REVIEW OF LITERATURE

2.0 INTRODUCTION

Literature on the relation of ICLs, and their services and productivity is scattered among the various disciplines. In the field of LISc, the earliest research focuses on the value of information. There are various studies related to present study, examined the value and contribution of IT. However, very few studies are directly related to library and information science (LISc), especially academic libraries, LISc faculty teachers and students in Iran. Unfortunately, there are only limited number of empirical studies related to this topic. It has been substantially reviewed and indicated that more than 96 research studies, reported indirectly the relation of IT with this study. However the present study is based on use and type of IT. Review of related literature was conducted from various sources i.e. periodicals, books, papers, review of articles, PhD and master dissertations, etc. This chapter is divided into two parts: firstly, review of related literature out of Iran i.e. International scenario, secondly review of related literature in Iran i.e. National scenario. Some of the closely related and the most latest studies have been conducted, experienced and/or reported in the use of IT have been summarized below:

2.1 INTERNATIONAL SCENARIO

A number of studies examined the value and contribution of ICL, information professionals, and information content to academic organisation performance, health and success. Highly reputed academic organizations require a steady stream of actionable use of IT to sustain a competative advantages. The more competative use of IT, the greater the need/use of information and the better the education and research in information and library services. Literature on the relation of ICLs their services and productivity is scattered among various disciplines. In the LISc field, the studies are either describe the concept value and ways to measure it and/or describe the calculation of the value of information products, and services using measurement (Griffiths 1982) (1). However, the value assessment from the users perspective was advanced by the work of King et al
during a study on the value of the Energy database (as referenced to in Griffits 1982).

Graham and Weils (1975) study consider as the seminal work on value information services (2). This study evaluated the benefit of service provided and derived a value of information something that had never been before. Both of these studies developed a cost/benefit ratio comparing the benefits likely to be saved or cost saving to product cost. Valuation on methodology of this type were most fully developed and widely applied by King’s research in the late 1970s and 1980s. A comprehensive review of this study is available in Griffiths and King (1993): Special libraries increasing the information age (3). A study by Zuderi (1999) also contains review of research conducted on the relationship between information and R & D with a focus on the impact of information and newer technologies on innovation and research (4). Bearman et al (1985) have cited continously factors for the decline in R & D growth of service sector (5).

Aston (1983) conducted a paper entitled “Information Technology; Here and Now Benefits.” This paper starts with a short description of IT. Information Technology has been described as the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a microelectronics-based combination of computing and telecommunications. This short paper, intends to offer some evidence of the benefits afforded by IT and confines this to the field of learning and education, and perhaps receive, a good service within the library. With the growth of distance learning, self-paced learning, individualized learning and the need to continue to learn throughout one's lifetime as career patterns change, the roles of teacher and librarian merge towards the common goal of knowledge transmission. A new partnership is developing between the librarian, the computer and the teacher. Each has distinctive qualities to offer, but the combination of all three can provide a formidable force in the learning process (6).

Kohl and others (1983) in their study entitled “Information Technology: Its Impact on and Implications for Education in Montana; A Critical Issues Paper”, examined critical issues raised by the application of new technologies in public education in terms of the challenges they present to the Montana educational
A statement of each issue is followed by a discussion of its implications. The issues examined relate to the following topics: 1) application of IT as it affects teachers' roles and preparation; 2) teacher preparation and re-education to utilize new technology; 3) preparation of faculty, administration, and staff in teacher training institutions to use new technologies and to apply them in teacher training; 4) recruitment of teacher education students; 5) the status of teacher education within the university system structure and leadership in preparing education personnel; 6) recognition of the place of education and its institutions in preparing knowledge workers; 7) the human needs of individuals; 8) cooperative efforts to provide structure, coordination, and resources for a future-oriented education program; 9) access to IT for all students and for preservice and in-service teachers, particularly in rural areas; and 10) national and regional reciprocity of education.

However, Evans (1984) in his paper entitled “Teaching new technologies: whose role is it?” which was presented to an open meeting of the section on library schools and other training aspects during the IFLA general conference, Munich, 1983, indicated that if a school of librarianship defines its role as educating people for careers in information management, then it has a central role to play in teaching the new communication technologies. It should concern itself primarily with teaching about operations, applications and use of information technology. There is a core knowledge for the information professional. The information management core programme would concentrate on understanding theories, principles, practices and technologies employed in information handling. It must also liaise closely with other departments that have degree programmes in the areas of technology design, product development, business and management. Such an approach will require undertaking some difficult, time-consuming and expensive activities, but they will be worth the effort.

Hiltz (1984) used the Electronic Information and Exchange System (EIES) to study the applications and impacts of a CMC system on office workers. She discussed factors that affected usage of computer conferencing systems, factors that contributed to the success of group computer conferences, the evolution of user behavior, and help-related issues.
Le Franc (1985) undertook a study entitled “Information Technology Development in the French Educational System.” The author reviews the history of Information Technology in French schools, which goes back more than fifteen years. The equipping of schools and training of teachers have been the responsibility of the Ministry of Education, with help from the Ministry of Industry. The successive stages are detailed, with the program goals defined as: training teachers for a variety of competence in National Education; training of teachers in the use of Information Technology; and the initiation of volunteers (teachers, parents and pupils). Two tables are included outlining home computers vs. professional level microcomputers and descriptions of current developments and numbers installed in various institutions as of 1981, 1983, and 1984; and information concerning approved funding for equipment installation in various educational institutions for each year from 1979-1984. The article concludes with a summary of the "Information for All" Plan, presented by Prime Minister Fabius on January 27, 1985. The four types of Information Technology systems to be used are defined (10).

Chen and Brovey (1985) examined a study entitled “Information Technology and the Educational System: Its Implications for Organizational Development.” Educational change does not occur overnight, but the introduction of IT will initiate a chain reaction of changes in the curriculum, instruction, and organization of education. Research on the process of change both identifies factors involved in the introduction of innovations and suggests guidelines for educators. Two phases in the pursuit of change can be defined: (i) developing readiness in the educational system by teaching about the technology and redefining the educational problems amenable to technological handling; and (ii) experimenting and exploring the solutions offered by technology to central problems in education, followed by diffusion and implementation. Teachers and curriculum decision makers and developers must be prepared to cope with the transition from a rigid format to a flexible one. Changes in instruction would enable increased productivity of learning, mainly through individualizing, i.e., adapting the instructional process to learner variables through automated diagnosis, advanced computer managed instruction, or the development of individualized instruction systems.
Organizational changes resulting from the availability of information technology may include the home as an alternative site for learning, special interest study groups, and educational networks. Such changes should be approached with careful planning in order to minimize the social cost of hasty changes based on unrealistic expectations and beliefs (11).

Hurych and Torok (1985) carried out a survey entitled “Identification and Analysis of Factors Affecting End Use Online Searching.” Mail surveys were designed to determine the current status of end user and online searching was sent to three populations: 473 faculty members in 12 departments at 20 universities, online search coordinators in 89 academic libraries, and 15 library school educators. Direct interviews with 10 university faculty members were also conducted. Faculty were surveyed with respect to access to computing resources, familiarity with online searching, and information sources supporting teaching and research needs. Online coordinators were surveyed to identify existing and proposed library-based programs for educating end users. Library Science faculties were asked to assess the impact of end user searching on libraries and library school curricula. Direct interviews with faculty who were occasional online users dealt with an evaluation of online searching as an information support for teaching and research. Faculty results indicated a high level of familiarity with online searching but only a moderate level of end user searching. Low level of searching was attributed to lack of computing resources, familiarity with only limited systems, lack of funding, and lack of perceived need. The survey of online coordinators identified several existing or proposed library programs for educating users. The overall reaction of library educators was that library schools are attempting to prepare future librarians to work with a computer-literate end-user population interested in acquiring information directly. All of the faculty members interviewed endorsed the concept of end user searching, but most professed reluctance to do their own searching. It was concluded that a vacuum still exists between the potentially useful resources of academic libraries and information needs of potential user groups (12).

In 1986 a survey (Information Technology in the College Library; Teaching Aid and Housekeeping Tool) was carried out by Library Association Record.
This survey investigated college library provision of Information Technology, including audiovisual materials, and gave a brief overview of how the average college library is using the new technologies as both housekeeping tools and as teaching aids. Technologies studied include: videotex, online bibliographic databases, housekeeping systems, integrated systems, and software loans. Firms promoting, their products in the college library market-database, Logical Choice, and Oriel were reviewed (13).

Brown and Mills (1987) in their study entitled “Developments in Computer and Information Technology Education and Training and Their Implications for the Youth Training Scheme” examined recent developments in Computer and Information Technology (CIT) training in the United Kingdom to determine those elements of CIT training that could be incorporated into the Youth Training Scheme (YTS). Information for the study was obtained from national and regional officials of the Microelectronics Education Programme (1981-86), teachers, in-service trainers, and other interested parties. Although widely acknowledged as being innovative, the microelectronics program’s impact was determined to be very patchy from the standpoint of teaching and learning strategies used in the schools, and it failed to provide adequate support for teachers involved in the program. Scotland, on the other hand, appears to have initiated a more promising method of CIT. Scottish schools emphasize using computers in ordinary school subjects versus England’s decision to confine computers to computer studies departments. After examining these and other initiatives and practices related to CIT, the researchers formulated 16 specific proposals for incorporating CIT into (YTS) programs. The importance of allowing CIT developments to be used differently according to region, industry, area, or local interest, the value of local support groups, and the need for local negotiations over development and implementation were emphasized (14).

Brown (1988) in his paper entitled “Micros in School Libraries: How MESU Is Supporting A Change.” Contributed to a thematic issue on automation in school libraries. The Microelectronics Education Support Unit (MESU) promotes and spreads good practice in the use of IT in schools by working with advisers in Local Education Authorities (LEAs). Many LEA's and individual schools are seeing the
school library as an appropriate location for computers to support the developments in cross curricular work and resource based learning and MESU monitors developments in this field. Examines the concept of school library management systems and considers the value of collaboration in this area, with local authorities encouraging school libraries to link into wider resource networks (15).

