Use of Electronic Journals by Library and Information Science faculty members in performing various academic tasks: A field Study performed at the School of Information Sciences at the University of Pittsburgh / By Dr. Hossam Eldin Mohamed Refaat Abouserie. 2006.

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Summary

The purpose of this study was to explore and investigate the ways faculty at The School of Information Science at the University of Pittsburgh, obtain information to support their academic tasks. Library and Information Sciences faculty at the University of Pittsburgh were chosen as the population for this study. The study matched e-journals, faculty use, for different academic activities or tasks they perform, in order to answer the following questions: 1-What are the main academic activities that highly depend on e-journals? 2- To what degree does each faculty member depend on e-journals? 3- What are the main reasons for using E-Journals? 4-What characteristics of electronic sources limit using of E-Journals?

The study matched the basic academic tasks of Information Science faculty with electronic journals to determine to what degree they depend on this source. Two hypothesis were addressed:

1-There will be a difference in the using electronic journals used to perform the basic tasks or activities according to faculty rank, and gender.

2-The degree to which faculty depend on electronic journals will differ across the academic tasks/activities, as follows: A) They will depend most on electronic journals for research tasks. B) They will depend least on electronic journals for service tasks.

Introduction

Nowadays, using Information Technologies of all types and kinds are very common in all organizations and associations. All types of Information Technologies have been applied to all areas of the library and information science field. They are used in a great extent in collecting, organizing, and providing services (Lancaster, 1986). With the advent of these technologies, the faculty becomes able to search for library materials via computer workstations without the need to go to the library building. Faculty are able

to find what they are looking for, not only in their local library but also in other libraries around the world, because online catalogues are available now in many libraries and information centers of all types and kinds. They allow users at different locations to have the same access to information and retrieve whatever they need without the need to be at the same place where the information exists. Therefore, users no longer need to care about the location of the information or where it exists (Crawford, 1996). Using computers in searching and retrieving information started in the 1960's in a few locations; however, since the 1970's the process has become very popular as the real democratization has occurred. At the same time the cost of the process, searching and retrieving information, has become much less (Lancaster,1986).

Storing library catalogues in electronic format assists in creating advanced search strategies. It becomes easy to search for materials that are published within a specific time, at a specific location and in a certain language. Moreover, the speed of retrieving and obtaining all types of information in all formats from all over the world is an advantage that the new information technologies provide (Marchionini,1995). The faculty is able to retrieve information in different formats through searching the Web. It is no longer only text that can be retrieved, but also audio and video information as well (Marchionini, 1995). As text, visual and audio-visual formats of information become available, the faculty is able to save time, money and effort in getting information and doing their main tasks of teaching, research and publishing.

Influence of electronic technology on personal information infrastructures

Based on the advantages that the new electronic information technologies offered, personal information infrastructures were positively affected from all angles and at all dimensions (Marchionini, 1995). For example, new technology affects the material used to store information. Today, to acquire new information, we use online databases, electronic bulletin boards, and local magnetic or optical databases, as well as the World Wide Web.

New information technologies have positively affected the way we store and retrieve information. It is no longer necessary for users to rely on their own memory to pass and transfer the information from one location to another or from one generation to another. Optical and magnetic media help in storing, preserving, and transferring information in databases, and information banks for a long time. Moreover, these tools

assist and facilitate the use and scope of information as well, in that various users at different locations at the same time can use these tools (Marchionini, 1995).

The following section focuses on one type of electronic source, electronic journals, which are becoming widely popular among scholars and scientists.

Electronic journals

E-journals are characterized as **"**any serial produced, published, and distributed nationally and internationally via electronic networks such as Bitnet, and the Internet" (Collins and Berge, 1994, P.772). Elsevier, the largest publisher of scholarly journals in the world, by 1999 had made 100 of its offerings [and currently more than 1500] available electronically, and MCB Press is moving forward in a similar fashion. Statistical estimates of e-journals suggested that the number of e-journals would exceed 3,200 by 1998/1999. In a more recent statistical estimate, Okerson (2002) counted the number of electronic journals listed in two directories from 1991 to 1999 and found that the number of titles grew up from 27 in 1991, to 3,634 in 1997, and to 8,000 in 1999. Although, she failed to distinguish the electronic journals that were published only in electronic editions from the majority that are published in parallel paper and electronic editions, this estimate still indicates that the number of electronic journals is increasing over time (Kling, 2003).

The University of Pittsburgh provides its faculty members with access to 4,500 electronic journals (Speier, Palmer, Wren and Hahn 1999). A significant study shows that scholars are now using e-journals more than before, with considerable variations among fields. The study also shows that scholars are positively affected by searching databases and information banks, and electronic publishing (Tenopir and King, n. d.). This indicates that e-journals will solve some of the problems traditionally faced, such as the limits of the research article, the length of time between submission and publication, and the scope / breadth of distribution.

Forms of E-Journals

Electronic journals can take various forms, such as "a manuscript that has been e-mailed to members of a listserv; attached to a personal or institutional homepage; stored in an electronic preprint collection; published in an electronic proceeding or electronic journal" (Harter, 2000). This means that it has become easy to establish some types of e-journals with minimal basic requirements.

Kinds of E-Journals

E-Journals can be characterized in four types, as suggested by Kling:

1-Pure e-journals are originally distributed only in digital form.

2-E-p-journals are primarily distributed electronically, but may have very limited distribution in paper form.

3-P-e-journals are primarily distributed in paper form, but are also distributed electronically.

4-P+e-journals are initiated with parallel paper and electronic editions that may be widely distributed (Kling, 2003).

Advantages of electronic journals

Electronic journals provide a variety of advantages, not only to libraries, but also to users, authors, publishers, and archivists. Peer review is one of the advantages that was positively affected, in that e-journals helped authors in two dimensions: first in speeding up the review process, and second in the distribution process, so the information published and distributed would avoid the delay that usually faces print journals (Weller, 2000). A study by Walsh and Bayma found that "the median publication lag for some of the top biology and physics journals was six months in 1990, eight months for a top chemistry journals and 19 months for a top mathematics journals. Some mathematics journals took as long as 42 months to publish some articles" (Walsh and Bayma cited in Kling, 2003, P.139-140).

The cost of producing e-journals is another issue that should be considered. According to Harnad electronic publishing may be 70 to 90 percent less costly than the costs of these associated with peer review and copy editing. (Harnad cited in Kling, 2003, P.141)

E-journals also provide easy access to articles around the globe, to reach a broader audience. Publishers also receive advantages from e-journals, in that they are able to save time and effort in performing their activities. Libraries are not exempt from the advantages that publishers and authors enjoyed, in that they no longer have to worry about the storage space, and the regular maintenance required. In some cases subscription costs of e-journals are much less than those associated with producing paper journals (Harter, 1998). And finally the archivists become able to maintain and protect original copies, by allowing users to use copies of original works, while the original works are maintained in safe locations.

The way bibliographic citations are implemented in e-journals can be another advantage to e-journals, in that active hyperlinks to bibliographic citations may facilitate the readers in accessing other sources and references (Kling, 2003). E-journals also allow

interactivity among readers and authors and editors, by incorporating mechanisms to send feedback via email. Therefore, enhancing communication could be another advantage of electronic journals over print journals (Kling, 2003).

Disadvantages of electronic journals

On the other hand, e-journals also have some disadvantages summarized as follows.

Cost: The high cost of establishing an electronic environment: (Hardware and software), and the need for frequent updates and upgrades means that even 'free' electronic journals have associated costs.

Rights issues: The new environment is not a safe or a secure place to publish (Gold, 1994), in that copyright laws and intellectual property are still being developed, and plagiarism is facilitated by the new medium.

Creditability: E-journals may not be as creditable as print journals, especially among scholars and authorities in the academic environment, because the peer review process may be absent and articles published in these type of journals may be considered unofficial efforts (Collins and Berge, 1994).

