analyzed the collected data to cover the use of electronic resources and how the electronic resources have improved the academic career of the faculty and also the problems that are faced in using the electronic resources. They conclude that the main intention of the use of electronic resources has been the academic interest of the users.[7]

O'Brien (2004) defines Lifelong learning as the process of keeping mind and body engaged at any age by actively pursuing knowledge and experience. To her, Lifelong learning is the continued educational experience that utilizes non-credit academic courses, educational travel, and community service and volunteerism to fully engage the brain, heighten physical activity, and maintain

healthy social relationships. Lifelong learning is mainly about the training and learning that people can achieve after they leave school. It is a learning that makes it possible for more young people to stay on at school or college. It is an intension for all pupils and students over 14 to gain work-based vocational learning and enterprise experience. Lifelong learning covers the whole range of learning. That includes formal and informal learning and workplace learning. It also includes the skills, knowledge, attitudes and behaviours that people acquire in their day-to-day experiences. Following these definitions it important to point out the relationship between Information literacy and lifelong learning. This discussion is contained in the next section.[8]

Barbara J. Bergman (2005) has discussed the position of electronic resources as a specialty to deal with the management of digital resources, but little has been written about the librarians now working in this specialty. Electronic resources management appears to substantially blur the line between public and technical services.[9]

Sajjad ur Rhamn and Vivian Ramzy (2004) have discussed the electronic resources as vital, but extremely expensive and medical librarian are genuinely concerned with their effective use. It is a widely held view that low awareness and poor skills are among the primary reasons for their under utilization. A questionnaire based survey of health professionals affiliated with three reaching faculties of Kuwait University has been conducted to find out the nature and extent of use and the reasons of low use of these resources.[10]

Singh, S.P (2004) has discussed the usefulness of subject gateways and compares pricing structures of different e-resources. Electronic materials are made available by providers any where in the world. The librarian must act as a knowledge manager applying the skills of collection planning, selection analysis and co-operation in order to manage the intersection of print and e-resources. The web has introduced new resources to collection managers throughout the world. Print media has its own problems,

such as gaining access to “gray literature” which is quite difficult as it is largely unidentified, unnoticed or out-of-print quickly.[11]

Objectives of the study

The main objectives of the present study are as follows:

- To find out the type of electronic information resources used currently by the distance education social science students in the Annamalai University and to examine the place of access and the frequency of use of various electronic information resources.
- To find out the frequency of use of various Internet search engines by the respondents.
- To investigate different search methods used by the respondents in retrieving information from electronic information resources.
- To find out the purpose of conducting electronic information searches by the respondents and to identify the difficulties faced by them in the online search.
- To suggest suitable recommendations to improve facilities and services related to the use of electronic information resources.

Methodology

Keeping in view the above objectives in mind, a structured questionnaire was prepared to collect data from the users of electronic information resources in the distance education Social Science students of Annamalai University. Questionnaire contains various questions pertaining to the awareness and use of electronic information resources. For this purpose a total of 340 questionnaires were distributed among the Social Science

Students of distance education mode. Out of 340 questionnaires distributed, 300 valid questionnaires were collected and then data was analysed, tabulated, interpreted and presented in form of this paper. This constitutes 88.23 % (300/340) of the total response.

Data analysis

Analysis of data is the ultimate step in research process. It is the link between raw data and significant results leading to conclusions. This process of analysis has to be result oriented.

Profile of respondents

A study of data in table-1 indicates the age

Table 1: Age of Respondents

Age Range	No. of Respondents	Percentage
21 - 30	202	67.33
31 - 40	98	32.67
Total	300	100.00

wise distribution of respondents. It could be noted that out of the total 300 respondents, 67.33 percent of the respondents are 21-30 age group, remaining 32.67 percent belongs to 31-40 age group.

Personal detail section of the questionnaire provides information regarding the sex and different qualifications as can be seen from Table 2. It is shown in Table 2, 55.33 percent of population studied were males and only 44.67 percent of total were females, who can use electronic information resources available through library for different purposes.

