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**THE EFFECTIVE USE OF
ELECTRONIC INFORMATION
SERVICES (EIS) IN GREEK
HIGHER EDUCATION AND THEIR
RELATIONSHIP TO CURRENT
GREEK EDUCATIONAL
PRACTICE**

IOULIA SIDERA-SIDERI

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of the requirements of the
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Abstract

Over the past two decades Greek university libraries have had to respond to a changing academic and information landscape which impacts significantly on the type of services offered as well as on the way in which these services are offered. The development of Electronic Information Services (EIS) is a major priority in the Higher Education sector. In the same time, the evolution of learning and teaching practice and the changing demands of the academic community affect the libraries' role and mission. This research explores the relationship between the education system, in terms of the teaching and learning process that are used particularly in the Greek context and EIS provided by libraries. There is a focus here on whether EIS satisfy users' needs in the current Higher Education context.

A qualitative methodology has been followed in order to provide an in-depth user-centred investigation in two of the libraries at the Aristotle University of Thessaloniki. The empirical investigation draws data from three different groups of participants: students, academics and librarians. It is a user-centered study which presents a picture of the use and understanding of EIS in the context of the library.

Conclusions show that the education system strongly influences the library's operation by determining its role and services. The research is focused on defining the extent to which EIS meet their objectives from the perspective of all the participants groups. It also emphasizes the importance of the communication between the different parts of the university community and the role of the education system regarding the use of the EIS. IT skills and computer access have been identified as two important parameters in defining the effective use of EIS. The findings of this research, based on the two research sites under investigation, will provide an insight and an understanding of the needs of users and the characteristics of the context. Additionally, it can support librarians and academics in their decision about library operations and how those fit with the wider educational setting.

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I would like also to thank the Greek National Institute for Scholarships (IKY) for supporting this thesis during the first years and the Northumbria University.

DECLARATION

I declare that the work contained in this thesis has not been submitted for ny other award and that is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others. Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the School Ethics Committee.

Name: Sidera-Sideri Ioulia

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Date: February 2013

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1. Introduction

1.1 Defining the context

Academic libraries play an essential role in the teaching and learning process in any educational environment by creating an accessible, effective and efficient service for all students. Over the past two decades, Greek university libraries have introduced Electronic Information Service (EIS) to their users, although this process has not managed to be translated into a practical and effective use. Several questions need to be addressed:

- How are these services offered to users?
- Does the user need these services?
- How does the user engage with these services?
- How the provision of these services is linked with the existing teaching and learning practice?

In order to avoid confusion it is important to clarify the meaning of the terms ‘information services’, ‘electronic sources’ and ‘electronic resources’. In Harrod’s *Librarians’ Glossary*, an ‘information service’ (p. 322) is defined as:

‘...a service provided by, or for, a special library which draws attention to information possessed in the library or information department in anticipation of demand.’

The Glossary provides the following definitions for an ‘electronic source’ (p.599):

1. Any document which provides the users of libraries or of information services with the information sought.
2. Any document which provides information reproduced in another document.
3. The data or records providing the basis for information search.’

Finally, about the term ‘information resource’, the International Encyclopedia of Information and Library Science indicates that there is (p. 190-191):

‘... some confusion over the concept of the Information Resources, mainly as a result of the inclusion of the technological resources in the concept. However most commentators regard the following as constituting information resources in organization: data, text, records, multimedia, and information technology...’

For the purposes of this research the term ‘electronic information services’ includes any services available in electronic form on the library’s web site, in the local intranet or available in the library.

A primary question formed in the early stages of this work was about the association between the level of the provided EIS and the current educational model, which the library serves. The educational model in Greece does not predominantly require that students have to do assignments, which minimises the active role that libraries may play in the learning and teaching process. Indeed, the teaching process is more teacher-centred (Eurydice, 2008). Students are passive in seminar classes and are assessed in the main, by exams. These conditions are in an ongoing change. The Greek government tries to adopt methods and practices which are more student-centred. One of the challenges is that active learning is going to be part of the Greek education model in all the levels- primary, secondary and higher education. . In the new framework, the library has to be the cornerstone of the educational process by playing a more predominant role in the teaching and learning process.

Greek university libraries have the same demands as those found across the international community; changes in the educational process affect their operation (Katsirikou, 2002; Koseoglou et al., 2008; Papazoglou & Semertzaki, 2001; Stavrou, 2001). Students increasingly demand more services (Tsimpoglou & Papatheodorou, 2001) believing that the electronic systems and technological developments can help them to find the information they want, on time. Furthermore, users assume that with just a ‘mouse click’ they could find everything (Cullen, 2001; Sitas, 2000) without taking into account the complexity of the electronic systems. It has been shown that users need to acquire specific skills in order to locate, retrieve and use the appropriate information (Akeroyd, 2001; Urquhart and Rowley, 2007).

The available technology in Greek university libraries affects the whole universities' operation. Already in 2001 Fragkou-Mpatsiou et al. (2001) had recorded an increase in EIS availability and their use in the Greek university library context. According to formal statistics given by the T.Q.M.U. (1998-2010). Greek university libraries have been developed very quickly with respect to their services and sources. The picture is more or less the same compared to that described by Ambrozic (2003) as well as by Lindberg and Humphreys (2008): EIS have increased dramatically in the last two decades. Most of the university libraries provide an On-line Public Access Catalog (OPAC) (Xatzimari & Zoupanos, 2001). Nowdays on their web sites access is given to a number of electronic services and sources such as Frequently Asked Questions

(FAQ), on-line tutorials, databases, electronic journals, library rules and other information about their operation (T.Q.M.U., 1998-2010).

These services, along with the needed equipment, require new management and technical skills. Traditional methods of information retrieval are rapidly being replaced as increasingly higher quantities of information are available on the web, for example, the printed journals subscriptions have been transformed into electronic access journals (Angel de Vicente et al, 2004). However, electronic access on EIS has some requirements such as the users' IT skills, easy access and information literacy. As the landscape changes, library professionals are required to adopt the new practices which often is not an easy transition. There are members of the staff that still do not have IT skills at all and, they are afraid of the new technology. Thus, EIS, in their current form, are not always 'welcome' in some parts of the university community. Librarians have to overcome many difficulties in their effort to change things and improve services. This transition has been driven from-and supported by top level management across the university. It also relies on the support of all stakeholders in order to ensure effective and efficient application within the educational context.

The distinctiveness of this research lies in the use of a critical and analytical approach in a field and context which have not been explored in depth in previous studies. A qualitative case study approach has been used in order to investigate this phenomenon by exploring the perspectives of stakeholders for providing a more comprehensive picture of the context.

A great deal of research is available upon the use of EIS in other countries such as USA, Australia and UK, but little has been done within the context of Greek libraries in this particular area. Although there are statistics by vendors about library's usage, there are only few investigations about EIS use and relevant surveys within university libraries, while there is only one small scale research study, looking at the user qualification on how to use EIS (Bardakosta, 2008; Gabrilis Kakali, 2008; Pantouli & Nikserlidou, 2002; Tsami, 2008).

This case study research employs a number of data collection techniques:

- in depth interviews and observation of students
- in depth interviews and a Critical Incident technique of academics;

- unobtrusive observation of the case sites;
- daily questions file considering every day EIS usage in the libraries and labs,
- telephone interviews considering what academics require by students.

The specific contribution will be to provide insight into the provision and use of EIS within the Aristotle University Libraries providing in-depth rich pictures to allow for transferability based on contextual applicability to the wider context of Greek Higher Education. The Greek university community faces big challenges and has to adopt both new services and new ways of working to address the current needs of the community. The higher education sector has the opportunity to reform its organizations along with the learning and teaching practice. The results will help the university to understand the possibilities of EIS and to address the need of reflecting technological advantages on current pedagogical practices, by offering a better understanding of the needs of users and the potential of EIS in the learning and teaching process. Findings will be disseminated at the local, national and international level within and beyond the Library and Information Studies (LIS) area.

1.2 Research aim

This research aims to critically explore the use of EIS in Greek Higher Education libraries in relation to the educational needs of users. A number of questions have been emerged from this aim as well as from the initial literature review, illustrated in Figure 1.1.

1.3 Objectives

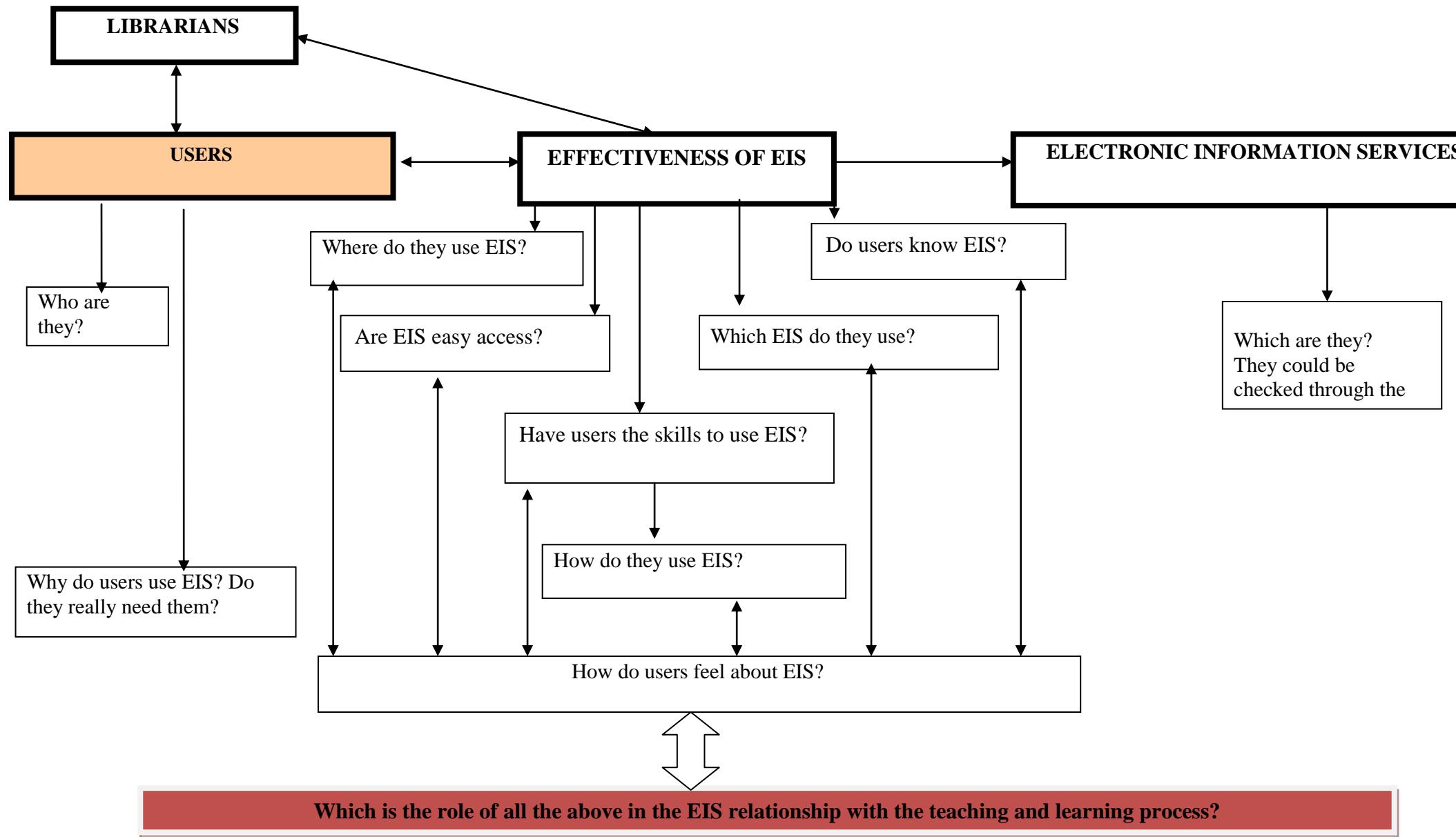
The research objectives are:

1. to explore the provision and use of EIS in the Greek Higher Education.
2. To identify the needs of users in relation to their academic studies and the demands of the educational model in Greek universities.
3. To create profiles of the user population based on the use of EIS in the case study sites.

4. To identify the relationship between librarians and users in the delivery of EIS in the case study sites.

During the research process some tasks had to be completed before others in order to build up a rich picture in the research sites. This research does not follow a linear approach but rather is an iterative process.

Figure 1.1 Illustrates research questions



1.4 Roadmap to thesis

This qualitative study investigates the effective use of EIS within the context of Greek Higher Education and how it may be related to the predominant pedagogical philosophy. The thesis presents the context of the case-study sites and relates the data collection process to that context (Chapter 2). The methodology is described in Chapter 3 providing the rationale and justification of the research process and the methods that were applied in order to complete the investigation. The literature review presents a discussion of EIS in libraries and the significance of a user-centred approach for service delivery in effective and efficient way. The relevance and importance of IT skills as well as the learning, teaching and educational philosophy and its significance in the successful use and application of EIS with respect to current information environment are reviewed in Chapter 4. The data analysis is presented in following two chapters. The fieldwork structure, the first and the second stage of data collection are reflected in Chapter 5 while Chapter 6 deals with the final stage of data collection. The findings of the research and their implications are presented in Chapter 7. Finally, Chapter 8 presents the conclusions of this research along with recommendations and suggestions for future work.

2. Context of the cases and education in Greece

2.1 Introduction

This chapter presents the structure of the educational system in Greece and the context of the case studies used in this research in order to provide depth and detail on the cultural elements and help the reader to understand the situation in the research sites. There are a number of important parameters affecting the relationship between EIS and users, as the learning and teaching process in the Greek context. Other important factors have to do with the use of internet and the adaptation of new technologies in general in Greece, as part of the everyday life of Greeks. Finally, the assessment processes in higher education as well as the students' outcomes, are discussed as areas of deep interest worldwide.

2.2 Education in Greece

In Greece the educational system refers to three distinct levels; primary education, which includes nursery and primary schools; secondary education which includes lower secondary schools and general upper secondary schools; the latter form is not compulsory. Finally, higher- tertiary education includes the Universities and the Technological Education Institutions.

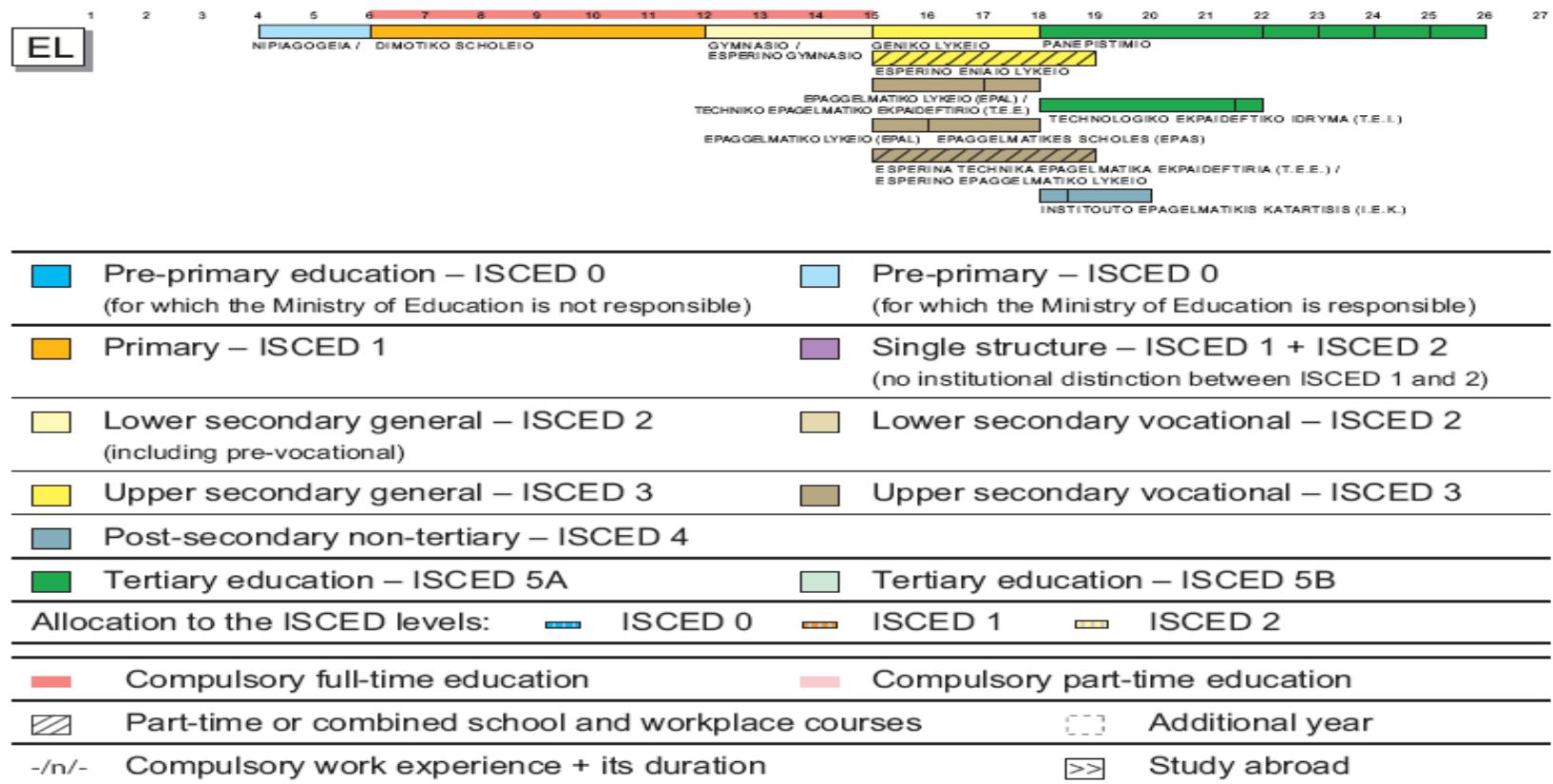
Education is public and without any tuition fees. More details are presented in Figure 2.1. A student may move from the first level to the second one after 7 years while she has to pass the exams given in the end of the second level to move to the third one. Admission of students to higher education institutions depends on their performance at national exams taking place in the third year of the upper secondary school (Law 3455/06; Law 2525/1997 and Law 1352/1983). The process of these exams is based on the ability that participants have to memorise and reproduce the knowledge acquired during their studies. The marks are the only assessment that defines what they will study in higher education. So the prerequisite of entrance to the university is highly dependent on the exam process (Sianou-Kyrgiou, 2008). This policy creates frustration and adds more stress on students and their families. As a result, private schools work on the same lessons simultaneously providing extra

student support. The exams process is based on memorisation and on the ‘one-book’ learning process.

Currently there are twenty Universities and fourteen Higher Technological Education Institutes (H-TEI) in Greece (Christidou, 2006 and Eurodice, 2008). They cover a variety of subject areas. Students have to complete university requirements in order to graduate. Students’ demands are depended on the subject and the specific needs of the university. One of the aims of this work is to identify these requirements and to define the level of students’ need in relation to their educational needs.

Figure 2.1 Greek Education system

Organisation of the education system in Greece, 2005/06



Source: Eurydice.

2.3 Introduction to the Aristotle University- Specific cultural elements

An important role in Greek higher level education is played by the Aristotle University of Thessaloniki, which is the actual and physical location of this research.

The establishment of the University of Thessaloniki was legislated under Law 3341/1925 (<http://www.auth.gr/>) in 1926. Its goal was to cover the students' needs but it also formed a new starting point in the matters of higher education. It is the second oldest in Greece, the first being the University of Athens which had already been operating for almost 90 years.

A fresh impulse towards higher education was a reasonable expectation. The Faculty of Philosophy was the first faculty in the University of Thessaloniki, and at that time it was regarded as an innovation, affecting not only the operation of the Faculty itself - in contrast to the Faculty of Philosophy at the University of Athens - but also the operation and strategic of the entire University of Thessaloniki. The University was renamed as the Aristotle University of Thessaloniki in 1954.

Originally the Faculty of Philosophy (1926) was divided into the following three Departments: a) Philology, b) History and Archaeology, and c) Philosophy, Pedagogy and Psychology. Today the Faculty of Philosophy consists of eight Departments:

- 1) Department of Philology
- 2) Department of History and Archaeology
- 3) Department of Pedagogy and Psychology
- 4) Department of Psychology
- 5) Department of English Language and Literature
- 6) Department of French Language and Literature
- 7) Department of German Language and Literature
- 8) Department of Italian Language and Literature

From 1951 to 1975 the Aristotle University (AUT) focused mainly on the foundation and operation of the Polytechnic School and the Department of Architecture. The university continued to be developed into more faculties and departments depending every time on the current needs and interests. As a result, today it comprises of 41 Departments as well as many other units, such as laboratories, study rooms, libraries,

clinics, etc., which make it one of the largest universities in the country in terms of staff, number of students and provided facilities.