Accessibility: Lack of bibliographies and index tools that inform people about the existence of this type of journal makes it a challenge to access e-journals. (Collins and Berge, 1994). The need for training programs for librarians and researchers in using information technologies, which may be necessary on a frequent basis as systems change, adds an additional challenge.

Permanence: Saving, archiving and preserving the old issues of e-journals for future needs may not be considered the responsibility of the computer center that usually cares only about the recent issues (Collins and Berge, 1994).

Although new technologies have affected the ways faculty get information, the following points should be considered:

1-Using different information sources may differ from one faculty member to another, according to the skills or purposes he /she has. Some faculty may concentrate on traditional sources. Others may concentrate on nontraditional sources.

2-The sources used may differ from one discipline to another. Some disciplines may heavily depend on traditional sources; others may depend on nontraditional sources.

3-The sources the faculty depends on may differ from one task to another, in that the sources used for teaching may differ from the sources used for publishing.

4-The sources the faculty depends on may also differ within each task, in that the sources used for teaching may differ from one course to another. Some courses may require heavy dependence on traditional sources such as those related to history and humanities. Other courses may depend more on nontraditional sources, such as those courses related to computer sciences and telecommunication.

Finally, although new technologies and special digital sources have greatly helped information seekers in getting information and saving time, money and effort, the tasks of information seekers --in the present time and the future-- will not be easy. Every user in the electronic environment will be required to have additional skills to be successful. The tasks of the librarian may change from searching, selecting, organizing, and providing materials or service to teaching patrons where to search and how to find information. Users will need not only one-time training sessions, but frequent training that parallels the evolving and fast-moving information sources. Obviously, those who have the skills and high quality training would be capable of dealing with various information sources in an effective way (Crawford, 1996). Therefore, communication skills may be the most important criteria in this age and the following one.

The amount of published information is huge. “Explosion is the only word suitable to describe the emergence of information storage and delivery technology over the 1980’s” (Chen, 1982, P.111). Information can be obtained through a variety of sources: traditional sources and electronic ones. Information is published in different formats and in all languages, making the organizing process a major challenge in libraries and information centers of all types and kinds, and making the task of the faculty to find information at the right time a major challenge. It has become impossible for any one -- whatever skill he or she has-- to locate and obtain everything published and related to his or her area of interest. Thus, the information gap is expanding over time. Therefore, "to meet the information needs of the user communities, the information professional must first understand the nature of the user community and become familiar with the information-seeking habits and practices of the user" (Large, Tedd, and Hartley, 1999, P.5). “In addition to this, a primary goal of librarianship is to understand the users’ information needs and to assist them in seeking resolutions to those needs” (Avner, 1992, P.1). Therefore, in order to achieve this goal, this study will investigate the ways through which the faculty use electronic journals for various tasks.

The American university

The American university is considered to be **"**a national treasure, created and developed with ingenuity and devotion and vested with the capacity to serve society into the indefinite future, as it has done since its establishment" (Ehreberg, 1997, P.18). The American university, claimed to the best in the world, is a unique system because it provides high quality education, uses new methods in teaching, depends on advanced technologies for illustration, and finally provides freedom in performing the major tasks, teaching, research and service.

Although the university as a social institution carries out the main functions and the basic roles, teaching, research, and service, which can be achieved in other institutions, the way it performs its tasks --to reach its goals-- is unique and comprehensive. And although these responsibilities may be differently determined from one person to another, they are classified into three main tasks: teaching, research, and service. This section discusses the three basic responsibilities of the university showing the main characteristics of each function.

The University of Pittsburgh, U Pitt

The University of Pittsburgh was founded in 1787 as a small, private school.[1] It became a state-related university in 1966. At the present time, the University system consists of five campuses, main one and four regional campuses. The main campus, Pittsburgh campus, is the one located in the Oakland section of the city, and regional campuses in Bradford, Greensburg, Johnstown, and Titusville [2]

The School of Information Sciences, SIS

The School of Information Sciences, SIS, is one of the top ten schools in the nation in the education of information professionals, with a history that reaches back more than a hundred years. Throughout that history, SIS has built and sustained a tradition of innovation and excellence. The School of Information Sciences, SIS, has three programs in Information Science, Telecommunications, and Library and Information Science which are considered among the very best in the United States of America. SIS attracts students and visiting scholars from around the world. [3]

All programs at The School of Information Sciences are accredited by the American Library Association, ALA. The Department of Information Science and

[1] http://www.pitt.edu/about.html>.

[2] . http://www.pitt.edu/about.html

[3] http://www2.sis.pitt.edu/aboutSIS/welcome.html

Telecommunications offers an undergraduate program in Information Science, and graduate study leading to the Masters and PhD degrees in both Information Science and in Telecommunications. The Department of Library and Information Science doesn't offer undergraduate programs, however, it offers programs leading to a Masters degree, a PhD degree, and Certificates of Advanced Study. SIS offers FastTrack program for distance education students for earning a Masters degree various fields in Library and Information Science, such as Medical Librarianship and Informatics, Archives and Records Management, Preservation Management, Digital Libraries, Services to Children and Youth, and School Library Certification. The school has more than 700 students from over 25 countries.[4]

"Over the past century, the educational program has expanded to include study of many aspects of the information professions, incorporating the newest technologies with the traditional values of access, service, and protection of privacy.".[5]

Missions

"The SIS faculty, staff, students, and programs - uniquely interdisciplinary, multicultural, and international by design - are dedicated to the building of a global society and an informed citizenship based upon the foundation of knowledge made possible only through access to reliable and useful information. SIS will pursue excellence in teaching, research, and service to ensure that the information needs of society can be met because access to information enhances the quality of life for all people and organizations. SIS will educate high quality information professionals and build the knowledge of our discipline. SIS will also develop resources and tools to create, organize, find, transmit, preserve, integrate, and use information[6].

Mission of Library & Information Science

The faculty of the Department of Library and Information Science (DLIS) has the following missions:

1-To educate men and women at the master's, certificate, and doctoral levels to become leaders in libraries, archives, and information centers;

2- To conduct research to advance the information sciences;

[4] http://www2.sis.pitt.edu/aboutSIS/welcome.html
[5] http://www2.sis.pitt.edu/aboutSIS/history.html

[6] http://www2.sis.pitt.edu/aboutSIS/missions.html

3-To perform public service to support the information professions and the public good[7]

Mission of Information Science & Telecommunications

The Department of Information Science and Telecommunications has a faculty and student body from a wide variety of backgrounds.

1-To perform research on;

2-To educate students about and to serve society with regard to technologically-based systems;

3-To educate through traditional degree programs, certificate programs and occasional informal educational experiences[8]

The Academic World

The following model shows the academic world that includes the main tasks performed in the academic environment.

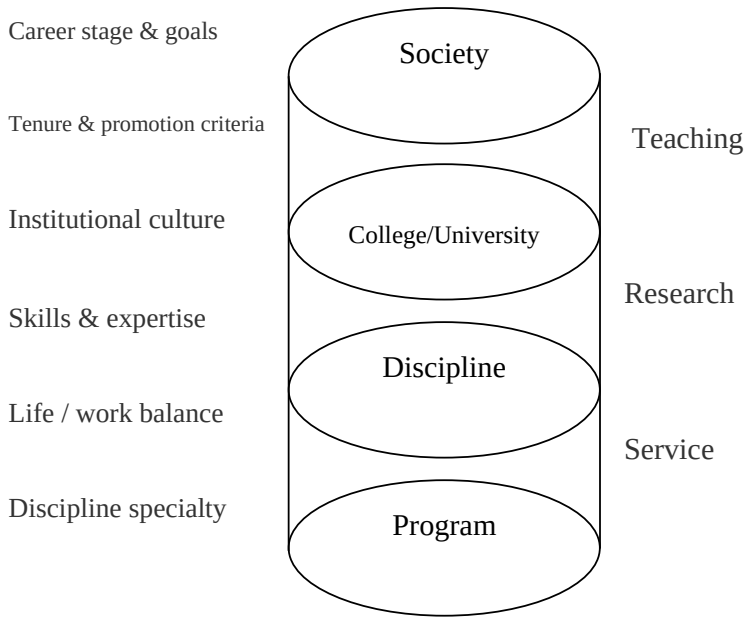


Figure 4. The academic world (Blackburn and Lawrence, 2001).