Brophy and Hayter (1989) conducted a study entitled “The Use of Information Technology by Senior Staff in UK Academic Libraries: Final Report.” Result describes the methodology and results of a research project conducted between Oct 1988 and Mar 1989 to investigate the use of Information Technology (IT) by senior managers in UK academic libraries. The survey was carried out by sending a postal questionnaire to the librarians and deputy librarians in all universities and polytechnics in the UK. Results are based on the responses of the 161 people who returned usable questionnaires, interviews with senior library staff at 4 academic institutions, and a more detailed study of the use made of IT by the librarian and deputy librarians at Bristol Polytechnic Library. The survey discovered that over 80% of senior academic library staff make use of IT in their day to day work, and that a wide range of activities are now being carried out using computers. Concludes that there is a need for a series of intensive short training courses in the use of library-specific software packages to enable senior managers to develop their skills in as short a time as possible (16).

Collis (1989) presented a paper to the UNESCO International Congress on Education and Informatics entitled “Using Information Technology to Create New Educational Situations.” This report reviewed and discussed educational applications of Information Technology (IT) at the elementary and secondary levels. Each of the six topical sections of the report discussed the instructional potential of information technology, realization of the potential, and predictions for the future. The first section addresses new resources, e.g., computer software, to support learning by individualizing instruction; bringing the outside world into the classroom; accessing vast amounts of information; processing complicated data; and providing micro worlds, i.e., some kind of bounded universe, for student exploration. The second section approached the expansion of computer and
information science as a new curriculum situation, particularly at the secondary level, assesses its current success, and suggests other uses for its tools than are typically offered in schools. The next two sections evaluated changes in the organization of student interaction during learning experiences and additional changes in the role of the teacher. One such change may relate to the move from textbook-related class preparation to teachers creating their own instructional materials, using IT to design and create courseware. The fifth section discusses changes in the physical organization of educational situations within the traditional school building, and the sixth section describes changes in the macro-organization that IT has the potential to create (17).

Thorpe (1989) in a study of teachers in the United Kingdom's Open University, who used a Computer Mediated Communications System called COSY, tried to document their experiences with and attitudes toward the system. The results of interviews and analysis of log sheets revealed that: (i) the sample of teachers (n=10) showed a range in usage of the COSY system from low to high, consistent with the expected range of use in the population as a whole; (ii) all but 30% of the teachers reached the expected 20 hours a week online use; (iii) teacher usage of the system decreased during the first year as extensive browsing gave way to developing more efficient ways for using the system; (iv) the system was used for electronic mail, teleconferencing, and general conversation purposes; (v) factors affecting student usage included cost, workload, difficulties using the software, and disappointment with the conference results; (vi) electronic mail and telephone usage were more popular than conferencing, but none of the three was as popular as the more traditional face to face exchange; and (vii) typical of most innovations, those who had difficulty with the system used it less and were less enthusiastic about its continuation than those who found it easy to use. It was concluded that future use of the system would contain a less ambitious range of conferences, and that teachers would be better trained to use the system and to help their students use it. A discussion of home computing and its implications for distance education is included, as well as a copy of the interview schedule. A list of 76 studies from the Centre for Information Technology in Education completes the report (18).
Loughridge (1989) in his paper *(Information Technology, the Humanities and the Library)* reviewed some current computer-based projects in humanities research and teaching and considered the implications for the future development of library and information services to humanities scholars and for the professional education of librarians. It is concluded that the penetration of information technology into humanities research and teaching activities and the development of the concept of the electronic campus justify increased emphasis on information technology, particularly online searching and familiarization with a range of the software packages currently being used by researchers and teachers in the humanities, in the professional education of academic librarians. The humanities resources option on the MA Librarianship programme at the department of information studies, University of Sheffield, was described (19).

Monnickendam and Cnaan (1990) in their paper entitled “Teaching Information Technology to Human Service Students: Meeting the Needs of the Future” specifies the knowledge and skills needed by human service professionals to utilize the potential of IT for better case delivery. A holistic integrative approach is suggested for computerization of the human service agency. A course for graduate students that incorporates this concept is described (20).

White (1991) carried out a study entitled “Information Technology in the Preservice Social Studies Methods Course.” This paper describes how the author has used technology in a preservice social studies methods course, in order to demonstrate how technology supports teacher planning and how technology can magnify teacher effectiveness. The steps for curriculum integration are outlined. The conditions on the extent to which students can benefit from technology use in the preservice methods are also assessed (21).

Meadows and Bukhari (1992) conducted a study on “The Use of Information Technology by Scientists in British and Saudi Arabian Universities.” They compared the use of IT by faculty members and post graduate students in British & Saudi Arabian Universities in the departments of chemistry, Biology and Engineering. A questionnaire survey method was used to collect data. The results indicated a rapid growth and diversification of information technology activities in the UK. It showed that British users have used online and offline databanks two
times more than the Saudi Arabian users. 70.2% of the British users used e-mail while none of the Saudi Arabian. The users of the two countries used word processing, data analysis software and graphics. Half of the users in both countries used IT with the purposes of information seeking, communicating and doing research works (22).

**Cox (1993)** examined a study on “Technology Enriched School Project; the Impact of Information Technology on Children's Learning Computers and Education”. The purpose of this paper was to consider what level of technology enrichment in schools is required to achieve an enhancement of pupils' learning. This question relates to one aspect of the 3-year Impact project commissioned by the British Department for Education to evaluate the impact of Information Technology on children's achievements in English, Mathematics, Science and Geography, for pupils aged 8-10, 12-14 and 14-16 years. The focus of this paper is on the level and use of Information Technology (IT) in 70 of the 87 Impact classes which returned data from both the class teachers and each of the individual 2300 pupils, providing periodically records of the nature and use of IT in their lessons. The summarized quantitative pre- and post-tests for all four subjects are discussed and the primary results are related to the level of IT use analyzed through a rating scheme for frequency of pupils' IT use, developed by the project, together with the analyzed data from the teachers' own records. The results showed that those classes of pupils which had the highest regular use of Information Technology in a subject experienced an improvement in learning compared with low or non users. Significantly, this use was possible within the current level of resourcing available in British schools, although it is clear from the evidence that how the software was used and integrated within the subject was entirely dependent upon the enthusiasm and skills of the teacher and was an important contributory factor to the pupils learning (23).

**Lindberg and others (1993)** did a research on “Use of Medline by Physicians for Clinical Problem Solving”. The objective of the study was to find out the effects of Biomedical online searches on patients care and other medical professional activities. 552 physicians (specialists) were studied in different medical disciplines. Results showed that physicians used Medline to get “clinical
information”. Respondents reported that fast access to Biomedical data through Medline has had good impacts on them related to treatment of the patients (24).

Scaife and Wellington (1993) in their books entitled “Information Technology in Science and Technology Education; Developing Science and Technology Series” tried to help teachers develop their technological education. Science and technology are often presented and taught as two separate essences. When this is done, students as well as teachers are forced to attempt to develop the appropriate linkages. This book is one of a series designed to help teachers develop their science and technological education in ways that are both satisfying to themselves and stimulating to their students. Emphases are placed on providing an introduction to the use of Information Technology (IT) in science and technology education. The book partitions into three sections (Principles, Practice, and Issues and Policy) that contain the following chapters: 1) IT into the curriculum; 2) Frameworks for IT use in science and technology education; 3) Introduction to the use of IT in school science and technology; 4) Computer Assisted Learning (CAL) tutorial uses: Instructional uses of IT in science and technology education; 5) Simulations; 6) Modelling; 7) Databases; 8) Data-logging; 9) Interactive video; 10) Word-processing and desk-top publishing; 11) Spreadsheets; 12) Computers in technology laboratories; 13) Issues to be addressed; and 14) Issues for the future (25).

Cartwright (1994) in his article (Information Technology; Considerations for Tenure and Promotion) considered some issues regarding the academic environment. The last few years have witnessed an explosion in communications technologies on US college and university campuses, including faxes, cellular telephones, campus networks, and modem equipped microcomputers. This article discusses two major related issues that often surface in the academic environment. One involves the eagerness of many faculty members to embrace the new technologies. The other issue is the reluctance of many faculty to become too deeply involved in the actual creation of technology applications because they many not pay off in the long run. The author considers these two related issues, as well as the faculty who use and develop technology applications. It offers some
Mc Farlane (1994) carried out a survey entitled "Encouraging Student Teacher Confidence in the Use of Information Technology." Homerton College has taken action to improve the confidence of student teachers on a 4 year primary B of Ed course, in the use of computers. Surveys taken over 3 years show those students entering the course describe themselves as having low information technology skills. A 2-h IT induction session, supported by self-study materials, was introduced to raise the level of student confidence. A second survey of first year students at the end of the autumn 1992 term indicates a significant change in students' perceptions of their own skill levels. However, although a majority felt competent in their own use of IT, few felt sufficiently confident to teach others. In a second course, offered in year three, students engaged over a much longer period in preparation of multi-media classroom resources. This experience does seem to have a more positive effect on students' confidence in terms of personal and classroom use of computers. As a result of this course, the students have all shown themselves prepared and able to use IT based resources in the classroom (27).

Brown (1994) presented an article entitled "Processes to Support the Use of Information Technology to Enhance Learning." This article is based on the evaluation of the Information Technology Teacher Training Development Programme (1988-1992). The program sought to support schools and teachers in the management of IT and with classroom applications of IT to enhance learning. The article seeks to draw out key lessons about processes to support the use of IT to enhance learning which may interest policy-makers and practitioners. Issues surrounding teacher involvement and ownership of the change process, professional development and materials development are examined. A recurring theme is that teacher development in the realm of IT is as much about learning about the process of learning as learning about IT, with a significant aim being the promotion of reflectiveness among teachers and students. Similarly at the level of the school, policy towards IT should inform and be informed by opportunities for transformation or consolidation of aspects of the wider teaching and learning environment (28).
Schiller (1994) conducted an electronic survey to document what academic library and computer centre professionals are doing to instruct users about the Internet tools and resources and to determine whether they are working together or independently in this area. She also claims that the Internet is changing traditional ways of accessing and exchanging information among scholars and researchers (29).