Members of the staff hold either a permanent or a non-permanent academic position (Eurybase , 2005/2006). One of the first decisions that need to be taken was about which group of the academic staff should be included in the research. Due to their important and essential role, members of the permanent academic staff defined one of the samples. The meaning of the term ‘permanent’ is that after a period of three consecutive years in a position, lecturers may apply to be part of the permanent staff of the university (Law 2517, 1997). Thus, the sample includes academics having completed this period. Actually, most of them have been working in the university for a long time and their attitudes and beliefs affect university’s operation.

Usually, students during their studies in secondary but also in higher education, have to participate in exams in order to pass their modules (Law 3465, 2006; Law 2525, 1997; Law 1352, 1983).

2.4 Libraries in the Aristotle University

On 11 July 1927 the Presidential Decree "About constitution of Libraries of the University of Thessaloniki" was published. The Library began its operation in late 1927, on the ground floor of the old building of the Philosophical Faculty, where it was accommodated for the next 47 years. Since 1974, it has been housed in its own building, in the centre of the campus. The first core of the library comprised the books of the previous director of the National Library as well as donations from people or organisations' collections and the market. This library is now the central library of the university.

Today there is a central library while many others, called departmental libraries, operate simultaneously in the Aristotle University. Almost each department has its library while sometimes there is more than one in each of them. These libraries started as small laboratories with documents in order to support seminars and classes, over time they grew to become established libraries themselves. The academic community used to call them ‘spoudastiria’ (study areas) and some of them still retain this name. The manager of the library, a one or two-year post, responsible for its operation, belongs to the permanent staff, working in liaison with members of

the library staff. The academics used to have personal keys of the library and have access anytime, any day. They consider the library to be an extension of their offices and a place of work. Recently librarians are trying to change it in order to achieve better organisational operation. People usually do not like changes; in practice librarians face problems in any innovation they suggest even if involving just a matter of running the library. Although these situations are not easy, due to the technological achievements and the communication facilities, departmental libraries are developing their services, a fact that makes them more independent. All these libraries are directly linked to the Central Library, operating more or less under the same rules and the same policies.

There is very little in the literature about the Greek libraries; the majority of the research concerns the academic libraries. Krikelas (1984) presented the conditions in Greek academic libraries during 1984 explaining the centralized management system in the Aristotle University's libraries. He analysed some very specific problems the libraries faced concerning their facilities, staff and general operation. This picture is not so different from the one presented by Hartley and Trohopoulos (1990).

Technology affects the libraries worldwide. In Greece this process took place after the '90s (T.Q.M.U, 1998-2010). Papazoglou and Semertzaki (2001) have shown that collaboration with libraries of other European countries allowed Greek libraries to enter a new era of evolution and have a share in EU funded projects.

Another important element for Greek libraries regards the use of new technologies which change the library's daily routine. By participating in the EU Community Support Framework (CSF), libraries now have the opportunity to develop their own resource collection, services and staff. Especially for the university libraries, Papazoglou and Semertzaki (1996) describe that the picture has started to change rather rapidly as for the academic libraries, thanks to the funding provided by the EU Second Community Support Framework through a special Action of the Operational Programme for Education and Initial Training (EPEAEK). According to them, the objective of the Action for the Greek Academic Libraries for the years 1994-1999 was to develop and upgrade them. The Action mainly aims to support scientific research as well as the current teaching needs.

Having or lacking funding, affects the academic libraries operation. The Action funded the integrated automatic system of the academic libraries. After that libraries lend books in a daily basis and have improved the access-opening hours. They have electronic collection and provide access to the Internet for all students. Many libraries have started to reform their services focusing on a more ‘electronic’ library by providing abundant information opportunities. Librarians had already identified the need for changes in the libraries context, aims and even buildings (Garoufallou & Siatri, 1997; Kazakos 1997; Mpokos 1998).

Greek academic libraries have the same demands as those meet in the international community while changes in the educational system affect their operation. All these changes are taking place at all levels of library operation affecting them in positive or negative way. Katsirikou (2002) gave a quite generic picture about the library conditions in Greece. She analysed the changes and the parameters that affect the libraries as well as the role of the librarian. According to her the human factor is considered essential. The management role is regarded also as quite important.

Many changes have taken place in Greek academic library practice. Staurou (2001) claimed that there are many changes in everyday context which transform the way of each operation regarding the provided services or management. These developments affect both users and librarians. Electronic information and EIS require special management and clearly written policies. Garoufalou (2008), at the Technological Educational Institution of Thessaloniki, working upon a research about user satisfaction of EIS, he found out that chaos can be caused by unorganized electronic services in the library.

The educational model in Greece does not require any active libraries and any active role of the library in general. There are specific conditions that affect the ways in which libraries are used. Academics who have been teaching for many years consider library as part of their office and use it as their personal library. They belong to the permanent staff on a ‘lifetime’ contract, so they are engaged usually in this role for their whole life. This situation affects definitely their way of working.

Technology is now coming into the university educational process. There is a lack of the needed technological equipment. The majority of the academics are in the middle age or very close to retirement. As was shown by Zontanos (1996), users’

expectations provided by a university library were very low. He described the library as an independent organisation, although its role was not clear in the educational process.

According to the educational system libraries play a supplementary role in the universities. Academic community presents a difficulty to recognise the importance of the library as they used to cover any research need by different means. This picture was a de facto in Greek Libraries until the early 1990s (Katsirikou, 2002). Things nowadays are changing in Greek University Libraries as well as in the education system in general. As students increasingly demand more services and sources, libraries have to help them to accomplish their studies successfully (Tsimpoglou & Papatheodorou, 2001).

Papazoglou and Semertzaki since 2001 had identified gradual changes as the introduction of graduate course-based studies in many faculties and the need for supplementary readings. New developments and trends in the various subject areas are transforming the existing model in Greek universities.

The cost of EIS remains high so in order to improve the quality of services, libraries have established a consortium, the Hellenic Academic Libraries Link (HEAL LINK). It is comprised of the 32 higher education institutions of Greece, the National Library of Greece and the Academy of Athens. The major activities of the consortium are (<http://www.heal-link.gr/>):

- *'The collaboration, via establishment of common policy, in the subscriptions of journals (printed and electronic) among the members, aiming at the rational growth of collections of journals among the partners, the saving of resources and the access in bigger number of sources for covering the educational and inquiring needs of users of the participating Institutions.'*
- *'The creation and operation of Collective List of bibliographic registrations (Union Catalogue) of the Greek Academic Libraries and the use of its records from each member of the Consortium.'*
- *'The joint subscription of electronic sources and services of information, as well as rights of remote access in electronic sources and services of information included the electronic scientific journals.'*
- *'The growth and establishment of models for each nature biblio-economic work.'*
- *'The concern for the continuous education of personnel of the member's libraries.'*
- *'The collaboration in the disposal of material each participating library via remote loan and other methods that they would ensure and facilitate the availability of material among the partners.'*

- *The collaboration with proportional institutions and organisms of interior and abroad for the guarantee of attendance of HEAL-Link in the international evolvements on collaboration of libraries and management of intellectual rights issues.*
- *The cooperation with relevant organizations both domestic and foreign for the assurance of the participation of HEAL Link in international developments concerning library co-operations and management of copyright.*
- *The undertaking of each other initiative that promotes and develops the Academic Libraries of Greece via common activities and initiatives.'*

The role of HEAL LINK is essential in the university libraries operation and evolution. Through HEAL LINK, libraries have the opportunity to provide access to their users in many different services and sources in electronic form and at a lower cost.

According to Krikelas's (1984), the evolution of the libraries is strongly dependent on the educational developments. He argued that changes in university libraries are most likely to come in after the changes in the general structure of the Greek higher education. He stated that:

'It would be tempting to export Western-style academic librarianship to the country but the particular needs of Greece are best determined from within. The responsibility of visiting consultants is to apprise Greek librarians of the options available and to do so meaningfully require some understanding of the current situation' (p. 20).

Conditions in Greek universities libraries are changing rapidly, as happens in the rest of the world. Technology and the emerging ICT facilities affect libraries operation. Apart from that international conditions affect universities in the daily educational practise and also in their libraries' operation. Doufekopoulou (2001) proposed the movement from a passive educational system to a more active one with more demands from students in Greek universities, something that will challenge libraries to support a more demanding user in the electronic environment.

This picture is not straightforward; it differs across departments and subject areas. It is also dependent on their needs including the teaching and learning process. In the Greek context, very little research has been done upon the investigation of the real situations occurring in the university libraries. All these changes require knowledge of

the libraries usage and particularly the EIS usage in the Greek university context. This research intends to fill this gap.

2.5 Case study sites

The Aristotle University of Thessaloniki has a central library and 38 departmental libraries. In some departments, there are more than one library. For the needs of this research, permission for entry was granted after initial communication with the rector of the university. After that contacts made with the managers of the libraries from the faculty of Applied Sciences and the faculty of Philosophy. The rector proposed the appropriate locations according to requirements. The Architecture library (table 2.1), which belongs to the Polytechnics department, and the Philology library, belongs to the Philosophy department; they constitute the sample of this research. Initially a visit was paid to check both sites after exchanging e-mail. In the next visit time was given for familiarising with their specific characteristics and for explaining the entire research context to the librarians.

According to the schedule, the entry to the field was planned in early October but was delayed due to an academic strike for approximately two months. . During the last period of the strike and when the formal negotiations were completed the library and in the faculty of Architecture was the first to be investigated. The experience was interesting because people were initially reluctant to talk about and explain in detail the conditions of the library operation. The researcher was familiar with the environment in a way as she used to be employed in a similar post in the past, but also unfamiliar at the same time because each specific site has a unique character. It was fascinating to discover that many changes had occurred with the EIS now being a big part of these. Building up a friendly, positive and trusting relationship with the staff was one of the first priorities, in order to make them feel comfortable and get as much reliable information as you can. The next step was to develop a relationship of confidence with the participants involved in the case sites without disturbing the daily routine of the operation of the libraries.

GREECE HIGHER EDUCATION
20 Universities and 14 Technological Education Institutes

ARISTOTLE UNIVERSITY OF THESSALONIKI

10 faculties in operation currently which include 44 departments. The university offers library services through one central and 38 departmental libraries. Some department have more than one library.

**CASE STUDY ONE
Polytechnic Faculty
includes 5 departments**

The Architecture department has one library, covers 5 subject areas.
Observation for 2 hours per day for 3 weeks.
Interview 5 librarians, 11 students and 9 academics and 10 tele-interview academics.
Total number: 35 participants.