[7] http://www2.sis.pitt.edu/aboutSIS/missions.html

[8] http://www2.sis.pitt.edu/aboutSIS/missions.html

Teaching

Teaching is often the main and first task the academic faculty focus on, as was indicated by three surveys of the Carnegie Foundation in 1969, 1975, and 1996, which showed that seven faculty members out of 10 considered the teaching task to be their main responsibility (Graubard, 2001). The original study made in 1919 found similar results, in that faculty members spent 63 percent of their time on teaching, 8 percent on research, and 29 percent on other activities (Graubard, 2001). Cook, Wright and Hollenshead (1996) tried to understand how satisfied faculty members at the University of Michigan were with their roles as teachers, in order to determine the factors and conditions that lead to career satisfaction. They examined faculty experiences and how they differ by rank in performing the tasks: teaching and advising students, scholarship, professional growth and creative work, clinical responsibilities, and service. The survey by Sheehan and McCann (2000) aimed to provide data to the public and state policy makers regarding the activities of faculty throughout Ohio's state. The survey used a Faculty Service Report (FSR) to collect data. It focused on full time faculty activities at the academic environment. These studies point to teaching as the main focus of faculty. The following points show the uniqueness of teaching at the university.

Producing knowledge

Teaching at the university is unique. It differs from teaching at high schools and other educational institutions in many ways. One important difference is that faculty members do not only teach the most recent trends in various fields (Falk, 1990), but they also produce and add to the existing human knowledge (Blackburn and Lawrence, 1995). Therefore, teaching at the university is associated with research to a great extent.

Types of instruction

Types of instruction can be another clear difference, especially in American universities, where three basic types of instruction exist: the laboratory, the lecture, and the seminar. The lecture is widely used in the natural and Social Sciences. The laboratory is used by the chemist, the physicist and the biologist. The seminar is used by the research-minded historian, economist, and philologist (Veysey, 1974). Using different techniques and tools in teaching for the purpose of providing a good education --like advising students, providing training, conducting workshops--are some indictors of what the university does to prepare students for the future.

Using new techniques

According to Mathis and Chalofsky, the university instructor has the ability to use a variety of “techniques, tools, and technologies, in order to enhance teaching in a face-to-face environment as well as at a distance. The following list reflects some of the techniques currently in use at many colleges and universities.

1-Satellite and one-way transmission of educational television

2-Two-way or multi-way compressed video teleconferencing

3-E-mail and the use of electronic mailing lists and list-serve

4-WWW and on-line course resources

5-CU-SeeMe and real-time video conferencing over the Internet” (Mathis and Chalofsky, 1998, P.183-184).

Although previous techniques and technologies have a great impact on teaching, in that they help in reaching different environments, in saving time and energy and in clarifying new ideas in various fields, many see that using information technologies will restrict the learning process to those who have the capabilities to own such tools and techniques. Therefore, a sizable percentage will not have the same chance others have. Moreover, faculty members will be required to do more tasks than the ones they already do, in that they have to train their students on how to use programs, where to find the information, etc (Ehreberg, 1997). So, although the new technologies have helped in reaching various environments and communicating with different communities, they have added more responsibilities on the shoulders of those using them.

Heterogeneity

“Higher education is voluntary; students of any age are found in all classes” (Falk, 1990). Because the university is open for everyone, it has no restriction in accepting students in its programs. Students from different backgrounds, races, colors, religions, ages, etc., are welcomed and accepted as long as they meet the entry requirements.

Lehrfreiheit

This is a German expression, which refers to "the right to teach freely without interference by anyone” (Falk, 1990, P.60). No one has the right to determine what to teach, how to teach, or even who to teach. Therefore, academics have the freedom in performing their major tasks and doing their own activities.

Teaching Methods

Lecturing students can be the most popular instructional style in the academic environment, where the academic member presents a speech about a certain topic, then

opens the discussion with class attendants (Falk, 1990, P.62). Professors, in order to successfully teach, have to consider the following: collecting resources related to a specific topic, presenting the topic to their students in a logical way, discussing certain cases, concluding specific results, and showing dimensions and future trends.

Student Advising

"Student advising is considered to be one of the student's most effective out-of-class relationships; therefore, it may influence the student's success in college" (Mathis and Chalofsky 1990, P.72). It is considered to be an important part of the teaching process because it is usually done privately and individually, so it has a great impact on students.

Training

Training can be offered in different areas like using a new computer service, campus tutor, safety, etc. The university announces this activity by posting messages through bulletin boards, email, or the mailing lists. Training is optional and offered for free, and it is offered to those who seek excellence in performing their tasks in their profession.

Grades

Grades are considered to be the final evaluation of students in a course, and it is a must that a professor has to determine at the end of every semester. No one has any influence on the professor's decision (Falk, 1990). Letter grades, from A to F, including pluses and minuses, are not the only grades used; there are others like numeric grades, satisfactory and unsatisfactory grades, S / U, audit grades, etc.

Research

The university is not only an educational institution. In addition to teaching students existing knowledge, it also tries to create new knowledge through research. Therefore, the university in addition to being considered an educational institution, could be considered a research institution as well. The saying "publish or perish" demonstrates the importance of publication to academics for the purpose of getting promotion and tenure in the academic environment; however, publishing research is also important for the purposes of gaining a reputation and success in an academic career.

Definition

Wilson claims that "the meaning of research is so equivocal that almost any sort of investigative enterprise may be connoted, but academic men ordinarily have in mind the kind of inquiry that yields publishable results" (Wilson, 1995, P.195).

Ideology of research

Creating new knowledge for the sake of developing society is an important task. This can be found in the academic community in two ways: 1) Performing research where the researcher is interested in a specific topic and has some idea of what he or she is looking for. This type of research does not have to be for the purpose of getting a degree like the PhD, but it has to be implemented in new areas that have not been searched before, or it has to build on others' effort in order to add to human knowledge, and avoid duplication of others' effort. 2) Performing research for the purpose of getting a degree like the PhD that is required for virtually all faculty positions in higher education (Blackburn and Lawrence, 1995). This degree has also to be based on work in new areas that have not been researched before, in order to avoid repeating others' effort.

In the university, professors have the freedom to search certain fields and disciplines that meet their interests (Falk, 1990). Research has also helped in the following: 1) Creating new disciplines, 2) financial advantage, and 3) Gaining respect, admiration and reputation. Creating new disciplines depends on research, in that research helps in investigating and exploring connections and relations among disciplines. It helps in explaining certain phenomena, establishing models, building theories, and creating a basis for new disciplines. Therefore, research is considered to be "the key element in the formation of new disciplines" (Finnegan, Webster, and Gamson, 1996, P.398). Research has also become a big business for faculty members because they have the ability to publish their research in books and journals, thus gaining reputation, tenure, promotion, and salary. This results in a higher income, popularity, the chance to travel all over the world, and to consult in various organizations (Blackburn and Lawrence, 1995). Research has also a positive impact on the university reputation, in that the university's rank tends to be affected by the quantity and quality of its own research. Therefore, the more published research, the higher rank the university takes, and therefore, the higher the student enrollments, and the better the support from the surrounding organizations.

Service

Service is defined as "the catchall name for everything that is neither teaching, research, nor scholarship" (Blackburn and Lawrence, 1995, P.222).