Use of internet

The respondents were asked to indicate their

Table 2: Sex wise distribution of Respondents

Gender	No. of Respondents	Percentage
Male	166	55.33
Female	134	44.67
Total	300	100.00

skill of internet literacy. It is evident from Table-3 that one third of the respondents 42.34 percent have below average level of Internet skill. 33.33 percent of the respondents reported that they have an expert level of Internet skill. Only 24.33 percent admitted that they have an average level of internet skill.

Table 3: Internet Skill Rating

Rating	No. of Respondents	Percentage
Expert	100	33.33
Average	73	24.33
Below average	127	42.34
Total	300	100.00

Place of accessing electronic information resources

Table 4 highlights the location from where the Internet and electronic resources are mostly accessed by the distance learners of Social Science students. A majority of the respondents i.e. 39 percent access the Internet from the café, while 34.66 percent also access from university. Another 26.34 percent access Internet from home.

Table 4: Location for accessing Electronic Information Resources

Location	Number	Percentage
University	104	34.66
Café	117	39.00
Home	79	26.34
Total	300	100.00

Frequency of accessing electronic information resources

Table5 indicates the use of electronic resources. From the table-6, it is clear that most of the respondents 31.34 percent use of electronic information resources through e-journals. 20 percent of respondents use of electronic information resources through e-

Table 5: Most Frequently used E-Resources

Services	Number	Percentage
E-mail	50	16.66
E-journals	94	31.34
E-books	56	18.66
E-Databases	60	20.00
DVD / CD-ROMs	40	13.34
Total	300	100.00

Table 6: Frequency of Electronic Information Resources

Frequency	Number	Percentage
Everyday	62	20.66
2-4 times a week	108	36.00
Once a week	86	28.67
Occasionally	44	14.67
Total	300	100.00

Databases. 18.66 percent of respondents use of electronic information resources through e-books followed by 16.66 percent of respondents use of electronic information resources through e-mail and 13.34 percent respondents use of electronic information resources through DVD/CD-ROMs.

It is observed from the analysis that 36 percent of respondents access electronic information resources 2-4 times a week, 28.67 percent of respondents access once in a week, about 14.67 percent respondents use occasionally. Only 20.66 percent of respondents use electronic information resources daily.

It is observed from the analysis that 42.34 percent of respondents frequently used Google search engines followed by 28 percent of the respondents used Yahoo search engines. Only 30 percent of the respondents use other search engines like Excite, Lycos and Infoseek.

Table 7: Frequency of use of Search Engines

Frequency	Number	Percentage
Google	127	42.34
Yahoo	84	28.00
Excite	32	10.66
Lycos	30	10.00
Infoseek	27	9.00
Total	300	100.00

Purpose of Using Electronic Information Resources

From the Table 8, it is clear that most of the respondents 68 percent use electronic information resources for studying course work. 45.33 percent of respondents use electronic information resources for update subject knowledge. 52.66 percent of respondents use electronic information resources for writing papers and 28 percent

Table 8: Purpose of using Electronic Information Resources

Purpose	Number	Percentage
For studying course work	204	68.00
For update subject knowledge	136	45.33
For research work	78	26.00
For writing papers	158	52.66
Any other works	84	28.00

Note: Total sample exceeds the required size since the questions are multiple choices

of respondents use for other works like exam etc. 26 percent of users using electronic information resources for research work.

Though electronic information resources have become a common source among the academic and research communities, the majority of users stated that they have difficulties to use electronic information resources. The specific problems faced by the users are given in Table 9. It was observed that majority of respondents are not satisfied with availability of enough electronic information resources in their respective subject followed by coverage of electronic information resources is not suited to my research area, lack of training and time consuming.

A question was asked to know the satisfaction level of infrastructure among the users for accessing electronic information resources. It was observed that majority 36 percent of respondents are highly satisfied with the infrastructure provided by the library for accessing electronic information resources at different levels whereas only 11.67 percent of respondents are not satisfied with the same.