**CASE STUDY TWO
Faculty of Philosophy includes 8 departments. There is a new library, which hosts the journals. It serves all the faculty users. The researcher observes the place 2 hours for 3 days and interviews 2 librarians.**

Philology department has three libraries and each of them covers a specific subject area

Medieval and Current Studies library's users could use any of the three Philology libraries.
Observation hours per day for three weeks. The researcher interviewed 5 librarians and 10 students, 7 academics and 6 tele-interview academics.
Classical Studies library 1 librarian and Modern Language library 1 librarian and 2 in the new library. Total number: 32 participants.

Table 2.1 The research contexts

2.6 Research sites

2.6.1 Case one

The faculty of Polytechnic comprises of five departments, one of them is the Architecture department. Its library supports 5 different subject areas with approximately 1700 undergraduate students, 120 postgraduates and 100 academics. There are 7 PCs available in the library; while two of them have access to the

university's libraries websites and other internet facilities. In general the rest of them have restricted access only to the on-line catalog. There is also a laboratory with 24 PCs but only 12 of them have access to the Internet and the room is usually occupied for classes for most of the time. The observation of this lab for 1 hour daily for a week revealed that nobody used the library's website. Informal conversation with the staff in charge in this area confirmed that library users were not using these PCs.

Observation of the library was on the following basis: 2 hours per day for 3 weeks. Additionally 5 librarians, 12 academics and 13 students were interviewed on the spot, 10 academics via telephone. The librarians' sample includes the whole staff of this library. A question file, to be filled by librarians with users' questions about EIS, was given to the information desk covering a period of 2 weeks. The research context of the two sites is presented in table 2.1. Furhter information about the participants is available in Appendix 7.

2.6.2 Case two

The faculty of Philosophy comprises of eight departments. There are 3 libraries under three different subject areas: Classical Studies, Medieval and Current Studies and Language Studies. Medieval and Current Studies is the second case of this research. It supports 1854 undergraduate students, 35 postgraduates and 28 academics. Its users are free to use any of them. In this library there are two available PCs with no Internet access; they only offer access to online catalog. It's not easy for somebody to use them as they are 'old'. There is also an available card catalogue. The department has a lab especially for postgraduates where there are eight available PCs with access to the Internet. Users can use them on appointment basis. After facing technical problem, access to the lab is now restricted. There is another lab for undergraduate students where 25 PCs are available but this place is used for educational purposes only.

The faculty is developing a new library service in a separate area. At the time of the fieldwork, almost all the journals of all the departments were taken there. There are 10 PCs with access to the Internet. These services are available to all students and academics of the whole Faculty of Philosophy. The place was observed for 2 hours daily, for 3 days and 2 librarians were interviewed.

In the library for the Classical Studies has 6 PCs providing restricted access to the Internet. A card catalog is available in the same area. In the library for the Language studies 2 PCs are available and a card catalog, again in the same area. Interviews with member of the staff of these libraries revealed that computers were never or rarely used, except for the new one where students come from various disciplines.

The place had been observed two hours per day for three weeks. Interviews were made with 5 librarians in this library, 2 in the new library which offers journals, 1 librarian in the Classical Studies library and 1 in the Language Studies library. Face-to-face interviews were given with 7 academics and another 6 through via telephone. Finally, 10 students were interviewed in the spot. More details are given in Appendix 7.

Thus the research design has been resulting by the nature of entry into the field, the permission that were needed and the context of the research field which has impacted on the design of the methodology as it is outlined in the following chapter.

3. Methodology

3.1 Research design

The basic philosophical question in this research is: “what is the relationship between the educational system- the teaching and learning process- that are used (particularly in the Greek context) and, the electronic information services provided by libraries?”

The research approach is qualitative, as it:

' ...is a process of enquiry that draws data from the context in which events occur, in an attempt to describe these occurrences, as a mean of determining the process in which events are embedded and the perspectives of those participating in the event' (Gorman & Clayton, 1997, p23).

Afzal (2006) argued that:

‘The tradition of qualitative research is as old as philosophy itself. Aristotle, Socrates, Weber, Marx, Durkheim and Giddens are some of the many thinkers who have shaped the philosophical foundations of qualitative research’ (p.22).

He examined as well about the complex phenomena which are taking place in the libraries context due to the information explosion and the technology. He proposed the use of qualitative research in this context in order to understand them.

The theoretical approach is hermeneutic and as such is: ‘...the study of interpretative understanding or meaning, with special attention to context and original purpose’ (Patton 1990, p.3). Glazier and Powell (1992) proposed the use of qualitative methods in the sciences of communication and information. Westbrook (1994) had the same belief: " qualitative research methods enrich and augment the toolbox of LIS research approaches" (p.252) . Furthermore, Brophy (2008) explained its necessary and complementary role in order to achieve better depth of insight in LIS research.

This research aims to explore the real context of the two research sites dealing with the use of EIS and the applied teaching and learning connection in order to provide some insight into this phenomenon. It is user-centred trying to understand the users' needs and their reality and investigates the users' world in the way that was discussed by Dixon et al. (2002) in their work about the necessity to research on users' needs and feelings.

Although the starting point was the design of a questionnaire, work gradually moved to a qualitative approach, as the intention was to thoroughly understand the conditions

in the two sites. The questionnaire was designed to include open questions by providing a well-defined framework during the interview process. The questionnaire itself acts as a tool which leads the conversation with the participant by keeping her/him focussed on the subject.

Qualitative methodology is considered to be the best way to carry out in-depth user-centred research (Lincoln & Guba, 1985). It can enlighten the research area by using ‘thick description’, ‘experiential understanding’, and ‘multiple realities’, as was proposed by Stake (1995, p.37). He concluded that

‘to sharpen the search for understanding, qualitative researchers perceive what is happening in key episodes or testimonies, represent happenings with their own direct interpretation and stories (narratives). Qualitative research uses these narratives to optimise the opportunity for the reader to gain an experiential understanding of the case’(p.40).

In the next stage, the participants’ stories are used to understand the real conditions in each of the sites as well as the participants’ feelings and opinions about EIS.

The epistemology of qualitative research is existential and constructivist. It attempts to describe the conditions and the special circumstances in the research sites. As Stake says:

‘phenomena are intricately related through many coincidental actions and that understanding them requires looking at a wide sweep of contexts: temporal and spatial, historical, political, economic, cultural, social and personal’ (p.43).

The approach is holistic as it involves all sectors of the relevant community within the university, allowing the construction of an account that includes multiple realities and forms a rounded picture based on individual and group testimonies. (Stake, 1985; Hodkinson and Hodkinson, 2001 and Yin, 2002). The holistic case-study method is used to support the aims and objectives by describing and trying to interpret a real life situation. In this case, the focus of the case study was the use of EIS, by particular groups of users within the sites in order to explore questions around the complex situations, relationships and behaviours related to that use. Thus, two case studies were identified and thoroughly investigated for identifying and exploring possible differences and similarities. It was then possible to analyse each case study in detail before performing a cross-case analysis.

According to Stenhouse (1981):

'researchers have turned to case-study in the face of the difficulties which have been encountered in attempting to apply a scientific paradigm of research to problems in which human behaviour, action or intention play a large part'(p.223).

Yin (2003a) defined a case study 'as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident'(p.18). The case-study is considered a suitable inquiring method in library and information services according to Roselle (1996). It can go through a deeper understanding of the issues involved in research site (Afzal, 2006). Moreover, Tella et.al (2008) proposed the use of such research methods in the context of a library. They argued that a case study can offer insight and generate theory as well as informing practice because it provides the basis for a closer integration.

Another important parameter during research is to ensure that all ethical and legal requirements are firmly adhered to. Although at the outset of this investigation the university had not established a specific ethics policy, there were oral and written guidelines by the supervisory team to ensure that all the proper procedures were followed. For this purpose, an email was sent to the university Rector asking to gain access to the field, which was granted for the two libraries. Then, the two library managers were informed via email, in order to organize the research field schedule. A meeting with the manager followed at the case study sites and organized the research schedule. Confidentiality was established by the secure storing of all recorded data and the allocation of coded identifiers to each participant. All participants were given a letter ensuring confidentiality and clearly stating the aims and objectives of the research in order to allow them to make an informed choice concerning their participation in the investigation. The research schedule is presented in the following table.

2002	Start the PhD programme
2002-2003	Planning the research process Literature review-methodology Literature review-subject
2003-2004	Pilot study Data collection- Stage One

2004- 2005	Iterative analysis- Part One Data collection- Stage Two Mid-point
2006- 2007	iterative data analysis – Part Two Data collection- Stage Three Full transcribing and starting data analysis Initial conclusions
2008-	Writing up the thesis

Table 3.1: Research schedule

3.2 Pilot Study

The pilot-study was used to confirm the effective design and appropriateness of the research tools. Yin (2003b) recommended the use of pilot study as it supplies the researcher with feedback on the questions. He also showed that the pilot study and the research protocol are necessary as they allow the researcher to enumerate, beforehand, the processes and the requirements that are followed during the period of data collection while the researcher simultaneously remains open to improvements and techniques that spring from the acquired data and the existing conditions. Perry (1998) had already supported the importance of this process.

Thus, first of all, research aims and objectives were defined. Then, research protocol was designed carefully, and both research tool and research design were tested in real conditions. After the pilot study had been reviewed, the research objectives, research questions and the data collection techniques needed to be examined in response to the findings of the pilot study. The pilot-study for this investigation includes three participants, the open-question research tool (Appendix 1) and the observation research tool (Appendix 2) which reflect the research aims and objectives. Then, a form (Appendix 3) was created to keep track of any questions regarding EIS during the research period. The possibilities for an inductive approach to the problem along with a parallel study of existing theories in the subject area, where exploited a task that was achieved with the revision of the literature after the pilot study, which tested the questions that were used during the interviews and observation, a methodology proposed by Perry (2001).

The next step was to pilot the research process, a task that requires by the researcher to be open-minded, flexible and creative in real-life conditions. The pilot study was undertaken in one of the departmental libraries of the Philosophy Faculty, the Pedagogy department. It consisted of a one-day observation in the library area along with three interviews, one with a student, one with a librarian and one with an academic. The interviews were then transcribed and analysed. Questions were reviewed and finally, the EIS list which was given to the three participants supplemented with additional information.

The pilot study raised a number of issues regarding the availability of computers in the library area. For example, the location and availability of computer access points within the library as there were known not advertised. There were two personal computers (PCs) with access to the electronic library catalogue. These two computers required users to have a special password. There was also a card catalogue in the same room. Users prefer using the card catalogue rather than computers. The librarian's testimony revealed that there were not enough students using EIS. On the other hand, academics are qualified in IT skills and they have access on those computers. Users did not use Internet in the library and they did not have access to their personal emails. The student participant confirmed that generally students are not very skilled and they are not familiar with EIS.