The university serves society because it was founded and established for this purpose. In addition to offering teaching and conducting research, it serves society in many ways. It encourages academicians to engage in a wide variety of activities, which the university may support under the name of cultural conservation, dissemination, and

innovation (Wilson, 1995). The university is an open system whose “principal job is to build human capital, for the long-term benefit of society at large” (Ehreberg, 1997, P.29). Examples of services can be providing medical clinics, work shops, research bureaus, etc, which are considered to be different channels to interact and reach society (Wilson, 1995). Some of the services offered are free, while others are for fee, according to the type of service mentioned below.

Types of service:

There are two types of services academics can be in involved in: internal service, and external service. **Internal service** includes all the activities that can be under the umbrella of serving the academic environment, such as offering a comprehensive tutorial to new students, helping alumni in getting suitable careers, arranging guest lectures, sponsoring a certain programs, etc (Blackburn and Lawrence, 1995). **External service** can include three kinds of activities:

1-Consulting---selling personal services to outside parties. In this type the academic member acts as an expert in the field. He/She gets paid for his time and effort resolving certain problems, or helping in reaching a specific goal (Blackburn and Lawrence, 1995). This kind of service is provided for a fee, so the hiring organization has to seek experts to perform certain tasks by selecting them from the universities that have high ranks.

2-The second external service type is much like consulting, where the academic member serves the academic environment he/she is working at, and usually this kind of service is done for free. An example is a case when the faculty member in the School of Information Sciences is helping the library to develop their system or collection (Blackburn and Lawrence, 1995).

3-The third type of external service is that which faculty give to their disciplinary specialty (Blackburn and Lawrence, 1995). This type of service can be provided either in the country or outside. It is also provided for free, but certain associations may support transportation and living expenses for the period. Though this kind of service is provided for free, the reputation of the university and its academics can be the main beneficiary.

Methodology:

This study design embraced the qualitative methodology, in that it focused on subjective meanings, definitions, metaphors, symbols and descriptions. "Using the survey

method to study Information Seeking Behavior often results in descriptive statistical data; such as type of sources used and rating of the sources"(Wang, 1999, P.61).

The case study methodology was used to study behavior of Library and Information Sciences faculty at one of the top 10 American schools, School of Information Sciences, University of Pittsburgh. The **Task or activity/ Sources approach** was adopted for this study, measuring the extent to which users actually used different kinds of sources, media, system, documents, materials, or channels for different tasks.

The qualitative case study approach used allow extensive description and analysis. This methodology has many advantages, summarized as follows:

"1-Case studies allow generalizations either about an instance or from an instance to a class. Their peculiar strength lies in their attention to the subtlety and the complexity in its own right" (Bassey, 1999, P.23). Therefore, results from this study will help in improving other schools that have the same environment whether they are in same state or in other states in USA.

2-"Case studies present research or evaluation data in a more publicly accessible form than other kinds of research report, although this virtue is to some extent bought at the expense of their length" (Bassey, 1999, P.23). Therefore, the case study would be a useful tool for library managers and those who specialize in library and information science, in that they will find such studies more accessible.

Methods or tools for collecting data

Questionnaire

The technique

A questionnaire was the major research instrument for this study. According to Drew "a questionnaire must be constructed in such a manner that it will extract accurate information from the subjects. As a minimum, this means that the questions must be written clearly, and in a fashion that minimizes the possibility of misinterpretation by respondents. The questionnaire may be personally distributed by hand or distributed to respondents through the mail" (Drew, 1980, P.122-123). The questionnaire was sent to the academic staff via email. This was intended to save time and effort while sending and receiving information, and to facilitate the reading process.

Since mailed questionnaires are often plagued with a low response rate, in that a small percentage of them are completed and returned, the questionnaire was distributed via mailing lists through the Internet three times during the 2005 semesters. It was sent to

faculty at Library and Information Science schools at one of top 10 American universities, the University of Pittsburgh.

The content

Researchers in the area of information seeking behavior indicated that "users' Information Seeking Behavior is influenced (or determined) by some or all the following:

1-Individual characteristics of the user (such as domain knowledge, previous experience, preferred cognitive style, etc.),

2-The user's task, goal, or information need,

3-Characteristics of the user's organizational role and typical problems encountered within that environment.

4-The retrieval system" (Hert, 1998, P.305).

The questionnaire included questions that covered faculty activities teaching, research, services, the degree or the level of dependence on electronic journals, evaluations of such source, and recommendations for improving access to these sources.

Scope of the study

The use of Electronic Journals by Library and Information Science faculty members in performing various academic tasks at The University of Pittsburgh was studied. The school was chosen as the site of this study since it is a major research university whose faculty are involved in high quality academic tasks, teaching, research and service. The sample is also large enough to have a significant representation of the major Library and Information Science field.

The focus of the study

The research covered faculty research behavior in one American school, focusing on the Library and Information Science faculty. The faculty had been selected as the target and not graduate or undergraduate students because the faculty is the heart of the university that performs its main tasks: teaching, research and service. Because they have the top positions at the university, the tasks they do will have the greatest impact on the institution.

The population for the study and its distribution

The subjects were drawn from full time faculty at all ranks whether in the tenure stream or not. A questionnaire was distributed during working hours (8 AM- 5 PM). It

was distributed to faculty via email, to insure that faculty at Library and Information Science schools received it, and to facilitate the reading process when studying the responses received. The study used three programs: Microsoft Front page, Microsoft Excel and Microsoft Access. Microsoft Front page was used to make the web questionnaire. Microsoft Excel was used to make the calculations and mathematical equations. Microsoft Access was used to make the reports and the extract various tables required for the analysis.

This section of the study provides demographic information about the sample in the study. It presents information about gender, academic ranks, and sample response rate.

Gender

The question was ***[-Gender: Male ( ) Female ( ])].***

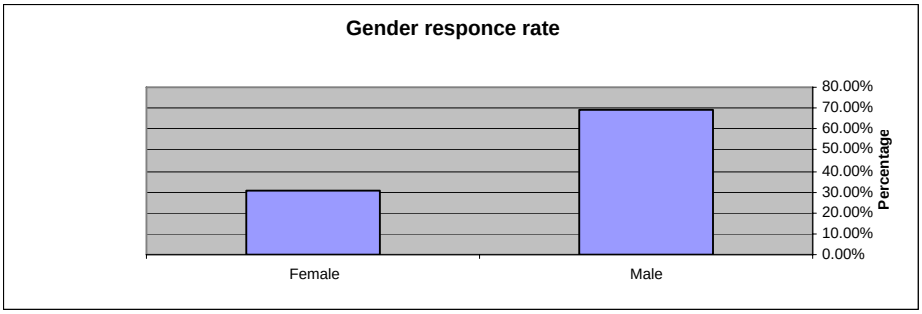
The total number of faculty members who participated in the study was 13; 9 of them were males, and 4 were females. Therefore, 69.23 % were males, and 30.76 % were females. This indicates that males participated in the study were two times females participated in the study. See table (3) for details.

Table (3) Percentage of Library and Information Science faculty responding by gender: University of Pittsburgh 2006.

Gender	Respondents	Percentage
Male	9	69.23 %
Female	4	30.76 %
Total	13	100 %

Source: Survey of Library and Information Science faculty (n=13)

Figure (2) Percentage of Library and Information Science faculty responding by gender: University of Pittsburgh 2006.