Lynch (1995) in his book entitled “Information Technology and the Remaking of the University Library; New Direction for Higher Education” identifies some of the trends being confronted as Information Technology becomes more pervasive in university libraries and campus agencies. The seven papers in this volume address issues and concerns that the transformation will raise while campus administrators, faculty members, and others work to find ways to move effectively to the new electronic environment. A broad assessment of the current higher education environment is offered in chapter-1. "The University and Information Technology: Interpreting the Omens" (Donald N. Langenberg). In chapter-2, "New Technologies, Old Politics: Political Dimensions in the Management of Academic Support Services" (Richard M. Johnson), the political environment of the college campus is discussed, with a focus on the need for the library have a central role in services, technology, and organization. Chapter-3, "The Disappearance of the Library Issues in the Adoption of Information Technology by Humanists" (William Goodrich Jones), emphasizes that humanists form a central part of higher education and their role cannot be overlooked. Chapter-4, "The Academic Library Collection in an On-Line Environment" (Ross Atkinson), describes how advances in Information Technology are forcing librarians and administrators to reinvent the library. Chapter-5, "The Instructional Program and Responsibilities of the Teaching Library" (Carla J. Stoffle & Karen Williams), deals with the importance of successful institutions and libraries of the future equipping students with lifelong learning skills. Chapter-6, "Using the Accreditation Process to Transform the Mission of the Library" (Ralph A. Wolff), recognizes that libraries are connected to both the subject matter of learning and the emerging technologies for access. In chapter-7, "The Technological Framework for Library Planning in the Next Decade" (Clifford A. Lynch), the
evolution of the library is placed into the broader context of the forces shaping the university and altering the nature of the scholarly disciplines (30).

**Babcock, Bush and Lan (1995)** conducted a survey on “Executive Use of Information Technology in the Public Sector; An Empirical Examination.” This paper aims to provide a composite sketch of the executive utilization of Information Technology and its relation to agencies’ use of such technologies in state and local government organizations in Arizona. Data was collected through mail surveys by a group of faculty members and graduate students at the School of Public Affairs, Arizona State University. The findings showed that 1) regardless of their functional managerial responsibilities, executives surveyed in the study all reported involvement in decision making concerning information technology acquisition and management: 2) organizations that enjoy a higher level of Information Technology use tend to have managers who have positive attitudes toward information technology; 3) executives’ personal familiarity (personal use of) with Information Technology has only limited correlation with the organizations’ technology adoption and use; 4) executives’ attitudes toward, and personal involvement in, information technology, are directly related to their educational background and age. The paper concludes that positively shaped attitudes toward Information Technology on the part of public organization managers are essential in determining public organizations’ technological innovation and service provision. Such attitudes do not grow with age, but are obtainable by way of education (31).

**Rolinson, Meadows and Smith (1995)** did a research on “Use of Information Technology by Biological Researchers.” 254 biology researchers were studied in this research. Data was collected by questionnaires. Results indicated that there are differences in usage, depending on the institution and specialization involved. Senior researchers are typically more information active than their junior colleagues but such differences are relatively minor, and can mostly be explained in terms of the pressures on senior staff time. Results also showed that 50% of the researchers used IT for educational purposes. 46% of the respondents used IT in order to communicate with other researchers. 87% of the respondents had satisfactory views about IT. Most of the respondents had PC in their office and also half of
them had computer at homes. The respondents used ondisc databanks, online databanks, e- mail, BBS and different softwares (32).

*Kongsuphakul (1995)* carried out a survey on “The Use of the Internet among University Students in Bangkok-Thiland.” The purpose of the study was to analyze the status of Information Technology utility, paticularly the Internet. It was found that there was a correlation between possessing a personal computer and the use of the Internet system. Specifically, possessing a personal computer is compatible with the frequency of the use of the Internet for educational purposes, with extra research on academic matter, with the number of access to the system. Most students used e-mail for contacting their friends and they used it to exchange knowledge with the students of one institution with the students of other institutions and/or with foreign friends. It was also found students used the Internet for their homework or assignment because they did not have much time to surf the Internet for other purposes as they had a lot of subjects to study. The obstacles in the Internet, were the internal system itself and the communication lines. Because of lengthy download timing and insufficient online availability, most students felt frustrated while using the university Internet system and logging on to the system at home (33).

*Reza-ee sharifabadi (1996)* conducted a study on “The Use of Internet by Psychologists in all Australian schools of psychology.” This study explored the use of the Internet by psychologists in all Australian University Schools of Psychology. In particular, this work probes the effects of the Internet on the psychologists’ research activities and general information seeking and communication behaviour. Data was collected in a four-stage approach, utilising printed and online questionnaires and an online diary. Findings of the study suggest that psychologists use the Internet extensively for their academic activities. They perceive that the Internet is affecting their approach to the research process. The Internet helps psychologists to keep up-to-date with recent developments in their areas of interest. Many psychologists claimed that they had wider and more frequent communication with colleagues and collaborators which led them to new directions in research. Psychologists’ research activities had also been influenced by access to online information systems and data-bases accessible via the Internet.
Psychologists reported that increased access to resources, quicker and easier communication with colleagues and searching for information influenced the quality of their research as well as the quantity of their publications. Two other types of behavioural changes emerged from this investigation. They were changes in psychologists’ use of information sources and changes in information dissemination. Although journals remain by far the most important source of information and the primary means of formal communication among academics under investigation, many psychologists mentioned that they use e-mail and electronic discussion groups in keeping up to date, followed by newer Internet services such as World-Wide Web. Attendance at meetings seems no longer a priority for obtaining information, as was the case in American Psychological Association’s (APA) studies in 1960s. Electronic publishing of articles via the Internet, especially posting their own papers to web sites, was also a growing practice among psychologists. Many psychologists also used the Internet for circulation of preprints, submission of papers to publishers and conferences, requesting reprints from other authors, sending requested reprints, reviewing manuscripts sent by publishers and editing manuscripts sent via the Internet by other people. The implications of this study for Internet development, user training, and further research are explored (34).

Tellis (1997) did a research on “Information Technology in a University: A Case Study.” Reports on a case study conducted at Fairfield University, USA, on the rapid increase in Information Technology implementation. The study replicated the work of Levy and extended it by examining aspects of the Internet, World Wide Web, and client/server computing. Survey instruments were the primary means of data collection, augmented by interviews and internal documents. The results show potentially large increases in expenditure ahead as users feel the need to use the new technology. Users, however rejected most of the listed sources of funds to pay for the increase in expenditure. Recommendations include more formal server capacity planning and configuration, and shorter Information Technology planning cycles. Some of the conclusions from the data analysis, interviews, and literature were: Institutional planning for Information Technology is inadequate. Reduction in the workforce through improved productivity could
redress concern over the cost of Information Technology. A shorter planning cycle is needed for Information Technology. Allocation of resources is not equitable among users. Users are dissatisfied with their ability to influence computing decisions. Faculty and administrators did not accept any potential sources of funding for Information Technology. Faculty and administrators felt that computing enhanced the scope of their work. Faculty and administrators have differing views on the level of computing resources at the institution. The expenditures and procedures for implementation of client/server computing were not carried out in a systematic and documented manner. The equipment acquisition procedures are not responsive to user needs in terms of either pricing or timeliness. Equipment maintenance service is inadequate. Equipment maintenance responsibilities assigned to agencies are not clear to users. There is a low level of user confidence in network integrity. The faculty expect to use networked PCs in the classrooms. User productivity is lowered due to resource allocation problems, and other technology issues. There will be a significant increase in the use of the Internet and WWW by faculty over the next five years. The requirements of Internet, and WWW need to be met by a well-designed client/server environment. The shift to client/server computing will result in higher financial burdens. There is no formal procedure to configure the servers using capacity planning procedures. Multimedia classrooms for instruction and support will be needed in the near future (35).

Mook Oh and Meadows (1998) in a study examined “The Usage of Information Technology in South Korean Universities.” In this study questionnaires were sent to all academic staff, research students and research assistants in six selected universities. Interviews were arranged with the staffs from computer centre and the library of each university, along with academic staff who were concerned with departmental computing. The under surveyed universities were divided into three groups (A.B.C) depending on the level of their electronic networking activities. The result of the study indicated that the majority of respondents (70%) have less than ten year’s experience of using computers. In terms of subject background, engineers make more use of Information Technology than scientists, and also there are differences between the engineering groups. 86%
respondents in group A, 50% in group B, and 26% in group C universities have access to computing facilities such as: data collection, statistical analysis, graphical display, word processing, personal database, electronic mail, bulletin board, file transfer, telnet, OPAC, CD-ROM search, campus database, nationwide database and international databases. The survey also investigated the problems respondents faced in their use of Information Technology (36).

Yuen and others (1998) in their study surveyed “Using the Internet for Education: Training for Students and Teachers.” They envisaged a model of putting the concept of using the Internet for education into practice in school in which the students-teachers were trained to have certain competence in developing course materials in the www format for broadcasting on the Internet. Some preliminary findings of the questionnaire on their attitudes towards using the Internet for education indicated that they generally had positive attitudes but they probably needed more time by self practicing in order to develop sufficient confidence in authoring their own course materials on the Internet. The situation was critical at Hong Kong institute of Education (HKIEd) as there was still no strategic planning to integrate the Internet with any existing teacher education programme. It remained largely the responsibility of individual teacher educators in helping the students and teachers to develop basic competence and favorable attitudes in using the Internet for education (37).

Perry, Perry (Leslie A), and Curlin (1998) examined a study on “Internet Use by University Students: An Interdisciplinary Study on Three Campuses.” This study sought to determine if differences exist among various age groups regarding students’ use of the Internet. Surveys were administered to 548 students from three regional universities in the south eastern USA. Survey responses were then analyzed to determine how many students regularly use the Internet, how many hours per week regular users spend on the Internet, and what computers they use. Information was also tabulated for use of e-mail, use of the Internet to obtain university information, and for the number of students who had home pages. Finally, survey responses were analyzed to determine which students: consider the Internet to be a fad; project their future use of the Internet to be less, the same, or more than now; and project they will use the Internet in their chosen careers (38).
Saiseesod (1999) studied “The Use of the Internet by Students, Instructors and Administrators of Rajabhat Institute Udon Thailand.” In this research three hundred and sixty-one students were studied as samples. It was revealed that most students used the Internet 1-2 times a week (66.5%) for 1-2 hours per session. Most (59.8%) of them reported that the purpose of using the Internet was for self study and to save time in seeking information. They revealed that there were not enough computers in the institution to browse the Internet. Most of them suggested that the institution should increase the number of computers in the computer rooms (39).