In this way the pilot study data was used to amend the research design and review the research aims and objectives. It became evident, even in the early stages of the pilot study that research aims and objectives as well as research tools needed to be amended to reflect the current reality and complexities of EIS use and user behaviour and expectations. Users do not have the chance to use the library for any other service except the library's services. Access restriction policies are strongly related to the limited number of computers.

3.3 Data Collection Techniques

Interviews and observation are the data collection techniques which are used in this research in order to investigate the relationship between the different groups of the participants as well as to provide a description of their worlds. Interviews allow users to talk about their personal experience. They also help the researcher to understand

the conditions in the research sites. Observation is used as a tool for building up a picture of the research sites. The daily presence of the researcher in the libraries helped her to gradually become part of them. Thus, in more details, the tools that are used are the following:

- in-depth *interviews* with all the parts of the sample as ‘... through an interactive conversation the research issue or range of issues is explored in as much length as necessary or available...’ (Gorman & Clayton, 1997)
- *notes of the observation sites*, in the library, where the users have access to the EIS. The gap between the sample of the students and the sample of the academics, with regard to the process of observation, will be covered with the use of the Critical Incident method
- *the question file*, which includes a number of questions for the EIS--kept by the librarians and the researcher, constitutes another document of the data collection process, and
- *telephone interviews*, which provide an additional academics’ sample. They were designed in a way to get the best information possible.

3.3.1 Interviews

The design of the questions that constitute the basic directions of the discussion during the interviews is a complicated task. It requires flexibility to apply the technique (Westbrook 1994). New arising questions during the process were formed using the information that was collected from the previous interviews. The researcher entered into the field of research in order to become temporarily part of this in an unobtrusive way and recorded the experiences from what was happening in this real-life context. All the interviews were tape-recorded. Each interview was partially analysed, before proceeded to the next one. This tactic was followed for all the interviews across the groups of participants. During an interview two different forms were used. The first form included the list with all the current available services on the library web site along with definitions of the main terms used in the research (Appendix 4). The second form included a list of potential information sources, where the participant had to ‘tick’ the frequency usage in a Likert scale (Appendix 5).

Finally, interviews based on open questions were given to each participant. The results of the interviews, as was expected, provided a plethora of rich qualitative data which helped the researcher form a clear view of the real situations in the research sites. The next stage was the analysis of data. The analysis of each interview affected the next one, creating new possibilities. The questioning process was affected by this new information. Decisions were made about the validity of the given information and for the next research steps.

3.3.2 Critical Incident

Observation of the student sample, whilst they were using the EIS, was an essential part of the research process. The same practice could not be applied in the case of the academics. The first reason was that the place of the interview was unpredictable. Also computers for delivering the process were not always available. Such difficulties forced the researcher to adopt the Critical Incident method, which as Radford (1996) admits ‘is used to gather and analyse the most memorable experiences, not necessarily the most recent’. The method is proposed particularly for information behaviour studies by Urquhart et al (2003). They argue that the CIT method will encourage participants to tell their stories, which lead to valuable findings.

Academics were asked to describe one of their searches using the library electronic services. In practice, this technique helped the researcher to build the academics’ world although during the interview the participants had already narrated their most memorable incidents and had discussed them. People tend to speak about their more memorable incidents when they have the chance to do it and when the interview is like a friendly conversation.

3.3.3 Observation

Unobtrusive observation has been used to record the conditions in the libraries. Boote and Mathews (1999) examined all different types of observation and proved its importance as a technique of data collection with greater possibility of avoiding the bias than any other method.

Observation is an important method of data collection because it can be used for collecting evidence which otherwise would be difficult to be accessed. It is a quite

common research technique in human research and sciences. It can produce direct information of the nature of experience in specific environments.

Observation has been a tool in the first data collection phase although in practice users in the library do not have access to all of the EIS but they still have access to OPAC. The observation process follows the observation protocol (Appendix 2). Data from the everyday observation were used to record the daily operation in terms of participants' behavior regarding the use of EIS.

3.3.4 Question file

During this process librarians were asked to keep a question file which includes users' questions about the EIS. In practise it is a document created using the data of the collection process. It provides information about students' needs. The tool has not been quite successful because students in the library of Architecture had some special questions which enriched the rest of the data while in the library of Philology they were not using EIS at all. Moreover, they were not asking for more information at all.

3.3.5 Telephone interviews justification

Telephone interviews were not intended to be part of this research. After the first and the second stage of data collection, it was decided that information collected through this technique will be included, considering it as appropriate in order to find out the exact incidents in research sites. This final stage of data collection is considered essential to build the real picture in both sites as well as to give answers in the basic research question.

Telephone interviews are quite common in customer satisfaction surveys and are applied in various disciplines. In LIS it is proposed as research tool for library managers (Calvert & Pope, 2005). It is used also in quantitative researches but also it is proposed in qualitative ones (Chappel 1999).

The advantages of the technique are the direct response, the short duration and the low cost. According to Ward (2001) another benefit is the participants' spontaneity. McGuckin et al. (2001) believe that 'the telephone permits for more contact attempts and a great variety in times contacts are attempted, with a higher response rate as a

result.' On the other hand, disadvantages of the technique include the issue of high cost in several occasions, or difficulties to reach some participants by telephone. Besides, quick responses are not necessarily the best possible responses (Calvert & Pope, 2005).

The structure and the content of the telephone interviews were data-driven. The data analysis at the beginning of this research was used to define the telephone interviews' requirements. They latter have been designed to cover all the necessary information which comes from academics, the way they teach and the way in which the students learn. The purpose and the reason for interviewing them had to be clearly stated. An atmosphere of friendliness and trust was necessary in order to achieve their participation and to proceed with the interview. All these had to be achieved very quickly. One of the difficulties was that the researcher could not see the participants face to face. As a result, evidence of their impulse reaction may probably is missing. So the accuracy of their testimonies could not be checked in no way other their voice response. Chappel (1999) in her work came to the same conclusions about telephone interviews.

3.4. Triangulation

Triangulation of techniques and sources is the control of drawing the conclusions with the utilisation of different methods of data collection. Particularly, the triangulation of sources is the verification of the same information by crosschecking different persons' opinions (Williamson 2000; Yin 2003a).

The method is used to support the findings of the current research by collecting data from a variety of sources and using a variety of methods. Triangulation is achieved by applying several different approaches to examine the problem: in-depth interviewing, unobtrusive observation, literature review and by checking and collecting data and information from different sources.

3.5 Trustworthiness

Research should establish its scientific quality. Lincoln and Guba (1985) as well as Riege (2003) suggested that qualitative research must be trustworthy in terms of being

credible, transferable, dependable and confirmable. In this research credibility was achieved by using triangulation techniques across sources and methods, persistent observation in the field (four weeks in each site) to the point of information redundancy, peers' debriefing on a regular basis during research design as well as member checking with participants.

Riege (2003) linked transferability with the development of the case-study database during the data collection phase. This database includes rather a thick description by using specific procedures for coding and analysis such as symbols and signs. The constant comparative method is the tool of data analysis. This was an on-going process and was completed at the writing-up stage.

Dependability is demonstrated by auditing during the research design phase. It involves the examination and documentation of the research process occurred in the design stage, through data collection and data analysis. Presentations of the research process in the school conference events as well as the supervisor's advice are used to complete the auditing.

Confirmability is strongly associated with the audit during the data collection and the data analysis stage. Participants confirm the interviews context. Ruyter and Scholl (1998), Eisenhardt (1989) and Yin (2003a) have explained the importance of constant organisation of inquiring process. This research adopts a well-defined structure of the research process by keeping detailed records during all its stages.

3.6 Participants

Qualitative research looks for the individuals' reality by trying to achieve as much participant variation as possible. Research aims are targeting to a thorough investigation of EIS effectiveness in both sites by discovering its association with users' real needs. A careful choice and a categorised sample are required in order to make sure that all possible opinions would be included. Patton (1990) as well as Ruyter and Scholl (1998) have shown that the representativeness of results according to the subject of research and not the size of the sample is what really counts. Perry (2001) had shown that the strength of qualitative research lies more in the information richness of the selected cases than in the number of the participants.

Thus, a purposive sample has been selected to provide valuable insight. Libraries and labs were the locations of the actual research. The required time was defined to be one year. During this period students were using the library for their assignments. They also were studying there for their exams. Participants are students, librarians and academics. Therefore:

- Students, as they are the main libraries' users, have been chosen in order to achieve a complete picture of the EIS usage, by selecting representatives from both genders and from all the years of the course.
- Academics use the library as well. They are the most important part of the university community and they have great effect on students use. As in the case of students, the sample consists of both males and females with basic IT skills. Any information derived was provided by the librarians.
- In the case of librarians, as many interviews were organised as possible in order to achieve information redundancy. Their collaboration and willingness has to be mentioned because all the questioned librarians participate in this research. All the permanent staff as well as the staff having an important role in the library operation created the sample of librarians.
- The last part of the participants includes two academics from each subject area in each research site. Participants (males/females) should have an email address. After the first telephone contact, most of them accepted to be interviewed.

A representation of both genders in the participants group helped to avoid the gender different behaviour on computer usage and particularly on the EIS usage (Papastergiou & Solomonidou, 2005; Christidou 2006). More information about the participants is available in Appendix 7.

3.7 Data collection and data analysis

Investigation was based upon three different data collection stages carried out in the two case study sites. Part of this process was spent in piloting the study before the first stage of the fieldwork as was mentioned in the previous section.

Thus, the first year of the PhD process was spent on tasks such as the literature review, methodology and research techniques. The second year started with the pilot study followed by the first data collection. The researcher entered the field and

collected the first data set which was analysed partially in order to allow for the iterative analysis process to begin and feed in to subsequent data collection activities. Between the first and the second data collection stage, the researcher had to exit the fieldwork because there was a strike. Semester exams had already started so students and academics were not available. Then, the next spring, the data collection started again and stopped in the end of the semester. After the first two stages of the data collection, the data were analysed. The preliminary results showed the way to the third (last) data collection stage. The whole process is presented in Figure 3.1.

Analysis and further data collection is an iterative process. The qualitative data analysis is a complicated task (Patton, 2002). In this research, the data collection process was very slow as lots of data were coming available. Data entered into the NVivo software for the analysis, data classifications, defining associations between and among categories of data as well as conveying the message in the writing-up stage (Baptise, 2001).