Source: Survey of Library and Information Science faculty (n=13)

Academic rank

The question was ***[-Rank: Instructor ( ) Lecturer ( ) Assistant professor ( ) Associate professor ( ) Professor ( ) Other---------- ( )]***

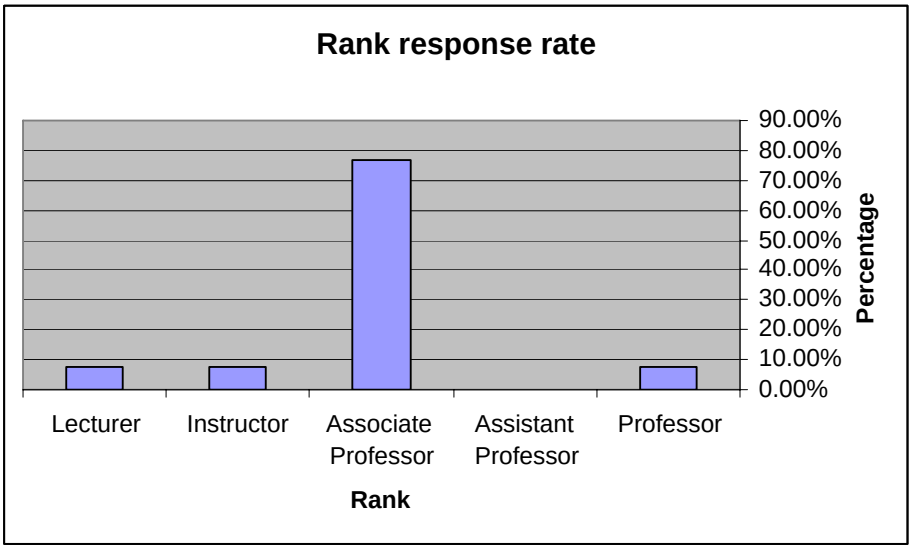
The largest group of those who answered the questionnaire were associate professors, 76.92 %; 7.69 % were professors; 0 % were assistant professors and 7.69 % for each instructors and lecturers. Since the majority of respondents were professors, and associate professors, it can be assumed that they are involved in performing the main academic teaching tasks. See table (4).

Table (4) . Percentage of Information and Library Sciences faculty responding by rank: University of Pittsburgh 2006.

Rank	Respondents	Percentage
Professor	1	7.69 %
Assistant Professor	0	0 %
Associate Professor	10	76.92 %
Instructor	1	7.69 %
Lecturer	1	7.69 %
Total	13	100 %

Source: Survey of Information and Library Sciences faculty (n=13)

Figure (3) . Percentage of Information and Library Science faculty responding by rank: University of Pittsburgh 2006.



Source: Survey of Library and Information Science faculty (n=13)

Sample Response Rate

In order to obtain a quick return and a high response rate, the questionnaire was designed electronically and was accessible for faculty members through the web. The questionnaire was designed electronically using Microsoft Office Front Page and was built and established on the Egyptian Universities Networks, EUN, web site. The questionnaire was sent via email over five times during the spring of 2005 to all faculty members in the School of Information Sciences at the University of Pittsburgh. The faculty members' email addresses were obtained from the school' web site. The questionnaire was sent on February and March of 2005. Out of 55 faculty surveyed, 13 responded to the questionnaire. A Microsoft Office Access Database was created in order to facilitate the process of extracting and analyzing the data. The Microsoft Office Access Database helped in creating the reports and tables required for the analysis. Microsoft Office Excel was used in designing Figures to illustrate data and in performing various calculations.

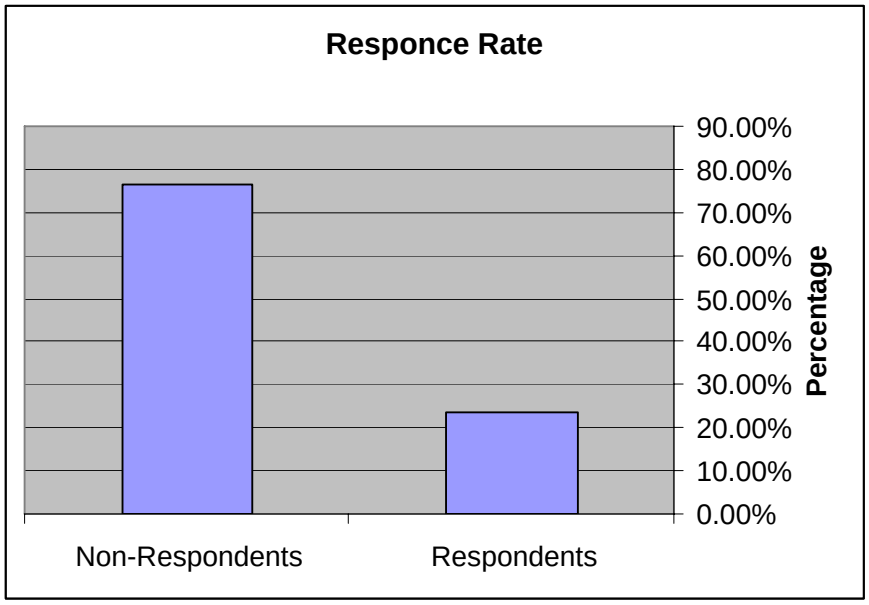
The study was performed at one school at the University of Pittsburgh. The response rate was about 23.63 % after sending five emails during the spring of 2005. See table (5).

Table (5). Response rate of Library Science faculty: University of Pittsburgh 2006.

Population	Number of responses	Response rate
Respondents	13	23.63 %
Non-Respondents	42	76.36 %
Total	55	100 %

Source: Survey of Library and Information Science faculty (n=55)

Figure (4) . Response rate of Library and Information Science faculty: University of Pittsburgh 2006.



Source: Survey of Library and Information Sciences faculty (n=55)

Testing the hypotheses of the study

The two hypotheses were tested using information about the average use by Information and Library Science faculty members of various types of information sources. In order to calculate and test the hypothesis, the average use per Information and Library Science faculty per typical month shown in the table cells was calculated. These numbers are the results of three processes as follow:

1) Calculate the mid range of the main table in the questionnaire (No use, 1-4, 5-14, 15-29, 30-More) to be (0, 2.5, 9.5, 22, 35); 2) Count the number of hits in each cell from the 13 respondents; 3) Calculate the mean by dividing the sum of the results of each row by the number of respondents.

Hypothesis of the study

The study matched the basic academic tasks of Information Science faculty with electronic journals to determine to what degree they depend on this source. Two hypothesis were addressed:

1-There will be a difference in the using electronic journals used to perform the basic tasks or activities according to faculty rank, and gender.

2-The degree to which faculty depend on electronic journals will differ across the academic tasks/activities, as follows: A) They will depend most on electronic journals for research tasks. B) They will depend least on electronic journals for service tasks.

The first hypothesis was that there will be a difference in the sources used to perform the basic teaching tasks or activities according to faculty rank, and gender.
The following table was in the questionnaire.

Hypothesis (1)

Part (1) Faculty Rank

In order to test the hypothesis (1) and show the variance in using various information sources according to rank, a query was made using Microsoft Office Access to calculate the use of various information sources according to various ranks. The result of this query provided a report that presented the use of sources according to the teaching tasks / activities. Numbers of hits were multiplied by the mid-ranges and were summed and divided by total numbers of individuals of each rank in the sample, in order to calculate the average use of various information sources per faculty member by rank The study found the average number of uses over all types of information sources per faculty member per typical month by rank as follows. Emails and directories and search engines were found to be the type of sources used most by faculty members at all ranks, while news groups and scholarly electronic archives were the least used sources.