Wee (1999) carried out a study on “Internet Use Amongst Secondary School Students in Kuala Lumpur, Malaysia.” Reports results of a study to identify the pattern of Internet use among 608 upper secondary science students from 14 schools in Kuala Lumpur, Malaysia. All schools have computers, out of which nine have Internet facilities and three Internet terminals are located in the school resource centres. About 51.5% of respondents used the Internet. The main reasons for non-use were lack of skill and non availability. The users mainly accessed the Internet from their homes and acquired Internet skills by self teaching or learning from friends. Slightly over 70% of Internet users spent less than five hours a week on various functions, but few used it for study related activities. The average time spent on the Internet was 4 hours per week. Most of the Internet users (91.4%) explored the World Wide Web while 75.4% used electronic mail, 52.1% used IRC or ICQ, 15.7% joined newsgroups, 2.2% used it for downloading and 0.6% used it for playing online games. Major problems faced were 'lack of skills' and 'lack of time'. The Internet was perceived to be a rich information reservoir that provides fast and efficient access to information. The majority believed that the Internet did not affect their learning process, with 20.7% reporting a positive effect and 4.5% a negative effect. There were significant relationships between the use of Internet with gender, English grade, parents' level of education, parents' income, availability of Internet in school and location of Internet in school (40).

Sherry (1999) carried out an investigation on “Internet and WWW Usage in an Institution of Higher Education." This paper reported the results of a five-year case study of the use of online tools: Internet, e-mail, and the WWW, at the
University of Colorado at Denver’s Graduate School of Education. Ten research questions were investigated using multiple surveys; interviews of faculty, staff, and students; a focus group; and an analysis of electronic artifacts; a focus group; and an analysis of electronic artifacts. Principal findings included the following: self-efficacy perceived value persisted across time and across programmes as success facilitators. Personal/cultural compatibility, rather than time, separated earlier from later adapters. “finding a voice and having something to say”, a factor identified under various names by other researchers, posed a barrier for students and faculty alike. Users valued personal scaffolding but had individual preferences concerning specific types of scaffolding (41).

**Zhang (1999)** conducted a survey on “Scholarly Use of the Internet-Based Electronic Resources: A Survey Report.” Article included in an issue devoted to the theme: Human response to library technology. Reports results of a questionnaire survey of the use, by a group of Library and Information Science (LIS) scholars, of four printed and four electronic library and information science periodicals. The printed periodicals were: College and Research Libraries; Journal of Academic Librarianship; Journal of the American Society for Information Science; and Library Trends. The survey group consisted of 203 authors identified as having published in these 8 periodicals and with in press papers as of July 1997. The electronic periodicals were: E journal; LIBRES; MC Journal; and Public Access Computer Systems Review. Results reported include researchers' demographic information, frequency of use of various Internet tools and resources, ways of accessing various Internet tools and applications, strategies of locating electronic sources for research, opinions on citing electronic sources, evaluation of electronic sources and suggestions for improving scholars' use of electronic sources for research. Suggested improvements include: more research sources on the Internet; better stability, reliability and quality of electronic sources; and better organization and indexing of electronic resources to facilitate efficient retrieval (42).

**Edling (2000)** examined a study on “Information Technology in the Classroom: Experiences and Recommendation.” Four years of classroom experience indicate that Information Technology can enhance student learning. Commercial interest in IT for training supports this enhancement. Classes taught
are described. In addition, methods, hardware, software and various aspects of application and use are discussed. Although video and sound have not been used, graphics, programming with Javascript and guided exercises have been successfully applied. The use of the integrated courseware, Blackboard, has been used effectively for testing and keeping grades. Twelve tests were given to approximately 50 students over a period of eight weeks. Tests were primarily multiple choice although other forms of questions could have been used. Tests were automatically graded and scores posted with few difficulties (43).

Shaw (2001) undertook a survey on “The Use of the Internet by Academics in the Discipline of English literature: A Quantitative and Qualitative Approach.” The Internet and its usage have been well documented during the last decade. The English academic’s use of this medium is not so widely known. This paper attempts to summarize research findings in relation to the foci: information seeking, information use and information needs. It also discusses institutional constraints and personal factors that may influence the use of the Internet as a tool for research and teaching amongst this target group. The research is part of a larger dissertation that involved using both quantitative and qualitative approaches for empirical data collection (44).

Charupan (2001) in her work examined “The Use and Problems of the Internet for English Language Teaching in Thai Public Universities.” Results were as follow: (i) With reference to the general background, it was found that more than half of Thai English teachers used the Internet for some part of their teaching. 8.3% never used the Internet for their teaching. Slightly less than half used the Internet for classroom teaching, while only one teacher used it for distance learning. (ii) Regarding the use of CMC (Computer-Mediated Communication), and resource on the Internet, E mail was used mostly. Most teachers used the Internet for planning, accessing ready-made teaching materials online and a few of them for needs analysis. Teachers also used web sites for accessing articles on English teaching, doing exercises from on-line courses, summarizing news and assessing work assignments while using the Internet. Nearly half of them were interested in creating their course web pages to teach online. (iii) As for the difficulties of using the Internet, the most serious problem was limitation of student
access to the Internet. Other problems teachers reported from their current using was time consumption, not knowing locations of required web site and not finding previously used web sites. Most teachers faced problems of lack of computer skill in using computer-conferencing programme and in creating class web page for their future use. While some teachers lacked skills in creating web pages in their Internet current using (45).

Dulle and others (2002) evaluated “Application of Information Technology for Research in Tanzania: Feedback from Agricultural Research.” Reports results of a study aimed at assessing agricultural researchers' access to Information Technology (IT) facilities. It also examines to what extent such facilities are used in facilitating researchers' access to scientific information. Data were collected through a questionnaire survey to 321 agricultural researchers selected randomly at 13 research centres throughout Tanzania. The response rate obtained was 76.3% out of 244 respondents, 170 (69.7%) reported having access to Internet or electronic mail. While 79.3% of the respondents having access to the Internet reported using the facility frequently for information search, the electronic mail facility was not popularly used by the respondents for information requests to sources outside respondents' institutions. CD-ROM technology was found not to be readily available to many respondents because of the unavailability of such facilities at their research centres and minimal use of electronic mail facilities for resource sharing with other centres' CD-ROM databases. Concludes that, along with a low level of IT development in the country, the available IT facilities have not been fully exploited to facilitate agricultural researchers' access to information. Some measures to improve IT infrastructure and its use for improvement research productivity are recommended (46).

Uddin (2003) surveyed “Internet Use by University Academics: A Bipartite Study of Information and Communication Needs.” In Bangladesh, there are only 0.2 million Internet users out of a population of 140 million. Because there is a lack of academic research on Internet usage, the prime objective of this study is to report the level of the Internet use by university academics for their information and communication needs. The study also sought to find out whether differences exist among the various levels of academics in terms of their use of the Internet.
Six categories of information and communication needs were identified and a survey conducted among the lecturers of Rajshahi University where the Internet was introduced in 2001. Findings showed that Internet use by academics is useful for some common needs and that the academic rank of users is an important factor in determining the priority of needs. It also showed that there are some barriers to adequate use of the Internet resources. Suggestions are made for increased use of the Internet, to benefit the nation as a whole (47).

Mugwisi and Ocholla (2003) in their investigation “Internet Use Among Academic Librarians in the Universities of Zimbabwe and Zululand” they examined Internet use trends by academics and librarians at the Universities of Zimbabwe and Zululand, with specific reference to the use of resources for research and teaching. A survey by means of a questionnaire was conducted among the study population at the two institutions. Preliminary results indicate high computer and Internet skills among librarians from both institutions. Theresults also indicate that e-mail and the Web were used most for workand personal use, while telnet, other library OPACs and electronic journals were used most for work purposes. The study also highlighted rather similar problems facing the two institutions in terms of the Internet accessibility. Access was a major concern, due to inadequate provision of computers and the existing connection to the Internet. Inadequate training in the use of the Internet resources and lack of awareness amongacademics and other potential users were also highlighted. Despite these problems, the study revealed that there is a great potential for Internet use and appreciation among academic librarians and users in the two institutions. This paper reports on findings received from librarians; a report on both librarians and academics will appear in a future publication (48).

Zare-ee Zavaraki (2003) did a survey on “The Impact of Network Communications Usage by Faculty Teachers on Learning Outcomes of Students.” This paper reports the results of a study conducted on a higher education level. It is focused around the impact of network communications usage by faculty teachers on learning outcomes of postgraduate students. The paper addresses the question of how faculty can help students develop their knowledge and application in the area of computers (49).
Adika (2003) conducted a study on “Internet Use Among Faculty Members of Universities in Ghana.” Lack of access to current materials in libraries of universities in developing countries is a major problem that hinders research and teaching. Interlibrary loans and document delivery projects have not solved this problem by themselves. The Internet makes it possible for users to have access to large volumes of information irrespective of their geographical location. The three older universities in Ghana are all linked to the Internet. The assumption then is that their faculty now have access to current information through the Internet. Research results show that in spite of the benefits of the Internet, its use among faculty members is still very low. The main reasons for this are lack of access to the Internet and the need for training. Clearly, university authorities need to take immediate steps to provide general access points for faculty through computer laboratories. Again, the expertise of librarians, information professionals and computer scientists needs to be tapped to provide training and refresher sessions for faculty to keep up to date on harnessing the immense potential of the Internet as a source of information for teaching and research. As mentioned, the main objective of this research was to investigate the impact the Internet is having on the use of up-to-date information by university faculty, and also provide basic information on issues such as level of Internet use and access to the Internet among faculty. Respondents were asked questions relating to Internet connectivity at their departments. On this issue, 59.4% indicated that their departments were not connected to the Internet. Only 40.6% indicated that their departments were connected to the Internet. On the use of the Internet, 24.5% indicated that they have never used the Internet, while a total of 75.5% indicated that they use the Internet rarely, sometimes, often or always. A total of 102 respondents (96.2%) have Doctorates or Masters degrees. The respondents are also researchers and trainers at Ghana’s higher institutions of learning. 25.6% of the respondents indicated that they never or rarely connect easily to the Internet, while 45.9% also indicated that they sometimes get disconnected from the network. 87.2% indicated that the system is slow; they therefore wait for more than five minutes for a single Web-page to load. All respondents who use the Internet indicated that they use the Internet for electronic mail. More than half of the respondents (48; 62.3 percent)
have never used file transfer protocol (FTP), nor used discussion groups (49; 62.0 percent). With increase in popularity of the use of the WWW, especially because of its support of multimedia, The majority (80.0%) used the Internet to communicate (50).