The intention was to explore and describe the complex realities of the two case studies; it was a descriptive and exploratory investigation into the real worlds of the research participants. The nature of this research demands a clear description, explanation, and understanding of the phenomena under investigation. The research strategy and objectives defined the approach taken to data collection and data analysis.

During the research fieldwork and after each day in the field, data were partially analysed. Recorded interviews were listened carefully and matched against the observation notes in order to recognise important ideas and begin to understand each participant's personal 'world'. By following this procedure, the researcher was able to understand them and construct this knowledge gradually, step by step. Impression and ideas were written as memo's and used during the analysis in the way that is proposed by Dey (1993). Data have been read again and again in order to identify the labels and the context of the constructed categories. This iterative process during the data collection as well as the data analysis process had a result on the research context. In this way, a new data collection stage added in order to get into depth in the research sites. The process followed was the same as before, where new codes were identified in NVivo. Next the codes were translated into categorical themes.

Patterns, themes, and categories do not emerge on their own. They are driven by what the researcher wants to know and where she was focused. Moreover, as Srivasta and Hopwood (2009) have shown the researcher in the role of the inquirer

‘...interprets what the data are telling her or him according to subscribed theoretical frameworks, subjective perspectives, ontological and epistemological positions, and intuitive field understandings.’ (p77).

They argued that the aim of the iteration:

‘...is at the heart of visiting and revisiting the data and connecting them with emerging insights, progressively leading to refined focus and understandings’ (p77).

The collected materials were sorted using categories and were closely examined for isolating any meaningful patterns. The themes were both inductive and deductive because they were coming from the data but also from researcher’s intention and interpretation. After that, the main categories were divided into subcategories based on the collected data, achieving a detailed analysis by using the NVivo software (Appendix 8). In the meantime, many categories had been created, during the data analysis phase. Some of them were combined to larger categories based to their context. Such processes took place more or less in parallel. They were data driven, producing a great amount of information and helping the researcher to identify the emerging themes.

The data analysis process was completed step by step. The information was collected and synthesized. A part of the subject tree is presented in Figure 3.2. The above process has been previously described by Strauss and Corbin (1998) as open-coding, axial coding and selective coding in order to develop grounded theory.

Figure 3.1 Research process diagram

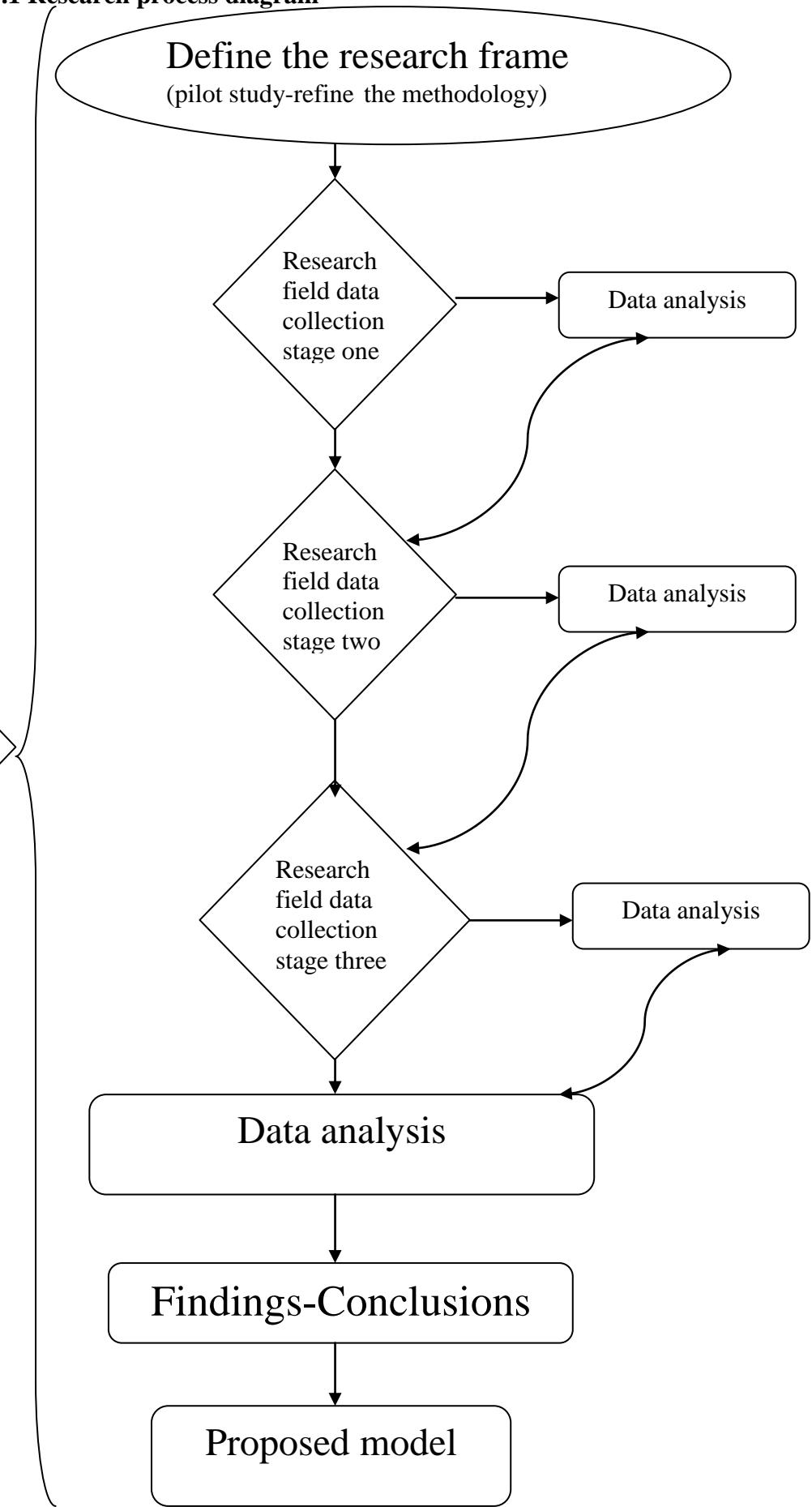
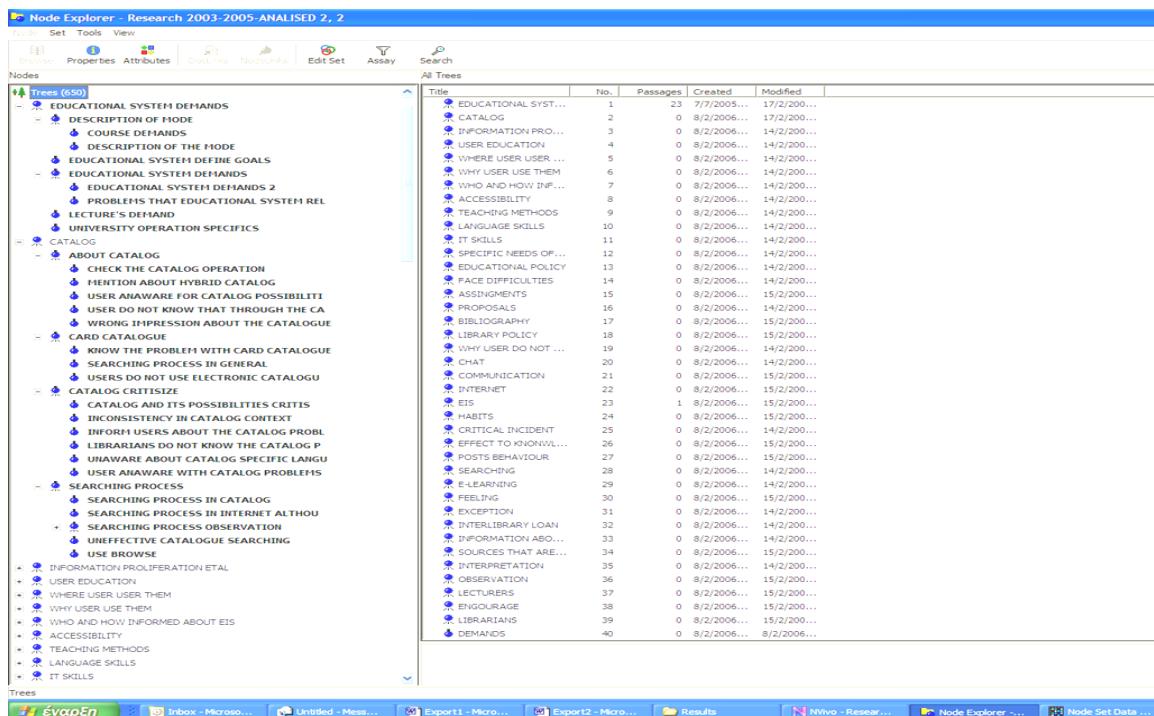


Figure 3.2 Subjects tree in N-vivo software



3.8 The role of the researcher and research limitations

An important parameter in this research is the researcher itself and during the research process. The main intention was to be part of the research field, to understand and present the research context in a trustworthy and reliable way. For this purpose, she gained the entry to the field through a series of applications to the Rector.

The obtrusive observation technique was used for collecting data. The researcher remained in the field for a long time. People got accustomed to her presence and their behaviour continued to be the normal one. As a result, she had the opportunity to talk to the participants in an informal way. Also, research itself was driven by the collected information, gradually, as the information was coming after each interview.

During the data analysis phase, every sentence said by the participants was analysed. The data analysis process was a very hard process with lots of information. Simple categories formed larger ones. Research was kept on the participants' 'worlds' but also interpreted them against the literature review findings as well as according to her personality. The whole process is data- and, literature-driven. In qualitative research as this one, researcher's personality and personal choices affected the derived data interpretation.

Another basic parameter in this research was the role of peers and their help during the fieldwork and the data analysis phase. In this way, participants and informal discussions on the field helped the researcher to immerse in the field and be actually part of the field.

Although this research has been carefully conducted, meeting the aims and objectives, it presents some limitations, as every research study does. It is qualitative research, designed to explore multiple realities which are time- and context-bound and therefore not intended to be generalised to the wider context. Lincoln and Guba noted that ‘the trouble with generalisations is that they don’t apply to particulars’ (1985, p.110.). This research is concerned with ‘the particulars’ and aims to provide an insight and understanding which could be built upon by further investigation.

The research sample was small. It could be extended to more sites and participants in order to support the relevance of this investigation to the general situation in Greek universities’ libraries. It is always possible that future research may produce and interpret new data which have not been identified in this work. There were time constraints which, in different circumstances, could probably produce different conclusions and the data collection field could be extended. Furthermore, this research could not lead into generalisations or to support a new theory. It is descriptive and interpretive so it could not support that its findings could be generalised according to Hodkinson and Hodkinson (2001).