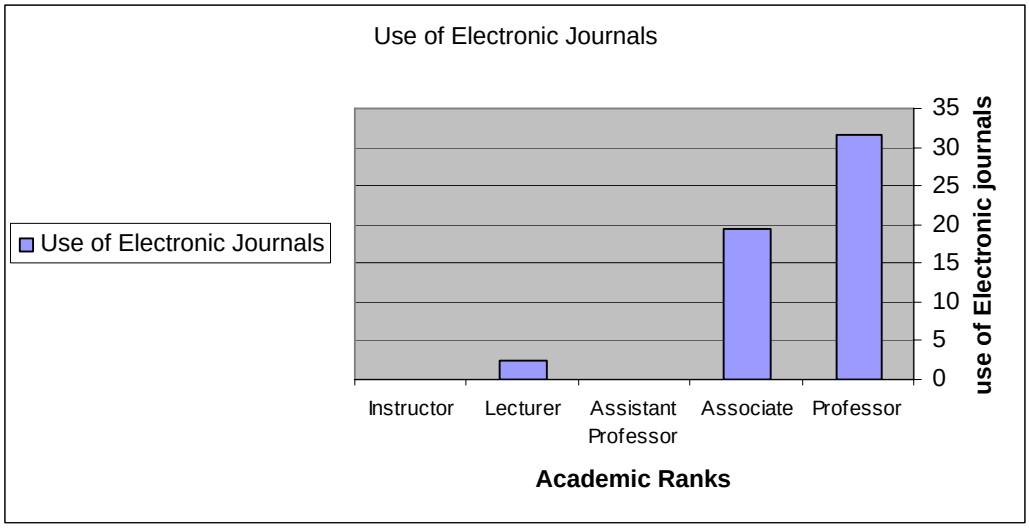
The study found the average number of monthly uses per faculty member is higher for professors than for any other rank, followed by Associate professors and lecturers in second and third places. Assistant professors and Instructors are at the end of the list. See table () for details.

Figure (7). Total average use of electronic journals per Library Sciences faculty member per typical month by rank: University of Pittsburgh 2006.

Use of Electronic Journals	Rank
31.5	Professor
19.4	Associate Professor
0	Assistant Professor
2.5	Lecturer
0	Instructor

Source: Survey of Information and Library Sciences faculty (n=13)

Figure (7). Total average use of electronic journals per Library Sciences faculty member per typical month by rank: University of Pittsburgh 2006.



Source: Survey of Information and Library Sciences faculty (n=13)

Part (2) Faculty Gender

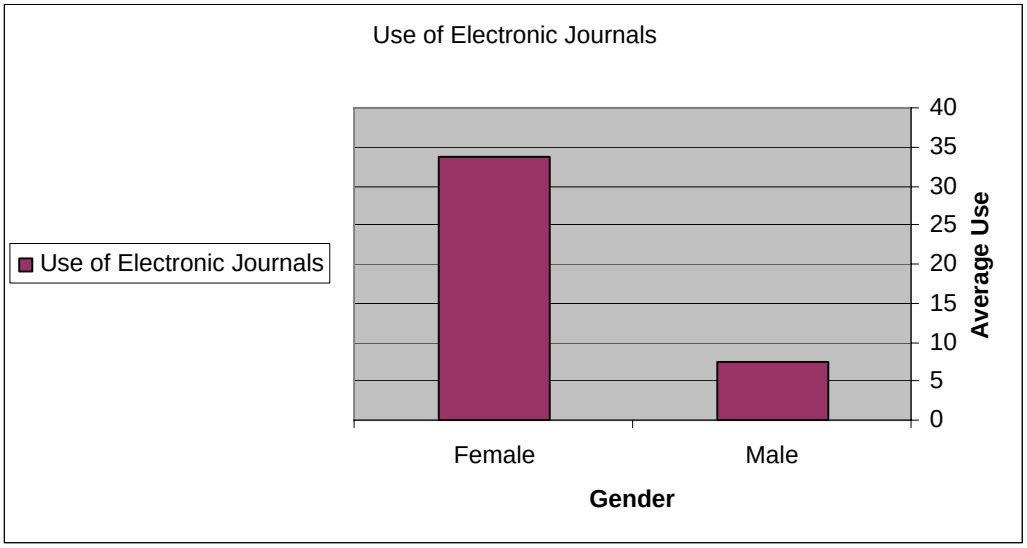
In order to test the fourth part of hypothesis (1) and show the variance in using various information sources according to gender, a query was made to calculate the use of various information sources according to gender. The result of this query is a report that presented the use of sources according to the three main tasks. Numbers of hits were multiplied by the mid-ranges and summed and divided by total number of faculty members respondents of each gender, in order to calculate the average use of various information sources per faculty member by gender. The study found the total use of females is higher than males. See table (9) for details.

Table (9) Use of electronic journals by Library & Information Science Faculty: University of Pittsburgh 2006.

Use of Electronic Journals	Gender
7.55	Male
33.75	Female

Source: Survey of Information and Library Sciences faculty (n=13)

Figure ( ) Use of electronic journals by Library & Information Science Faculty: University of Pittsburgh 2006.



Source: Survey of Information and Library Sciences faculty (n=13)

Hypothesis (2)

The second hypothesis indicates that the degree to which faculty depend on electronic journals will differ across the teaching tasks/activities, as follows:

The degree to which faculty depend on electronic journals will differ across the academic tasks/activities, as follows: A) They will depend most on electronic journals for research tasks. B) They will depend least on electronic journals for service tasks.

The study found research is the main activity that Information and Library Science faculty depend on electronic journals, followed by teaching with almost similar amount 7.5 and 7.38. However, service comes at the end of the list with the amount of 1.3.

The question was ***[Over the last typical month how often did you access Electronic journals in Teaching, Research and Service?]***

Tasks / Usage of Electronic Journals	No Use	1-4	5-14	15-29	30-More
Teaching students					
Performing research					
Serving the community in and out the university					

Table (6) Tasks distribution of Library and Information Science faculty

Teaching activities	Distribution
Teaching students	7.38
Performing research	7.5
Serving the community in and out the university	1.3

Source: Survey of Information and Library Sciences faculty (n=13)

Figure (5) Use of E-journals according to academic tasks of Library and Information Science faculty

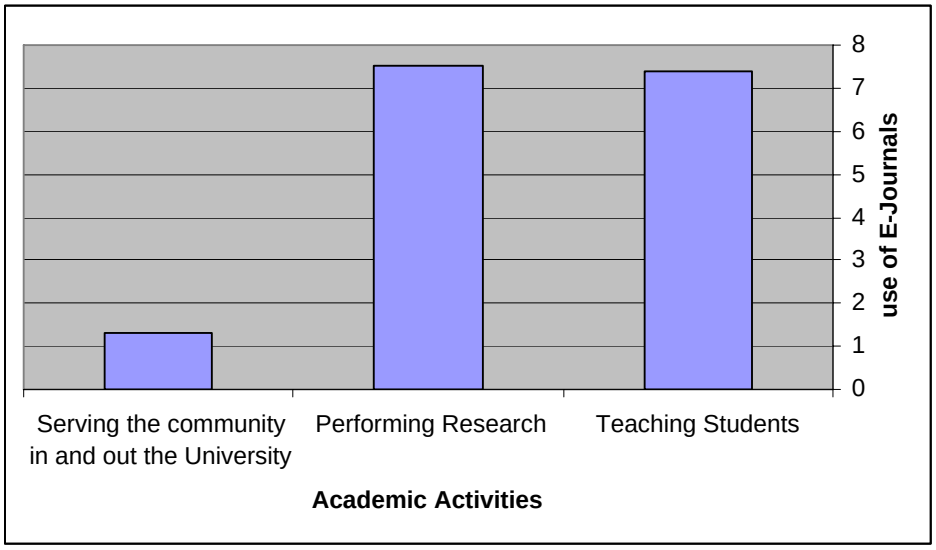


Figure (5) Use of E-journals according to academic tasks of Library and Information Science faculty

Source: Survey of Information and Library Sciences faculty (n=13)

Evaluation Criteria

In order to measure the level of satisfaction, numbers of hits in each cell were multiplied by 1, 3, and 5 to represent low, med, and high values, and summed, then the result was divided by the total number of respondents. The question was: ***[-Please evaluate each of the following sources based on the last time of usage]***