Lohar and Roopashree (2004) in their survey entitled “Use of Electronic Resources by Faculty Members in BIET, Davanagere: A Survey” evaluates the use of Bapuji Institute of Engineering and Technology (BIET) college Library in Davangere (Karnataka). A survey of 60 faculty members is conducted through a questionnaire. The analysis of the collected data covers the use of electronic resources and how the electronic resources are improving the academic careers of the faculty and also what are the problems that are faced in using the electronic resources. This concludes that the main intention of the use of electronic resources has been the academic interest of the users (51).

Miller (2004) carried out a research project entitled “Student and Teacher Perceptions of Computer Literacy Education: What are the outcomes?” By surveying non-computer literate students and computer literate students in their perceptions of skill level, researcher found that the students who took a computer literacy class felt more confident in their skill level than those that did not. The computer literacy students ranked their perceptual skill level in many areas of technology (keyboarding, word processing, use of spreadsheets, slide shows, web pages, and databases) higher than those with no computer literacy experience. Ironically, even those who felt they had the necessary skill level to learn on their own ranked themselves, on average, lower in skill level than a computer literate student. The students taking the computer literacy class also indicated perceptual areas of growth in regards to computer skills from the beginning of the semester to the end of the school year. A majority of students indicated the inclusion of technology in their content courses, such as mathematics, science, English, and social studies. Teachers were also surveyed on their uses of technology in their classrooms and students skill level with using particular programs, applications, or hardware. The majority of teachers indicated that students’ computer literacy skill levels are not where they should be regardless of whether they took a computer course or not (52).
Zare-ee Zavarki (2004) presented a paper in World Conference (2004) on Educational Multimedia, Hypermedia and Telecommunications entitled “Association of Use of Network Communications with Background Characteristics of Faculty Teachers.” This paper reports the results of a study conducted on an Indian higher education level. It is focused around the association use of network communications in academic transactions with age, gender, mode of instruction, ranks, discipline, and research experience of the faculty teachers. Some of the experiments and their conclusions have been reported and suggestions for better use of network communications in higher education have been proposed (53).

Luambano and Nawe (2004) assessed “Internet Use by Students of University of Dares Salaam.” This paper is based on a Master’s dissertation whose objective was to determine the purpose for which students of the University of Dar es Salaam use the Internet. It was to determine if students were using the Internet for academic purposes. The study also investigated the level of students’ access to the Internet, as well as the problems students faced in Internet use. The web site has specific information on faculties, institutes, and departments, including training programmes. The Online Public Access Catalogue (OPAC) has been installed at the Main Campus and UCLAS libraries, replacing the manual card catalogues. The OPAC has simple and advanced search options, using Adlib software. Plans are underway to convert the manual catalogue of MUCHS library into an online catalogue. The survey method was used as the basic method for data collection, employing the questionnaire and the interview. Participant observation and focus group discussion are other methods used. The study revealed that the level of students’ access to the Internet was low, and the major reason was that at the time of the study, computers with Internet facilities were inadequate. The findings also revealed that the students who had access to the Internet were not using it effectively. They used it mainly for communication with friends and relatives more than for academic purposes. The cause of this was found to be lack of skills required for effective use of the internet. The study recommends the provision of more computers with Internet facilities, increasing Internet access speed, as well as providing more chances of training in Internet use (54).
Zare-ee Zavarki (2004) in his paper entitled “Attitude of University Teachers Towards the Internet Technology” defines: For more than a century, the most predominant form of instruction in higher education has been classroom-based and instructor led; today this traditional approach to learning is being challenged by new technologies such as multimedia, telecommunications, and the Internet. The evolution of the Internet as a well established, accessible and commonplace technology has profoundly impacted the mode of instructional delivery at higher education level. This paper reports the results of a study conducted on an Indian higher education level. It is focused around the attitude of university teachers towards the role and impact of the computer and the Internet technology use in higher education were included in the scale. In order to parsimony, the statements were categorized in quality of learning, improvement in teaching/research and administration, employment, rural-urban gap, gender gap, help weaker sections, and threat to students and teachers dimensions (55).

Yaghoubi and Shamsa-ee (2004) in their paper entitled “Assessing Effective Factors in Using Internet by Faculty Members of Agricultural College of Zanjan University.” which presented in AIAEE 2004 the 20th Annual Conference Dublin, Ireland, they identified the Internet as a universal network maybe considered as the most important opportunity for policy makers and planners in agricultural organizations. Nowadays the Internet is used in various forms at academic centers. The purpose of this study was to determine effective factors in using the Internet by faculty members of agricultural college. A descriptive survey was used to collect data and appropriate questionnaires were used for this purpose. The sample consisted of faculty members of agricultural college of Zanjan University. Reliability and validity of instrument were determined through opinions of specialists and application of Cronbach's Alpha. Descriptive and inferential statistics were used to analyze the data using SPSS software, version 11. The findings showed that agricultural faculty members had positive opinion toward the Internet use. Also there was a significant correlation between internet usage and characteristics such as: age, English language skills, computer skills, research activities, number of scientific publications and job status (56).
Wingenbach, Pia, and Hamilton (2004) evaluated “Information Technology Use and Effectiveness in the Texas-Mexico Initiative.” IT use and effectiveness, although prevalent in developed countries, does not provide the same reliable resource in lesser developed or developing countries. The purpose of this study was to determine Information Technology uses and effectiveness in disseminating research results from the Texas-Mexico Initiative through the Centre for Grazing lands and Ranch Management. Two of the three northeast Mexico Campuses in this study possessed and used sophisticated information technologies to communicate with researchers outside state and country boundaries. The main method for this exchange has been through the Internet and Computer-Mediated Technologies (CMT) such as e mail and video-conferencing. Texas and Mexico have experienced an increasing inter-dependence due to increased communication and knowledge exchanges. While universities have access to this information, rural communities do not. Rural farmers and producers must rely on agricultural schools to provide them with the information necessary to increase their income and land sustainability. To achieve real economic improvement for the agricultural sector, universities must continue to increase their effectiveness in disseminating information to local producers and farmers. Distance education could provide an economically sound method for reaching a larger percentage of rural communities, if properly employed (57).

Manhas and Kaur (2005) in their study “Internet and Its Use in the Engineering College of Punjab: A Survey” examined the use of Internet in the engineering colleges of Punjab State (including Chandigrah). A well structured questionnaire was distributed among the Internet authorities, i.e., system administrators, system managers and the Internet section in charges of the 32 engineering colleges to find out the state of the Internet connectivity available in the colleges, the Internet Service Providers (ISP) chosen and types of the Internet browsers used. The study demonstrates and elaborates the status of the services used. The study demonstrates and elaborates the status of the services provided to the Internet users in the engineering colleges of Punjab. The study also analyses the system details, purposes of Internet use and users’ satisfaction with the
facilities provided in colleges. Suggestions have been given for the improvement of Internet services in the engineering colleges under study (58).

Mudawi (2005) did a research on “The Use of the Internet and E-mail among Sudanese Librarians: A Survey Report.” The objective of this research paper is to assess how the internet is used, in particular for e-mail-based library services in Sudan. Design/methodology/approach: This research is based on primary data: a structured field survey was conducted among six information institutions in Sudan. Because the number of librarians in these institutions was thought manageable, all librarians in the selected institutions were surveyed. The response rate reached 88.1%. The SPSS package was used for data analysis, and the alpha value found to be 79 per cent. Findings: The major patterns of the Internet use were: Chat sessions; checking e-mails; and surfing professional sites. Majority of the samples did not utilize e-mail for library services as such. The low use of the Internet resources for library services was due to inadequate access and inadequate time that can be devoted to the Internet activity, rather than a matter of lacking skills per se. But it was also found that there was a real need for training on using the Internet for library services. Moreover, lack of English language skills were a factor: findings indicated that there is a positive correlation between the level of English language proficiency and the level of using the internet. Research limitations/implications: for practical reasons the fieldwork data was collected only from Khartoum state. More research work could be done in the other major cities to complete the view. More studies are needed to highlight the nature of the Internet training needs, and user attitudes that influence the current patterns of the Internet use. Originality/value: This paper is an original work that fills a gap in the literature about the use of the Internet among the Sudanese librarians. This paper is of value to practitioner librarians and researchers, while LIS instructors may use the research results to develop the LIS syllabus and curriculum (59).

Badu and Markwei (2005) surveyed “Awareness and Use of the Internet and Its Resources by Academic Staff and Postgraduate Students of the University of Ghana.” The purposes for which Internet resources were used and respondents' perceptions of the usefulness of the Internet were also explored. The main findings
indicate that both staff and students are fully aware of the Internet and most of its services. Academic staffs in general use the Internet resources more than students. However apart from e-mail, frequencies of use of Internet resources are very low. The study established that e-mail is highly used by both staff and students. Both staff and students found the Internet a very useful resource. The main reason for non-use of the Internet is inadequate training. Both staff and students need appropriate education and training to ensure effective use of the Internet in all their academic pursuits (60).