4. Literature Review in EIS

4.1 Introduction

The technological revolution has greatly affected human life over the last century. This revolution has changed the way of life but also the way of the information provision as well as the learning and teaching process. Research process has also changed. Academic and university libraries around the world face many challenges in terms of their operation, services and users' profiles. Their services and sources are now more complex than they were in the past because of the technological breakthroughs. Libraries face many changes because of the technological advance; their role has been deeply affected. Years ago, Corrall (1995) predicted: 'the way that higher education library services are viewed, planned and managed must change radically if they are to survive and thrive in the future'(p.35). Stronger management and more confident involvement in institutional planning and organizational changes are necessary. At the same time Clausen (1996) concluded: '...only natural intelligence will be able to cope with the enormous task of filtering and distilling usable and useful information needles from the internet haystack'(p.7). Akeroyd (2001) described the general characteristics of the future academic libraries and reached the same conclusions. Reality proves that libraries survive but their operation has been transformed and become even more complex than the above authors predicted. Kichuk (2010) confirms that information in academic libraries today is increased rapidly.

The cornerstone of education and research are the academic libraries. They have the mission to react and to become part of the complicated and complex technological services. In their paper Poll and Payne (2006) presented the libraries' challenges in terms of their services. They argue that nowadays libraries try to find a way to prove their influence on user competencies and skills. Another crucial factor is the cost of all these technological facilities and services; it is quite high so they have to present evidence in order to achieve sufficient funding. The libraries' impact on the academic community and their learning and teaching is under investigation because of all these changes. The academic library evolution is more important under the present circumstances. The role of a library and its services could influence academic achievements and effective knowledge.

The impact of online resources and information technology on the user community has been presented by Hiller (2002). He described how online information resources and information technology as well as their increasing influence, change the way in which teaching, learning and research is done at the University of Washington. The pace of change is accelerating and the impact on libraries and users is profound according to this paper. Morgan and Atkinson (2000) argued about the libraries and their future and they promise:

‘Our view is that such developments, whilst clearly powerful agents of change, are a means to an end and that the academic library is fundamentally an effective support service whose major strength lies in the quality of the staff who provide that service’ (p.453).

Moreover the multidimensional community of a university asks for evidence which supports the important role of the library. Indeed, libraries try to prove that their role is important and their operation is vital to the university. What students learn in the universities and how they are affected by the new services are some of the questions which librarians should answer. Students’ outcomes are under investigation in a global level; Libraries carry out research on this field in order to prove that their operation can make a difference on the users’ knowledge. From one point of view, libraries have now a big amount of EIS. On the other hand, they have to prove and support their request for more money. They have already struggled to provide them. Now, they have to promote and support their usage (Cronin and O’Brien, 2009).

Academics and students are the library users in the university community. The students follow the academics’ requirements and orders (Adikata, 2006). The academics represent the university demands and can affect students’ attitudes. The EIS are important services if they are used in such a way. Therefore, the librarians have to persuade academics about the importance of EIS if they want to have usable EIS and continue their services. They offer a variety of searching environments, a diversity which is confusing for users (Carlson and Yatcilla, 2010). A few years ago Biddiscombe (2002) described the changes in higher education and libraries in the UK : ‘it is a government imperative to increase the percentage of people who have a university education and, in addition, there is an emphasis on the concept of lifelong learning. To achieve these policies enrolment growth has been achieved by reducing the resource available for each student and stretching facilities through demanding ever more ‘efficiency gains’’ (p.229). Greek government is moving toward the same

direction now. Statistics show that the number of Greek students who continue studying in the third level of education has increased radically over the last years (Ministry of Education and Religious Affairs, Culture and Sports). A library serves a specific community with specific needs. The classroom, the teaching process and teaching methods have an effect on the library and its services usage. Changes on the curriculum and on educational programmes are linked with them. The library's role is defined by the needs and characteristics of the academic community (Brophy, 2000). Meanwhile, another important issue is the way of students' learning. Learning styles and learning processes are areas on which research flourishes.

4.2. EIS in libraries

EIS proliferate while users are enjoying more facilities in terms of the EIS existence. The question remains: what is the real situation in libraries? Research has shown that librarians try to provide users with an effective and useful service. So they look into their information seeking behavior in electronic services but also their general information seeking behaviour, check the EIS usage and find out emergent problems.

4.2.1 Information seeking behaviour

Information seeking behaviour and information searching behaviour (ISB) has been the fields of research in many different disciplines (Urquhart and Yeoman, 2010). In the past, people had to travel far away to find what they wanted in order to complete research. Nowadays there is a lot of information available on the web. Information seeking behaviour has changed as well. Information scientists pay considerable attention to this area. They try to check their services effectiveness. Another area they try to investigate is how to build better information systems and create more user-friendly systems. As Thapisa (1996) has shown, the information seeking is a function not only of awareness of the possible existence of documents (Deng, 2010). It is also the awareness of their availability and accessibility. The area of information seeking behaviour is a quite wide area. Case (2006) reviewed the information retrieval previous research and supports the idea that information behaviour is more popular than ever. Both individuals and society have come into focus, resulting in more attention to the actual context and social influence. According to his opinion

researchers make more effort to ‘get inside the head of the seeker’, more time spent with individual informants, and greater depth of description overall.

Kuhlthau (1991) described the information searching process from the user’s perspective as revealed in a series of studies:

‘... the ISP is the user’s constructive activity of finding meaning from information in order to extend his or her state of knowledge on a particular problem or topic’(p.361).

She reported the idea that the information searching process (ISP) is the user’s constructive activity of finding meaning from information (Kulthau, 2004). In order to extend his or her state of knowledge on a particular problem or topic develop special information behaviour. She also states about her research:

‘...the uncertainty which initiates the ISP causes confusion and doubt and is likely to be accompanied by feelings of anxiety. These feelings are a function of constructing meaning and are natural in the ISP... User uncertainty may be anticipated by systems and intermediaries in order to improve information provision in early formative stages.’
(Kulthau, 1991, p.370).

The users’ uncertainty seems to be a negative parameter during their information seeking process but can be productive as well.

Kulhthau’s model (1991) has been used to research on users’ behaviour in many scientific areas. First, Isbell’s and Kammerlocher’s (1998) research has been based on Kuhlthau’s model. Their work cover cognitive and affective parameters in information seeking behaviour and implements the results in an instruction programme with a reference service process. They conclude that: ‘... in the reference service the model is not so useful’ (p. 39) while ‘in instruction process helps participants to understand students’ confusion and uncertainty’ (p.39). Also D’Angelo (2001) has used Kuhlthau’s model and presents an Integration Information competencies project which had great influence on the final university policy. The research is an experiment upon students searching strategy assessing the effectiveness of the program within pre- and post-techniques and rubric. The research reveals that there seems to be a basic lack of understanding of the types of sources available so they do not understand how they could contribute to expand knowledge on the topic. Her research looks for evidence of the EIS effective usage. It reveals that: ‘...in a more cohesive and seamless presentation of information competencies. Integration of the competencies into the coursework provided timely and relevant learning of skills’

(p.288). The library and the faculty continue their cooperation in order to increase and improve the instruction and the assessment methods they used (D'Angelo 2001).

Fainburg (2009), in a theoretical article about Kuhlthau's ISP-model and Dewey's problem solving model, concludes that both consider as learning process. They both consider that seeker has to be focus on during the research while Kuhlthau pays attention to the feelings of uncertainty during the ISP while, Dewey finds only that problem solving initiates uncertainty and perplexity.

Ellis and Haugan (1997) have contribute to the research of information seeking too. They have concluded that:

'...although there were differences in the features of the information seeking patterns of the research scientists and engineers, the behavioural characteristics were similar; and the study identified identical or very similar categories of information seeking behaviour to those of previous studies of academic researchers' (p.384).

Moreover their study identifies identical or very similar categories of information seeking behaviour to those of previous studies on the same sample, the academics. Their Information seeking model includes the following stages: *Surveying, Chaining, Monitoring, Browsing, Distinguishing, Filtering, Extracting* and *Ending*.

Wilson (1999) has done a lot of work on information seeking behaviour research. He produced an information seeking model which he improved in 1999. In his 1999 article he reviews the status of models of information seeking behaviour and tries to discover the relations among them. He believed that the various models of information behaviour, information-seeking behaviour and information searching represent different aspects of the overall problem and they are complementary. He regarded that the view of information searching is a complex process. He considers it as part of the broader perspective of information-seeking behaviour, and information behaviour in general. He also suggested that both Kuhlthau's stages and Ellis's characteristics can be related to his proposed model. Meho and Tibbo (2003) worked on the information-seeking behaviour of social scientists by using the Ellis model. They agreed with Wilson theory and used it as a complement to Kuhlthau's. They keep and analyse their result through the Ellis stages although they keep on mind the important information from Kuhlthau. The research concerns the information seeking behaviour of social scientists studying stateless nations. They confirm Ellis's model

and supplement it with new features: *accessing, networking, verifying, and information managing*. They identify that:

'Many of the study participants reported access problems as barriers to using information. These participants indicated that because of these problems, they are required to seek and use other types of materials, locate and visit different places where relevant information might be found, and/or travel overseas to the location of needed materials' (p. 583)

In their work they have shown that, when access to relevant or potentially relevant information or sources of information is not possible, researchers try to use alternative sources or methods. Then the accessibility and networking development could affect the information-seeking process and should be investigated further. Furthermore, they identified four interrelated stages in their information seeking behaviour: searching, accessing, processing, and ending. Thus:

'... when access to relevant or potentially relevant information or sources of information are not possible, researchers try to use alternative sources or methods' (Meho & Tibo, 2003, p.585)

Makri and Warwick (2010) have searched the postgraduate level of architecture students. They find that students are very demanding users group. Their needs are different and more complex. Their research is focused on the users' needs and reports the importance of carefully electronic source design. Vezzosi (2009) worked also on this topic, especially on postgraduate students' needs and their progress during their studies. This research refines the Ellis model as well. Blair (2003) worked upon the use of natural language in information retrieval. He proved that it is quite complex to say in words what to want and users can not probable express what they want. This complexity is increase in electronic information environment. Liu and Croft's (2004) language modeling approach was initially developed for ad hoc retrieval and found to be very effective. Soon after, successful applications of this approach to other retrieval tasks were reported, including relevance feedback, distributed IR, cross-lingual IR, quantification of query ambiguity, and passage retrieval.