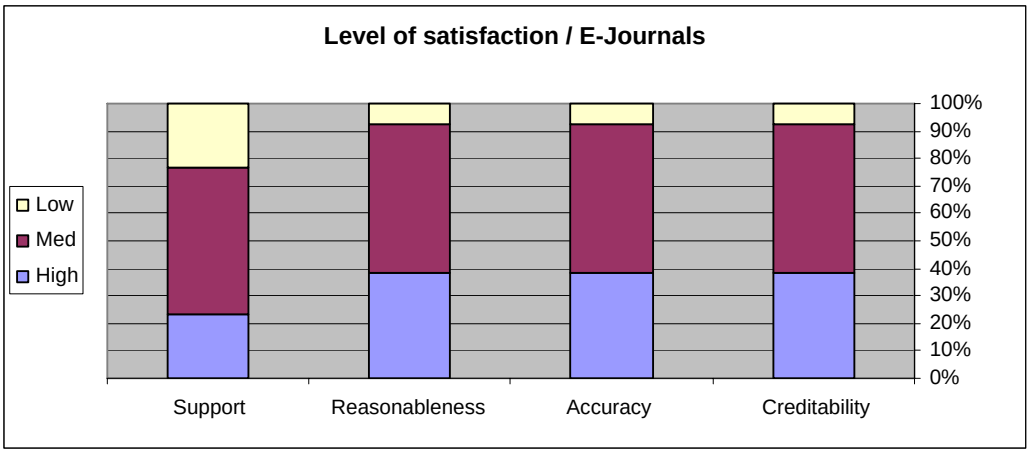
The study found faculty members to be satisfied most with electronic journals, index and abstracts and full text databases and, scholarly electronic archives, while they were least satisfied newsgroups and directories and search engines. See table (10) for details.

Table (10) Faculty evaluation of electronic journals by CARS criteria of evaluation: University of Pittsburgh 2006.

Electronic Journals / Level of satisfaction	High	Med	Low
Creditability	5	7	1
Accuracy	5	7	1
Reasonableness	5	7	1
Support	3	7	3

Source: Survey of Information and Library Sciences faculty (n=13)

Figure (11). Faculty evaluation of various electronic sources by CARS criteria of evaluation: University of Pittsburgh 2006.



Source: Survey of Information and Library Sciences faculty (n=13)

Analysis of open ended questions

Several of the survey questions were open-ended, offering respondents the opportunity to make longer comments about their use of electronic resources. These comments are summarized below.

Other reasons for using electronic sources

The question was ***[-In addition to these factors (credibility, accuracy, reasonableness, and support), what other reasons do you have for using electronic sources of information]***

When offered the opportunity to explain the factors, in addition to those explicitly identified, that contributed to their use of electronic sources, 10 faculty members chose to comment. Examination of their comments suggests that they can be categorized in the

following areas: *accessibility (4 respondents) , ease of access (5 respondents), timeliness , fast access, currency, (1 respondents for each).*

Other reasons for not using electronic sources

The question was ***[-What characteristics of electronic sources limit your use of them?]***

When offered the opportunity to explain the factors that limited their use of electronic sources, 6 faculty members chose to comment. Examination of their comments suggests that they can be categorized in four areas:

1-Credibility, 2-University Subscriptions and cost, 3-Access 4-Poor quality and editing.

Suggestions, comments, and recommendations

The question was ***[-Please use the space below for any suggestions comments, and recommendation for improving use of electronic sources]***

When faculty members were offered the opportunity to present their suggestions comments, and recommendation for improving use of electronic journals,

4 faculty members chose to comment. Examination of their comments suggests that they can be categorized in the following areas: Subscribing in certain types of journals (1 respondents), training (1 respondents) , peer review (1 respondents) , improving interface (1 respondents)

Implications and Suggestions

Based on previous analysis, the study showed a difference in using various information sources**,** where the study found variability in the sources used according to rank and gender. Thus, in order to provide high quality service, the University Library System should provide the sources that meet each category.

The study also showed a variance satisfaction with electronic sources, where faculty members are most satisfied with Index and abstracts and Full Text Databases and Electronic Journals and least with Directories and Search Engines and Scholarly Electronic Archives.

Faculty members consider electronic journals high creditable, most accurate, high reasonable and most supportive. In addition to this, they consider electronic journals convenient to meet their needs. Therefore, this part suggest specific action for the University Library System, where a single access point for all types of materials, with the ability to search only for specific types of materials, and linkages to the documents themselves.

Appendixes

1) Formal Email
2) Paper- Based Questionnaire
3) Web-Based Questionnaire

Helwan University
Faculty of Arts
Department of Library and Information Sciences

Use of Electronic Journals by Library and Information Science faculty members in performing various academic tasks: A field Study performed at the School of Information Sciences at the University of Pittsburgh

I am a lecturer at the Department of Library and Information Sciences at Helwan University, Cairo, Egypt. I am performing a study on the Use of Electronic Journals by Library and Information Science faculty members in performing various academic tasks. I appreciate your participation, as it will assist in understanding faculty trends and activities in the academic environment. This questionnaire will take less than 5 minutes from each participant to complete it.

There are no foreseeable risks associated with this project. This is an entirely anonymous questionnaire, and so your responses will not be identifiable in any way. Data and information gained from this questionnaire will be confidential and will be used only for scientific purposes. Participation is completely voluntary and the subjects may withdraw from the study at any time and for any reason without penalty. In the meantime, if you have any questions, please ask me.

Thank you.

H. ABOUSERIE, PhD.
E Mail: hossam_usa@yahoo.com

Over the last typical month how often did you access Electronic journals in Teaching, Research and Service?

Tasks / Usage of Electronic Journals	No Use	1-4	5-14	15-29	30-More
Teaching students					
Performing research					
Serving the community in and out the university					

Please evaluate E-Journals based on the last time of usage according to Credibility: known or respected authority; **Accuracy:** Correct, up to date, comprehensive; **Reasonableness:** Fair, balanced, objective, reasoned; **Support:** Listed sources, contact information, claims supported:

Type of Evaluation	Low	Med	High
Credibility of E- Journals			
Accuracy of E- Journals			
Reasonableness of E- Journals			
Support of E- Journals			

-What other reasons do you have for using E-Journals?

-What characteristics of electronic sources limit your use of E-Journals?