Srechaiwong (2005) assessed “The Usage of the Internet among State University Students in the North of Thiland.” She distributed 800 questionnaires among undergraduate and graduate students in six state universities in the North of Thiland. 625 (81.5%) responded. Out of 625 students, 363 (55.7%) were females and 289 (44.3%) were males. Majority (82.7%) of students were undergraduates. Study showed that the top three familiarities about computer and use of the Internet among students were e-mail, WWW and chat. Majority of respondents used the Internet more than 7 hours per week. They used the Internet for entertainment, reading news/enhancing knowledge and searching information for research. 68.6% of them used the Internet at university. Out of which, 24.3% used at centereal library. The major reasons for opening an Internet account was to search information (23.7%). The percentage of the students using the chat was 81%. Majority of students seldom retrieve, read or download full-text articles and peer-reviews journal online. The problem faced by students in using Internet were: low speed of the Internet connectivity, limited number of computers and limited time period allocated to students to use the Internet at university (61).

Scoffery and others (2005) examined “Internet Use for Health Information Among College Student.” Use of Internet to retrieve health information is increasingly common. The authors surveyed 743 undergraduate students at 2 academic institutions to examine their Internet use, health-seeking behaviors, and attitudes related to the use of the Internet to obtain health information. Fifty-three percent of the respondents indicated that they would like to get health information online, and 28% reported that they would like to attend a health program online. Overall, 74% of the students reported having ever received health information
online, and more than 40% reported that they frequently searched the Internet for information. They used various search engines and multiple websites to find health information. Issues related to the credibility of the information on health websites were crucial considerations for students. The study found differences in the Internet use for health information by gender and by level of the Internet experience (62).

Jones and Yale (2005) in their papers entitled “Professors Online: The Internet’s Impact on College Faculty Members” identified the Internet use. This paper reports on findings from a nationwide survey of the Internet use by US College faculty members. The survey asked about general Internet use, use of specific Internet technologies (e-mail, IM, Web, etc), the Internet’s impact on teaching and research, its impact on faculty–student interactions, and about faculty perceptions of students’ Internet use. There is general optimism, though little evidence, about the Internet’s impacts on their professional lives. The findings show that institutions of higher education still need to address three broad areas (infrastructure, professional development, and teaching and research) to assist faculty to continue to make good use of the Internet in their professional work (63).

Mathew and Sheeja (2005) conducted a survey entitled “Use of E-resources in a Networked Environment: A Case Study of CUSAT.” This paper studies the use of E-resources by the faculty and research scholars of Cochin University of Science and Technology. The use of e-resources under INDEST consortium, UGC Infonet project, and the database subscribed to in the CUSAT Library are studied in the survey. The survey covers various aspects like awareness of the users, user satisfaction, use pattern of e-resources, preference for print or electronic version, etc. The problems faced are stressed and possible solutions are suggested (64).

Agbonlahor (2006) in her study “Motivation for Use of Information Technology by University Faculty: A Developing Country Perspective” examined factors which motivate lecturers in Nigerian universities to use information technology (IT). A diffusion of innovations perspective was adopted for the study. The study employed a questionnaire for data collection. One thousand lecturers from ten universities in Nigeria were sampled. Seven hundred and eighteen completed questionnaires were found usable. The results found that perceived
usefulness (relative advantage) and perceived ease of use (complexity) significantly influence the use of IT by lecturers in Nigerian universities. In addition, ease of use was found to be a stronger motivator for IT use than perceived usefulness. Furthermore, both training and level of access to IT significantly influenced the number of computer applications used by lecturers. In addition, level of access to IT was a significant predictor of both the number of computer applications used by lecturers and the frequency with which they used computers. The study concludes that even though innovation characteristics are important predictors of the adoption of IT by Nigerian university lecturers, organizational factors such as providing training and easy access to IT are even more important. Thus, programs aimed at integrating IT into developing country universities should provide effective and well-targeted training programs as well as easy access to IT for lecturers (65).

Turriff (2006) in a survey on “Use of IT in US Schools; Through A Daily Routine, Students Are Equipped with Life-long Skills.” describes a study visit to US middle and high school libraries, part of a study to investigate how secondary school librarians in USA and Scotland use evidence to help them make decisions. The libraries visited were very large and included auxiliary areas such as computer rooms, AV preparation suites, recording suites and teacher support rooms. Covers daily inhouse radio or TV broadcasts organized and delivered by students in some of the schools. The most impressive area of work was in information literacy. These programmes were started early, reinforced and developed constantly throughout all levels of school. Information literacy study is aimed at preparing students for university work (66).

Emojorho and Adomi (2006) contributed a survey on “An Assessment of the Use of Information Technology Facilities for Academic Pursuit.” This study is aimed at looking at the extent to which staff of Delta State University, Abraka, Nigeria, are acquainted with Information Technology and use IT facilities for academic pursuit. Design/methodology/approach: The main instruments used for collecting data were questionnaires and interviews. Simple percentage was the statistical method employed. Findings: data gathered through the use of the questionnaire and interviews reveal that most of the staff are not only aware of the
existence of IT facilities, but also employ them to satisfy their academic desires. From the study, epileptic power supply was adjudged the worst problem encountered in the use of IT facilities, while other problems include high internet service charges, unreliable telecommunication infrastructure, Internet traffic congestion due to limited bandwidth and unsatisfactory performance of the Internet service provider. Originality/value: The study acts as an eye-opener to the staff and management of Delta State University, those of institutions of higher learning in Nigeria as a whole, as well as the government of the day, as to the true state of affairs relative to how far and well we have advanced in the application of IT for developmental purposes in a world that has gone so far in it, and try as much as possible to bridge the gap (67).

Natarajan (2006) described “Use of Online Technology for Multimedia Education.” The author focused that the content, media and administration are the main areas for better multimedia education using online technology. With the advent of Information Communication Technology (ICT) and the growth of the Internet, particularly the Web has changed the way of giving the curriculum materials to the students in online environment. Along with the print material, the materials are given in e-formats also. The online teaching tools like e-mail, discussion list, chat mode, lecture notes via web, use of computer mediated communication, interactive web tutorials, CD-ROM materials and virtual environments helps now-a-days for better understanding by the student community. The successful use of online technology depends on well designed and planned courses, infrastructure and price considerations, capacity and training in the chosen technology, local design and proper pre-testing and relative ease of access for the students. Technology such as video and the Internet can be combined with hands on activities to enhance critical thinking and support learning skills. In India, distance education is provided through Radio, TV, CD-ROM and contact classes on weekly holidays. Some private institutions have started using the online technology for educating the students. The author concluded that Indian Universities and Higher Educational Institutions should adopt this technology for easy understanding of education programmes (68).
Olufemi Omotayo (2006) undertook a study “A Survey of the Internet Access and Usage Among Undergraduates in An African University.” The study surveyed the use of the Internet among undergraduate students at the Obafemi Awolowo University, Ile-Ile, Nigeria. A total of 1000 questionnaires were distributed using a stratified sampling method to select the respondents. Ten faculties were covered. A total of 664 questionnaires were returned and all were usable. The findings revealed a high percentage use of the Internet. The access point for them is cyber cafes. The university library though linked to the Internet is yet to provide access to students. Respondents pay for the access time through their pocket money for food, books and assistance from friends. Their use of the Internet has not affected their use of the library. Some problems they face in their use of the Internet include slowness of the server and payment for the access time. The study recommends that the university should provide access points for students. The university library also should continue to aim at ensuring that it gets enough funds from the government and sponsors to be able to provide access points in the library for use by students and include the use of the Internet in its library instruction course (69).

Mula and Chandrashekara (2006) in their study they have made an attempt to explain the important aspects of the Internet, the Internet being a computer network made up of thousands of networks worldwide. No one knows exactly how many computers are connected to the Internet. Internet and Internet based information resources are essential to overcome the distance barrier in information explosion, and it also saves the time, when searching the literature in electronic form and allows to identify the resources. Presently, the Internet based information resources are increasingly used for various purposes. The teachers, research scholars and students of higher education use the Internet to keep themselves up to date. The present study explains/gives an insight into why people are interested and what is their attitude towards the use of Internet based information resources and the Internet use (70).

Kumar and Kaur (2006) examined a survey on “Internet Use by Teachers and Students in Engineering Colleges of Punjab, Haryana, and Himachal Pradesh States of India: An Analysis.” The aim of this study was to analyze the use of the Internet and related issues among the teachers and the students of engineering
colleges in India's three States of Punjab, Haryana and Himachal Pradesh. A well structured questionnaire was distributed among the 1980 teachers and students of all the engineering colleges of the three states of India under study. The response rate was 80.9%. The present study demonstrates and elaborates the various aspects of Internet use, such as frequency of Internet use, methods used for learning of Internet skill, most frequently used place for Internet use, purposes for which the Internet is used, use of Internet services, ways to browse the information from the Internet, problems faced by the users and satisfaction level of users with the Internet facilities provided in the college. The result of the survey also provides information about the benefits of the Internet over conventional documents. The study was conducted particularly to find an answer to the question as to whether the Internet can replace library services. It was found that the Internet has become a vital instrument for teaching, research and learning process of these respondents. Some suggestions are set forth to make the service more beneficial for the academic community of the engineering colleges under study (71).

Maharana, Nayak and Sahu (2006) studied about “Scholarly Use of Web Resources in LIS Research: A Citation Analysis.” The essential purpose of this paper is to measure the amount of web resources used for scholarly contributions in the area of library and information science (LIS) in India. It further aims to make an analysis of the nature and type of web resources and studies the various standards for web citations. In this study, the result of analysis of 292 web citations spread over 95 scholarly papers published in the proceedings of the National Conference of the Society for Information Science, India (SIS-2005) has been reported. All the 292 web citations were scanned and data relating to types of web domains, file formats, styles of citations, etc., were collected through a structured check list. The data thus obtained were systematically analyzed, figurative representations were made and appropriate interpretations were drawn. Findings: The study revealed that 292 (34.88 percent) out of 837 were web citations, proving a significant correlation between the use of Internet resources and research productivity of LIS professionals in India. The highest number of web citations (35.6 percent) was from .edu/.ac type domains. Most of the web resources (46.9 percent) cited in the study were hypertext markup language (HTML) files.
Originality/value: The paper is the result of an original analysis of web citations undertaken in order to study the dependence of LIS professionals in India on web sources for their scholarly contributions. This carries research value for web content providers, authors and researchers in LIS (72).