Table 9: Difficulties of Accessing Electronic Information Resources

Reasons	Number	Percentage
Not many electronic information resources available in my subject	182	60.66
Coverage on electronic information resources is not suited to my research area	128	42.66
No assistance provided by the information professionals	96	32.00
Time consuming	82	27.33
Lack of training	88	29.33

Note: Total sample exceeds the required size since the questions are multiple choices

Table 10: Satisfaction of Accessing Electronic Information Resources

Level	Number	Percentage
Highly satisfied	108	36.00
Satisfied	65	21.66
Average	92	30.67
Not satisfied	35	11.67
Total	300	100.00

Recommendations

Based on the findings of the study the following suggestions are made:

- The authority must conduct training programmes for users regarding how to use electronic information resources and online databases.
- Awareness should be created to use electronic information resources and online databases to fulfill information needs.
- More computer terminals should be installed in the library for the benefit of users.
- The speed of Internet needs to be increased for quick access to the available e-resources.
- The LIS professionals of the Central Library have to create more awareness on e-resources. In this context the website of library, newsletter of the institution should highlight the available e-resources at the library regularly.
- More fund should be given to acquire electronic information resources.
- Information professionals have to help users to create awareness and use of electronic information resources.

Conclusion

The library environment has currently undergone drastic change in terms of collections and services. The proliferation of e-resources has had a significant impact on the way the academic community uses, stores, and preserves information. The advantages of e-

resources have drawn attention of the library users to a great extent. Accordingly, these resources have occupied a significant place in the collection and budget of almost all libraries. Distance learners attitudes seem to be very positive towards e-resources for their study and the role of libraries as gateway to provide assistance in accessing these resources. The study showed that Internet has radical impact on the changing higher education environment. It is interesting that Internet use among social science distance learners at the Annamalai University is much higher than expected. The other issue was lack any formal training about how to locate these resources by saving time and efforts. Slow speed, lack of computers, lack of time, and lack of access from home are found to be the major problems. For this purpose, the Annamalai University needs to improve its IT infrastructure, including providing distance access. The use of electronic information sources for study and research purposes must be encouraged and proper training should be provided.

References

1. Garg Suresh, Venkaiah Puranik, Chambi and Panda Santosh and others (eds). *Four Decades of Distance Education in India: Reflections on Policy and Practice*. New Delhi: Viva Books; 2006.
2. NIEPA. Report of the National seminar on Privatization and commercialization of higher education on May 2, 2006. New Delhi: National Institute of Educational Planning and Administration; 2006.
3. Guruprasad, R and Khaiser Nikam. E-Journals and their Usage Patterns Amongst the Indian Aerospace Scientists and Engineers in Bengaluru. *DESIDOC Journal of Library & Information Technology*. 2010; 30(6): 31-38.
4. Kokosalakis N. Lifelong learning: Implications for universities. 2002. New Perspectives for learning- Briefing Paper 20. Available: <http://www.E:%20Document/My%20Web2/> [accessed 10 October 2011].
5. Kannappanavar BU, and Rajanikanta ST. Effective Use of E-Learning Materials in

- Medical College Libraries in Karnataka: A study. *SRELS Journal of Information Management*. 2008; 45(4): 437-454.
6. Varatharajan N & Chandrashekara M. Digital Library Initiatives at Higher Education and Research Institutions in India. *Library Philosophy and Practice*. 2007.
 7. Lohar MS and Roopashree TN. Use of electronic resources by faculty members in B.I.E.T., Davanagere: a survey. *SRELS Journal of Information Management*. 2006; 43(1): 101-112.
 8. O'Brien, S.(2004). The benefits of lifelong learning for adults 50-plus. Available: <http://staff.cni.org/~clifford/papers/cni-info-it-lit.html> [accessed 2 October 2011].
 9. Barbara J Bergman. Looking at electronic resources librarians. Is there gender equity within this emerging specialty? *New Library World*. 2005; 106(1210/1211): 116-127.
 10. Sajjad ur Rehman and Vivian Ramzy. Awareness and use of electronic information resources at the health sciences center of Kuwait University. *Library Review*. 2004; 53(3): 150-156.
 11. Singh SP. Collection management in the electronic environment. *The Bottom Line : Man Library Finances*. 2004; 2: 55-60.