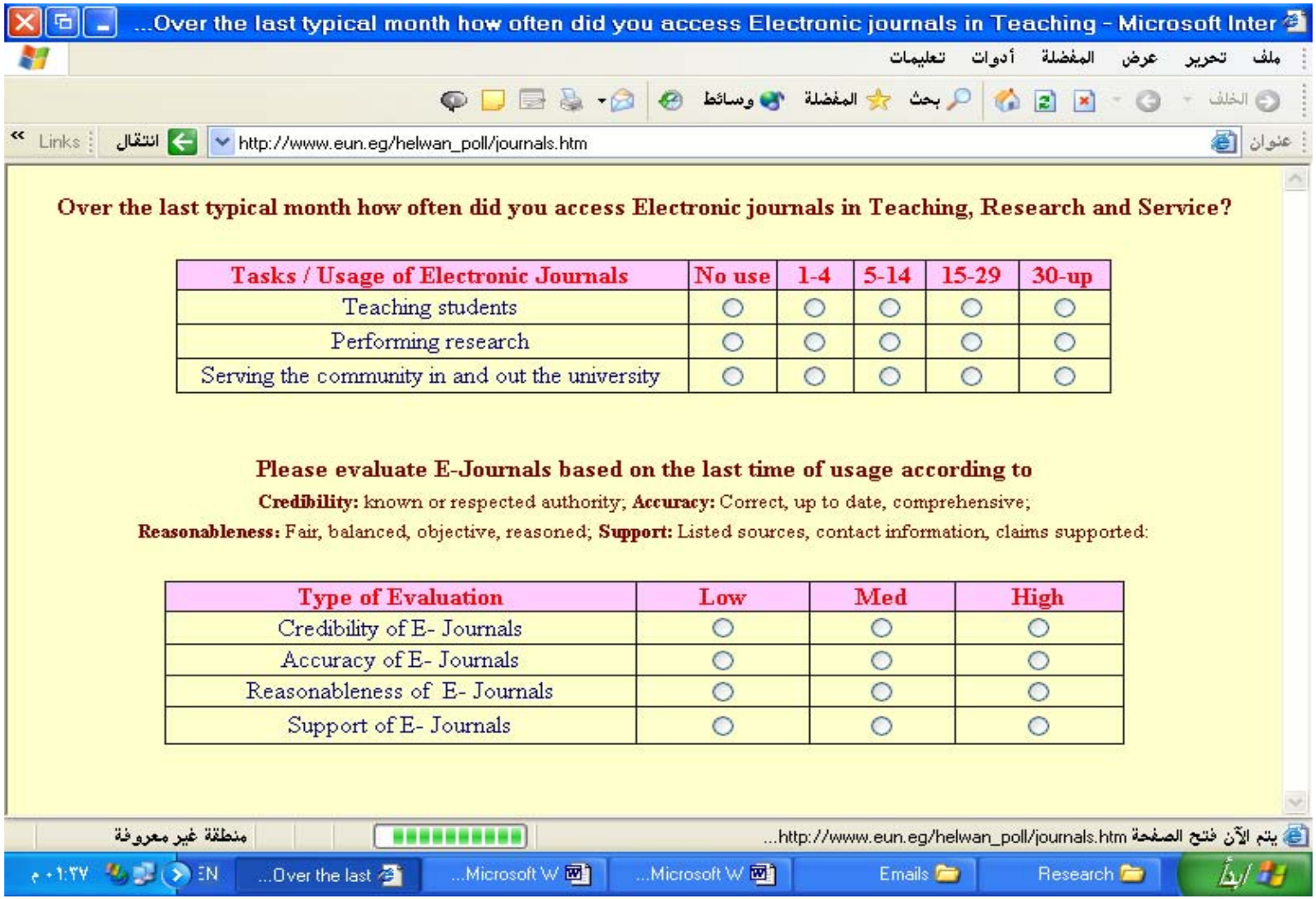
-Please use the space below for suggestions, comments and recommendations for improving use of Electronic Journals

---

-Background information

-Gender: Male ( ) Female ( )

-Rank: Instructor ( ) Lecturer ( ) Assistant professor ( )
Associate professor ( ) Professor ( ) Other---------- ( )


...Over the last typical month how often did you access Electronic journals in Teaching - Microsoft Inter
ملف تحرير عرض المفضلة أدوات تعليمات
الخلف بحث المفضلة وسائط
Links انتقال http://www.eun.eg/helwan_poll/journals.htm عنوان
Over the last typical month how often did you access Electronic journals in Teaching, Research and Service?
Tasks / Usage of Electronic Journals
No use
1-4
5-14
15-29
30-up
Teaching students
Performing research
Serving the community in and out the university
Please evaluate E-Journals based on the last time of usage according to
Credibility: known or respected authority; Accuracy: Correct, up to date, comprehensive;
Reasonableness: Fair, balanced, objective, reasoned; Support: Listed sources, contact information, claims supported:
Type of Evaluation
Low
Med
High
Credibility of E- Journals
Accuracy of E- Journals
Reasonableness of E- Journals
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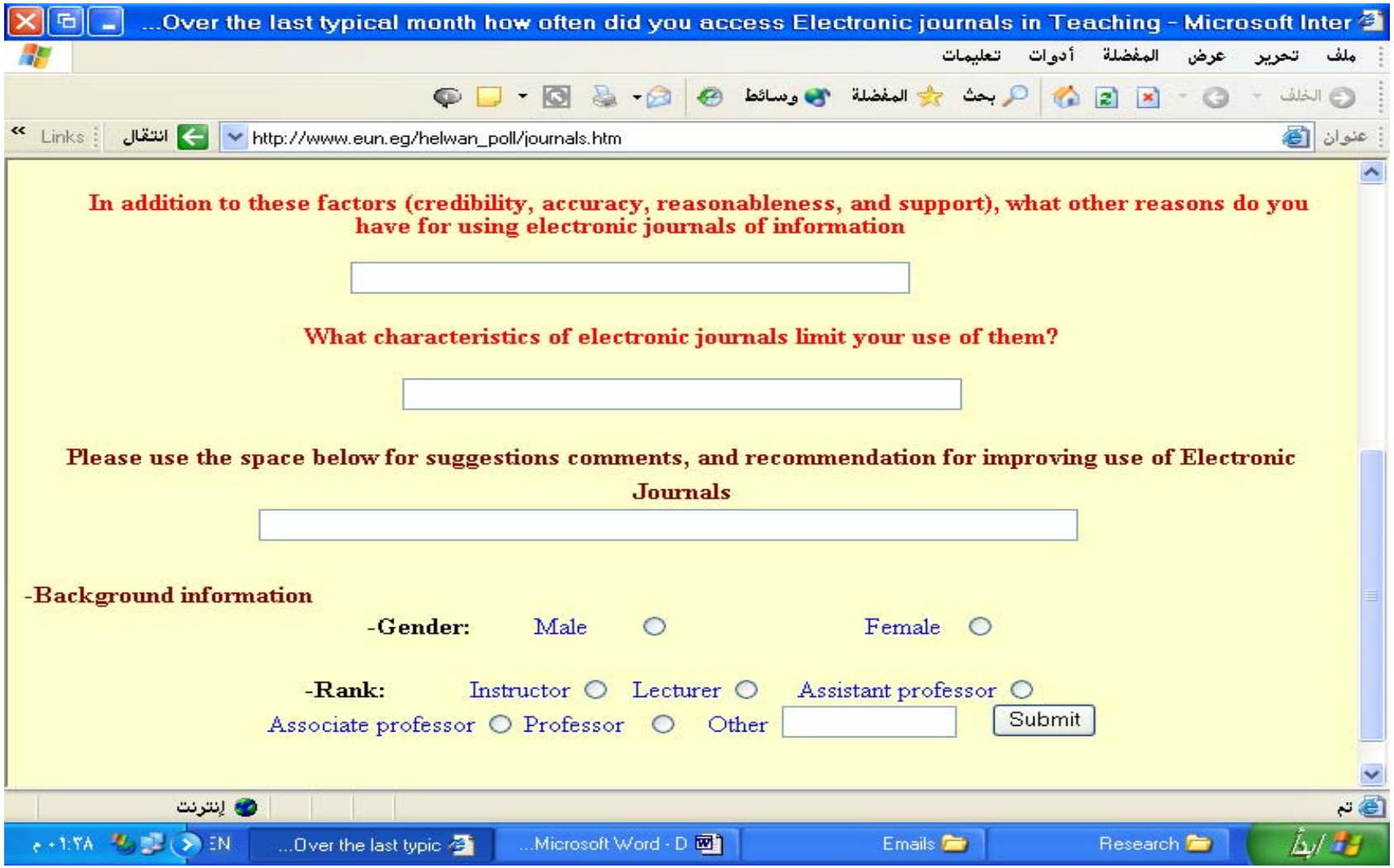
...Over the last typical month how often did you access Electronic journals in Teaching - Microsoft Inter
http://www.eun.eg/helwan_poll/journals.htm
In addition to these factors (credibility, accuracy, reasonableness, and support), what other reasons do you have for using electronic journals of information
What characteristics of electronic journals limit your use of them?
Please use the space below for suggestions comments, and recommendation for improving use of Electronic Journals
-Background information
-Gender: Male Female
-Rank: Instructor Lecturer Assistant professor
Associate professor Professor Other
Submit

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