Al-Ansari (2006) worked on “Internet Use by the Faculty Members of Kuwait University.” This study is designed to investigate the patterns of the Internet use by the faculty including purposes for use, its impact on teaching and research, the Internet resources that they use, and the problems faced while using the Internet. Design/methodology/approach: A questionnaire, expert-reviewed and pilot-tested, was used to collect data from the faculty coming from four colleges of Kuwait University, i.e. Arts, Social Sciences, Sciences, and Engineering. Half of the 491 potential participants were selected as the sample, with a response rate of 62.6 percent. Findings: A large majority have been using the computer and the Internet for more than five years. They use the Internet mostly for, and give importance to, e-mail, search engines, and WWW resources mainly for communication, research, and publication. It has helped them to save time, find up to date information, and cooperate with their colleagues. Slow speed, lack of time, and lack of access from home are the major problems. Most of them are interested in improving the internet use skills through formal training. Practical implications: Kuwait University needs to improve its IT infrastructure, including providing distance access, and to provide formal training in the use of the Internet resources. Originality/value: This is the first comprehensive study of the use of the Internet by the Kuwait University faculty. Its findings should help Kuwait University in its plans and programmes related to e-learning and strengthen pertinent resources and services of its libraries (73).

Lee (2007) attempted a study on “The Use of Information Technology to Enhance the Quality of Teaching and Learning in Social Work Practicum An Example from the City University of Hong Kong.” One of the thorny issues in social work practicum training is how to maintain fairness in assessment. To address this issue, a grade moderation system was set up. Digital practicum portfolios and on-line assessment were used through the Web CT platform. Two amendments were made: (1) password control to protect access rights and privacy;
assessment data transfer through Common Gateway Interface (CGI) to conduct automatic descriptive statistical analysis for monitoring possible deviations from the grading standard. A feedback system was built to enhance the quality of teaching using students' survey data. To promote the quality of learning in this individualized teaching mode, the Social Work Practice Teaching, Learning, and Research site was constructed (74).

Gomez and others (2007) made a survey entitled “Utilizing Web Tools for Computer-Mediated Communication to Enhance Team-Based Learning.” This article presents the results from pilot assessments of computer-supported team-based learning. Team-based learning is an active learning instructional strategy used in the traditional face-to-face classroom. Web-based Computer-Mediated Communication (CMC) tools complement the face-to-face classroom and enable active learning between face-to-face class times. The authors utilized pedagogical approaches grounded in collaborative learning techniques, such as team-based learning, and extended these techniques to a Web-based environment through the use of computer-mediated communications tools (discussion web-boards). This approach was examined through field studies in the course of two semesters at a US public technological university. The findings indicate that the perceptions of team learning experience such as perceived motivation, enjoyment, and learning in such a Web-based CMC environment are higher than in traditional face-to-face courses. In addition, our results show that perceived team members' contributions impact individual learning experiences. Overall, Web-based CMC tools are found to effectively facilitate team interactions and achieve higher-level learning (75).

2.2 LITERATURE REVIEW IN IRAN (NATIONAL SCENARIO)

Hajebi (1992) in her study entitled “Medical Science Researchers’ Awareness with Information Resources in Iran.” she measured medical science researchers’ awareness of the information resources. Findings showed that 39% of respondents used Medline database and 2% used EM Base. Inaccessibility to Medline (48%) and unfamiliarity (33%) were reasons reported by respondents for not using Medline. Only 6% of respondents used online systems for retrieving (76).
Hakimi (1996) did a research on “Use of Information Technology by Faculty Members and Students in Central Libraries of Zahedan University.” Results showed that 15% of faculty members in Sistan-o-baluchestan University and 52% in Zahedan Medical University used IT. It also showed that 29% of students in Zahedan Medical University and 23% in Sistan-va-Baluchestan University used IT. Faculty members (80%) reported that IT facilities in central libraries were not sufficient for their teaching and research activities. It was observed that there was negative correlation between IT used variable and the academic ranks and age groups variables (77).

Setoode (1998) carried out a study “Evaluation the Use of Electronic Information Among Shiraz University and Shiraz Medical University with Special Reference to the Internet and Optical Discs.” The results showed that e-mail and web were the most used services. According to findings, the main factors which had impact on the use of these services were the variables such as: sex, degree, academic rank, computer knowledge and training. She observed that those respondents who were active in research activities, were also active in Information seeking (78).

Okhovati (1998) did a research entitled “Use of the Internet by Faculty Members in Medical Universities of Iran, Tehran and Shahid Beheshti.” Result showed that the respondents used the Internet mostly for research works (88.2%) and also 66.7% of faculty members used the Internet in order to communicate with their co-workers (79).

Vakilimofrad (1999) contributed a research on “Use of Information Technology by Heart Specialists in Medical Universities of Iran, Tehran and Shahid Beheshti.” He used descriptive–analytical research method and distributed 90 questionnaires among the respondents and collected 68 (75.5%) questionnaires. His research started with two hypothesis: 1. There is a significant relationship between the heart specialists’ degree levels and the use of IT. 2. There is a significant relationship between the heart specialists activities and use of IT. The result of the study confirmed the first hypothesis and the second one was not confirmed. The results showed that 68% of the under study heart specialists used IT. The most used technologies among the respondents were: Video-films (78%),
educational discs (65%) Internet (61%) and ondisc databanks (48%). They used IT in hospital libraries, hospitals and homes. The main purpose of using IT were: Teaching, treatment and obtaining update information (80).

**Golabiyan (2000)** examined a survey on “Impact of E-mail on Faculty Members Activities in the Universities of Iran.” Findings indicated that nearly half of the faculty members used e-mail. It also showed that those respondents who used e-mail, they published more papers than the nonusers. Statistical Test revealed that there was a significant relationship between the users and nonusers in publication productivity (81).

**Dehqan (2001)** undertook a study entitled “Use and awareness of Information Technology by Babol Medical Science University Faculty Members.” The research purpose was to study Babol Medical University faculty members use of IT. Descriptive analysis method was used as the research method. Questionnaires were used as the tools for data collection. Collected data was analyzed by SPSS. Findings showed that 81.8% of the under study faculty members used IT (82).

**Tavassoli, Lakhbala and Zare (2002)** conducted a descriptive investigation entitled “The Use of Internet Among Physicians in Hormozgan University of Medical Science.” Their porpuse was to assess the extent to which the Internet is used among physicians in Hormozgan Medical Science university. Queatinnaire was used for data collection. 65 questionnaires were distributed among physicians. Results showed that 43.3% of physicians had Internet access at home and 21.8% had access both at home and at work. half of the respondents (53.3%) used Internet three times or more per week. Web-based search and e-mail were the dominant activities among physicians (48.3%). 45.3% of respondents did not use Internet due to time limitation and lack of training (83).

**Bahadorani and Yamani (2002)** made a survey on “Assessment of Knowledge, Attitude and Computer Skills of Esfehan Medical Science University Faculty Members Regarding to the Application of Computer and Information Technology.” In their paper they identified: Today, computer and Information Technology serve an increasingly important role in medical education. Since faculty members plays an essential role in medical education, this study was designed to assess their knowledge, attitude and computer skills regarding the
application of computer and Information Technology in medical education. A cross-sectional survey with stratified sampling method was carried out as the research method. 210 faculty members in Esfahan University of Medical Science completed 60 questionnaires. Questionnaires had three parts, each part including questions regarding attitude, knowledge and computer skills, respectively. Data was analyzed by SPSS. Frequency Distribution, T-Test, one way ANOVA and Kruskal-Wallis Test were used in data analysis. Results showed that 97.3% of faculty members believed that computer had an important role in promoting their scientific activities. The calculated Mean for faculty member's knowledge and their skills in using computers' routine softwares, e-mail online searching and databases was 10.84 based on 20 and with the standard deviation of 5.5. Faculty members used computer and internet about 7.8±7.2 and 6.4±5.9 hours per week, respectively. A significant difference between faculty members' knowledge in different faculties was observed but in comparing their knowledge based on their ranks and degree, no significant difference observed. The comparison of hours of using computer in different faculties showed a significant difference between them. In conclusion they wrote: most of the faculty members had a positive attitude towards the role of computer and internet in medical education but many of them did not have enough knowledge and skills in order to work with computer and internet. Therefore, it is necessary to take some measures in order to promote faculty members' knowledge and computer skills (84).

Taqipur (2002) in his research “Use of Information Technology by Handicapped Students in Medical Universities of Iran, Tehran and Shahid Beheshti” investigated the use of IT by handicapped students in the medical science universities of Iran, Tehran and Beheshti. Questionnaires were distributed among 60 handicapped and disabled students in the three mentioned universities and research data was collected. The War (Iran and Iraq) has been the main and important reason of being handicapped. Findings showed that all handicapped students in medical science university of Iran used IT. 63.6% of the under study students used IT in medical science university of Shahid Beheshti and 61.9% in Tehran medical science university (85).
Bagherian (2002) evaluated “Use of Computer Communication Technologies in Promoting University Education from Social Psychological Point of View.” The article was based on three series of studies: observation of class discussions via the Internet (discussion groups), a comparison between the most active and the active discussion groups using computer communications, and a survey asking students motivations and attitudes about use of the Internet. Results showed that there were complicated social-psychological-organizational interaction processes when computer technologies were used for education. Findings showed that among 2512 courses offered at Carleton University, only 574 courses (22%) were using the Internet system to participate in discussion groups and to exchange information about the material taught in the class. From these 574 classes, only 164 classes - (6.5%) had used discussion groups at least 10 times during a term. The results of survey also indicated that lack of interest in using computer communication technologies was due to social psychological reason. The most important reasons were lack of enough time and then lack of motivation and interest. The results indicated that effective use of computer communication for education needs more social-psychological-organizational preparation than the availability of computer technologies (86).

Montazer (2002) in his study “Information Technology Skills Training and Its Influences on Effective Learning” defines: Information Technology (IT) has dramatically influenced human societies and their relations, and therefore the new century has been called Information Age. Due to the rapid development of information technology devices and their effects on various aspects of life, it is important to design a new educational program for students in schools and universities to familiarize them with IT fundamentals and applications. In this paper productive technology and informative technology concepts were compared and characteristics of new information society has been discussed and a new approach for effective learning using Information Thechnology has been proposed (87).

Saberian and others (2003) conducted a study entitled “The Internet Use by Faculty Members in Semnan University of Medical Science.” This study was performed to investigate the use of the Internet among faculty members of Semnan
University of Medical Sciences. Descriptive method was used as the research method. Data was collected through questionnaire. 100 questionnaires were distributed among faculty members in Semnan University of Medical Science. 62 questionnaires were returned back to the researcher. Collected data was analyzed by SPSS. Results showed that 91.9% of the respondents used the Internet. 68.3% of the respondent used the Internet at home and 30% at university. 50.8% of the faculty members used the Internet less than one hour daily. 66.7% of the faculty members reported that the Internet speed was undesirable. 74.2% of respondents used the Internet for research activities. 50% of faculty members believed that the Internet training workshop courses are necessary (88).

Jowkar and Efatnejad (2004) carried out a research entitled “A Survey on the Use of Information Technology (IT) by Graduate Students in Shiraz University Libraries and Computer Centres.” This study was conducted to investigate graduate students use of IT in libraries and computer centres of Shiraz University. The research method was applied to this study was a survey method. Findings of this study indicated the frequently use of computer and Internet by the respondents. Use of library softwares and CD-ROM were rarely among respondents. Respondents used IT for educational purposes, thesis writing, writing and translating articles. The use of IT for attending national and international seminars, writing book and translating activities was low. The major problems faced by respondents while using IT were lack of facilities, low speed of retrieval, disconnection of the network, need to learn how to use IT and time limitness to access IT. Findings showed that 5.4% of the respondents did not use IT (89).

Safdari and others (2004) examined a survey on “Assessing the Impact of Information Technology on Health System in Viewpoints of faculty Members of Medical Record Departments in Iran.” To assess the impact of IT on health system based on the viewpoint of faculty members in medical record departments in Iranian medical science universities, a cross sectional survey was used and questionnaires were sent to 17 medical records departments. To investigate the correlations between variables of the study, Chi-Square Test (X²) and Fisher Tests were used. 64 questionnaires were distributed among respondents. 49 questionnaires were completed and returned back by the respondents. Findings
showed that majority of faculty members (40.81%) believed that use of IT enhances the utilization of paper documents. 26.5% believed that use of IT has high impact on medical errors. Majority of faculty members (36.7%) considered that IT has a medium impact on self-therapy. The impact of IT on medical research and medical education was believed to be very high by 83.6% and 79.5% of respondents respectively. It was not find any correlation between the impact of IT on the studied variables and demographic data of participants such as age, gender and the years of teaching. Results showed that most of faculty members of medical record departments have a high knowledge about the impact of IT on promotion of health management, research and education in medical sciences, but their knowledge about effectiveness of IT on health quality services and its adverse effect was not proper. Reseurchers suggested that medical record faculty members knowledge related to IT shoud be increased by educational courses and training (90).

Feizi and Rahmani (2004) in their study entitled “E-learning in Iran; Problems and Solutions with Emphasis on Higher Education” identified that primitive methods of producing and distributing knowledge–designed based on face-to-face communications of the past times, now lost their efficiency. They summarized: E-learning which was based on IT and developed on the web by early 1990s, is known as a successful method of e-learning at present. In their papers they presented a discussion about e-learning historical backgrounds and explored the notion of electronic learning and its alternatives; computer based and web based learning, problems and obstacles confronting e-learning have been identified. Finally, through content analysis of information obtained through interviews, appropriate solutions have been recommended (91).

Siamian (2005) carried out a research entitled “Attitudes, Skills and Performances of Mazandaran Medical Science University Faculty Members in Using Computer and the Internet in teaching and research activities.” This study was carried out to assess faculty members’attitudes, skills and performances in using computer and the Internet in their teaching and research activities. The survey was done based on cross sectional study. A questionnaire, in 3 dimensions of attitude, skill, and usage, expert-reviewed and pilot-tested, was used to collect
data from 124 faculty members in five faculties of Medicine, Health, Pharmacy, Nursing and Midwifery and Paramedical Science. Collected data was analyzed by SPSS and descriptive, Spearman Correlation, central and Scattered Indices were applied. Results showed that 124 (58.2%) of faculty members of all the five under study faculties participated in study. Findings showed that 38.7% of respondents were in good skill level followed by 15.3 % average, 11.3% poor and 29 % excellent. Regarding to attitudes 58.9% of respondents were in excellent level and 26.6% good. 49.9% of respondents used computer 10 to 15 hours weekly and 33.9% used the Internet 60 hours monthly. Most of faculty members had positive attitude to computer and the Internet in medical education, but few of them had not enough knowledge and skill. Researcher suggested that faculty members skills and performances for use of computer and Internet in research and teaching activities should be increased and It has been recommended to provide workshops based on the needs of faculty members (92).

Khoda-joo (2005) conducted a descriptive study entitled “Use of the Internet by Faculty members of Tehran Jehad Keshavarzi Higher Education Institutes.” Questionnaire was used to collect data. He distributed a questionnaire with 20 questions among the under study respondents. The collected data was analysed by SPSS programme. The result was shown by Tables and Excel diagrams (93).

Shabani and Mahdieh Najafabadi (2006) did a research on “The Role of the Internet in Locating Information by Academic Members in Najafabad Islamic Azad University.” Survey method was used as the research method and data was collected through questionnaire. Collected data was analyzed by SPSS using descriptive statistics. Findings revealed that respondents used the Internet at an optimum level to update their knowledge and their research interests. In this regard, they used databanks frequently. It was found that the Internet plays a significant role for academic members to locate information so that they use it for compiling and translating books and doing research works (94).

Asefzadeh and Rafati (2006) conducted a survey on “How to Update Physicians and Dentists’ Education after Graduation.” This investigation was undertaken to assess the extent of using the Internet among physicians and dentists
in Qazvin Medical Science University. Use of the Internet and other sources for professional updating among physicians and dentists and for improving Continuing Medical Education (CME) are very essential. Descriptive study was used for research method and questionnaires were sent randomly to physicians and dentists in Qazvin Medical Science University. Results indicated that all 339 of the samples answered the questionnaire, which included 52.8% general physician, 2.1% residents, 8.26% specialist, 2.8% fellows, 11.9% general dentists, and 3.6% dental specialist. 69.7% of respondents stated reading books as the best source of CME, 24.6% use of Internet and e-mail, 28.1% reading foreign journals and 26.8% participating in seminars and workshops as the best sources of CME. Comparing the two groups, physicians and dentists on average spend 14 hours and 19 hours of studying per month. 45.8% of those who didn’t use the Internet, stated that they had not access to the Internet followed by 40% did not know how to use the Internet.” Respondents stated that they allocated 5 hours for study weekly followed by 9 hours for education, 2.5 for doing research works, 4 hours for meetings and participations and 35 hours for medical visits. Since the Internet plays an increasingly important role in physicians professional updating, it is suggested the Internet training courses should be offered to physicians. It is suggested to provide more hardware and software facilities at hospitals and libraries. Continuing Medical Education should be provided at universities. Electronic libraries with the latest medical information is a need for physicians (95).

Rasool-abadi (2007) in his study “Kordesstan Medical Science Faculty Members’ Awareness with search skills and strategies in Internet” assessed faculty members’ awarenesses with search skills in the Internet. Descriptive–analytical method was used for research method. Two sets of questionnaires were used for data collection (one for collecting search skills data and another for gathering computer skills data). 140 questionnaires were distributed among 140 faculty members. 100 questionnaires were completed and returned back to researcher. Collected data was analyzed by SPSS. Result showed that 58.7% of respondents were not familiar with search skills in the Internet and 42.2% did not use search techniques. 49% of respondents used google search engines in their search. 50%
were not aware of information coverage of Ovid, Black Well and Elsevier databanks. 58% of respondents used computer and 54% Internet frequently (96).

2.3 CONCLUSION

Information is an essential component of scientific progress. The use of Information Technology (IT) has had continuous growth in all spheres, not just in higher education. LISc departments are no exception to the quandary of continually rising of IT costs, since the benefits of IT contribute to the expanding demand for it. IT has revolutionized information-related activities globally. The creation, processing, storage, retrieval and dissemination of information have been tremendously enhanced because of recent developments in IT. For a long time, there have been constant effort to study the role of IT required by users particularly faculty members, teachers and students to meet their information needs, without wasting time and research potential. The problem of getting proper information in desirable form, particularly in S & T has thus remained a topic of great concern among the researchers, scientists, professors, planners, etc., from early period till today. An indepth analysis of IT development and its use and impact on academic departments can be carried out with correct and elaborate database which is lacking in most developing countries like Iran. It needs hard negotiation and strong assurances and anonymity. Not all academic LISc departments are willing to open their files to researchers due to various reasons. This is the first time such a survey has been undertaken covering most of the constituents of IT use in LISc academic departments in Iran. The findings reported in this survey provide some useful hints for planners and policy makers in Iran.
2.4 REFERENCES


2. Graham and Weils. (of cited in Ref. 1).


13. Library Association Record. “Information Technology in the College Library. Teaching Aid and Housekeeping Tool.” *Library-Association-Record (GB)*,


49. Zare-ee Zavaraki, Esma-il. “The Impact of Network Communications Usage by


70. Mula, K. R. and Chandrashekara, M. “Internet Users: Mysore University


78. Setoode, Hajar. “Evaluation the Use of Electronic Information among Shiraz University and Shiraz Medical science University Faculty Members with Special Reference to Internet and Optical Discs.” Master diss., University of Shiraz, Shiraz, 1998.


82. Deqan, Zahra. Use and Awareness of Information Technology by Babol
Medical Science University Faculty Members. Babol Medical Science University, Iran. 2001.


85. Taqipur, Taqi. “Use of Information Technology by Handicapped Students in Medical Universities of Iran, Tehran and Shahid Beheshti.“ Master diss., Iran University of Medical Science, Tehran. 2002.