The information seeking behaviour has to be examined by librarians because it could explain user' attitudes and their reaction toward the electronic services. Mills and Bannister (2001) argued that:

'...confident, all-knowing information or library user is the exception rather than the rule. There are many typical library users. A complex mixture of motivators and demotivators influencing information-seeking behaviour was found. We believe that it would be valuable

for library managers to improve their understanding of what can be changed to motivate clients to make better use of the library. Such changes might be by way of altering services to meet the expectations of clients more closely' (p.168).

Moreover, they believed that: 'An understanding of image, what motivates and demotivates library use, and having a tool to assess image we believe will facilitate this process'(p.168). Spink et al. (2002) worked on the human behaviour during multitasking information seeking behaviour in IR systems. They analysed the reasons and the process through multi data collection studies. They found that:

'As the complexity of information structures and problems increases, more complex human information processes and more effective IR technologies (Web, digital libraries, etc.) are required to identify effective human information behaviours and provide an effective service'(p. 651).

Therefore, that there is a need for a theoretical framework and models of human information behaviours and interactions with IR technologies (Spink 2002). Human tasks as well as demands are getting complex due to the complexity of the provided information and of the various forms in which it is accessible. Spink supported the idea of developing a model of human information behaviours and interaction with Information Retrieval technologies. Moreover, information scientists should provide users with more sophisticated tools. Sugarman and Demetracopoulos (2001) have proposed the use of two techniques for information retrieval research which are: the systems thinking/action research and the usability techniques.

Researchers talk about the new theories on information seeking behaviour in the digital environment. Most of them propose a new typology of digital users. They have found that users seldom penetrate a site in depth but: 'tend to visit a number of sites for any given information they need and seldom return to sites they once visited.' Human behaviour is an issue under serious scrutiny because it could have a great impact on those involved with the deployment of the provided information.

Rozic-Hristovski, et al (2002) concluded that there are groups of visitors having similar needs and interests. The essential knowledge of the user information seeking behaviour and their navigation habits can significantly improve the website's design and content increasing thus its efficiency and effectiveness. Vakkari (2003) presented various aspects of information searching which are deeply rooted in the process of task performance. In this research it is strongly supported that the information needed,

and search tactics used (including the choice of terms and operators, as well as relevance judgments) are systematically linked to the stage of task performance. However, the findings show that understanding of the mechanisms that link characteristics of tasks to search activities are both tentative and limited. Thus, the task-based information searching is a highly complex process in which several factors interact with each other in order to support Vakkari's theory.

Chowdhury (2003) presented the efforts on the field of natural language process in order to achieve better information retrieval. She tested the software which was developed in order to make the information more accessible to the users. Her review proves the complexity of this area and the demanding conditions. Spink, et.al. (2008) presented a paper in which they report the importance of multitasking in the cognitive and information sciences. In advance, they argue that there is a need for further research on multitasking, particularly within the context of information behaviour.

Students feelings reflect on the way the use EIS. Balatsoukas and Demian (2010) have shown that users perform better and are more satisfied when the prototype system presents only relevant information in context. Users want to have access on the information quickly on the screen and do not like spending hours to identify the required information. They also have shown that researchers analyze the characteristics of different database and report that users are more satisfied, fell more confident, and find it easier to judge the relevance using the RIC interface because this interface provide contextual information for each retrieved item and also display only the relevant information in the search results. The findings of this work prove that the context was more important for the completion of complex tasks (e.g., decision-making tasks) than for fact-finding tasks. Furthermore, they show that participants' performance has been increased in terms of time spent to perform a specific task. Increased was found also the level of their satisfaction of using the RIC interface as it presents only the relevant information *in context*. Xie and Colleen (2009) have investigated on users help-seeking and factors that lead to these situations within the context of searching digital libraries. This study demonstrates that people, do engage in multiple types of search strategies while they need help to achieve the search strategies. As well as that the factors that affect the information-retrieval process and past experience of participants in using other types of IR systems also are

responsible for the help-seeking situations. In this way they offer insight for the improvement of interface design as well as help mechanisms of IR systems.

The user interface in digital libraries affects not only the way that they are used but also it can affect users information behaviour. The original findings of Gwizdka and Lopatovska (2009) explained how people who use less effective search strategies also felt less lost during the search. Feeling less lost may be partially explained by the low ratio of revisits, so it is possible that people using this strategy feel less need to revise their searches because they believe that they can find information by following links between related websites. Searchers who spent more time on a similar search also visited more pages in total, visited more individual results pages, and entered more queries. The authors also examined the role of subjective variables in the information search process in an online environment of the World Wide Web. (Google, Alvis Wikipedia). They confirmed previous research in the field but also they suggested that better mood and state of mind before and during the search correlates with better mood after the search, but also correlates with worse performance on the search task and lower satisfaction.

Fisher and Julien (2009) have reviewed researches on the field of user information behavior, focused on the international nature of the information behaviour community supporting that it has spurred the field's conceptual growth. They encourage researchers to be more accurate and concentrate in scientific terminology in their researches. Moreover, there is an increasing attention paid to theory, according to Case (2006). He considers that this is a sign of maturity in the investigation of information behaviour. This area is developed very quickly and directly linked with technological development.

4.2.2 Search strategies in different disciplines

Another interesting point in the literature review of EIS today is the information behaviour that researchers identify in the context of different disciplines (Tahir et.al. 2010, Wu & Chen, 2010). Ileperuma (2002) examined the academic researchers' behaviour and their general search habits. The article gives a picture about their attitudes: 'arts scholars do not have a tendency to delegate information gathering and

the information-gathering behaviour of pure scientists shows that the involvement of the ‘invisible college’ is prominent’. The author concluded that:

‘The availability of electronic media such as databases, both online and CD-ROM, Internet facility and online access to local databases is likely to have a remarkable impact on the information-gathering behaviour of academic scholars’ (p.30) .

Differentiation in various disciplines and their information seeking behaviour has been the subject of relevant research in Greece. Siatri (1998) studied the scientists’ information seeking behaviour in the electronic environment in a Greek library. Her research was focused on the electronic information resources and information communication facilities, especially those located on the Internet, examining cases where they have an impact on computer scientists in terms of communication, exchange of knowledge and information seeking behaviour.

Whitmire (2002) in his work has included elements regarding the sciences division and interesting information about their different information seeking behaviour patterns. He applied a model (called ‘Biglans’) to examine the undergraduate students’ differences in the information seeking behaviour. He found that:

‘under-graduates majoring in the soft, pure, and life disciplines engaged in more information-seeking activities than undergraduates majoring in the hard, applied and non-life disciplines. In addition, there were fewer differences between the information-seeking behaviours of undergraduates majoring in the life versus non-life disciplines. The most differences in information-seeking behaviour patterns were between undergraduates majoring in the pure versus applied disciplines. Social sciences majors engaged in more information-seeking behaviour’ (p.636)

A study by Suarez-Balseiro and Sanz-Casado (2001) showed that:

‘In the case of the breakdown by faculties there is a substantial difference between the profiles for Social and Legal Science faculty academic staff and students and library staff on the one hand and the rest of the categories on the other. In the case of the analysis by departments, the major differences in database usage are found between Law–Case Law, Economics and Engineering on the one hand and all other areas on the other’(p.187).

In another article, Hiller (2002) presented the results of her survey, noting; significant differences by academic area among the user community. According to her, faculty and graduate students in the sciences-engineering and health sciences were more likely to use the library remotely rather than pay a physical visit. User prefers to view desktop delivery as the highest priority for library support, and value journals (print

and electronic copies) far higher than other resources such as books, archival resources etc. In a project named Jubilee, funded by JISC, Banwell et al. (2004) have shown that there are major changes in information behaviour as a result of the advent of the electronic age. Also they supported that there is no real difference in impact between different categories of information user. Nicholas et al. working in the same path, have found that a distinctive form of information-seeking behaviour associated with students and differences between them and other members of the academic community (2009), conclusion which supports the same argument. Wilson et al (2009) presented a formative inspection framework of the evaluation of advanced search interfaces through the quantification of the strengths and weaknesses of the interfaces in supporting user tactics and varying user conditions. The identified problem is that when users have poorly defined or complex goals, search interfaces, offering only keyword-searching facilities, provide inadequate support to help them reaching their information-seeking objectives. Also, Sheeja (2010) and Nicholas et al (2009) have emphasised on different usage patterns between different parts of the academic community.

4.2.3 User satisfaction

Information abundance does not necessarily mean quality and user satisfaction. When services are available, students' attitude toward them should be examined. Librarians adopt or create tools and other means to check the EIS quality and the user satisfaction. The only way to find out whether users are satisfied or not, is to ask their opinion about the electronic information services and their effectiveness. Cullen (2001) examined library services in general adopting a model, originating from a general management theory. His findings include a part about EIS and some other interesting conclusions: 'Overall satisfaction is likely to have a significant impact on the future of academic libraries and their competitiveness' (p.684). And she proposed that:

'Clearly, further research that would help integrate indicators evaluating electronic service delivery into the SERVQUAL model and other models of service quality and user satisfaction are urgently needed' (p.684).

The tool which has been used by many libraries in order to check their operation quality (Robinson 1999; Oldfield and Baron, 2000; Philip & Hazlett 2001; Hernon

2002; Landrum & Prybuton, 2004; Nagata et.al., 2004; Hernon & Calvet, 2005; Petruzzellis et.al., 2006; Moon, 2007; Sahu, 2007).

ARL (ARL-LibQUAL+TM) reports the idea of creating and promoting a tool which could check the service quality as well as user satisfaction. This tool can assess the whole library service, in printed and electronic form. LibQUAL+ currently tests a tool for measuring library users' perceptions of service quality by identifying gaps between desired, perceived, and minimum expectations of service. The basis for the LibQUAL+ survey tool is adapted from SERVQUAL, which is grounded in the: 'Gap Theory of Service Quality' and was developed by the marketing research team of A. Parasuraman, V.A. Zeithaml, and L.L. Berry (ARL-LibQUAL+TM 1999). Their results announced in 1999 defined the LibQUAL+TM : 'as research and development project undertaken to define and measure library service quality across institutions'. It can be a useful and quality-assessment mean for local planning. It actually tries to develop web-based tools for assessing library service quality; to develop mechanisms and protocols for evaluating libraries; to identify best practices in providing library service; and to establish a library service quality assessment program at ARL.

According to Jager (2002):

' LIBQUAL+ attempts to obtain objective indicators of service quality by assessing the gaps between perceptions and expectations of service delivery (LIBQUAL+, 2001) (p.141)' as:

'an increasing demand for greater accountability in higher education has created a demand for the academic library to show objectively how well it is doing and the extent to which students benefit from library services'(p.140).

ARL moves a step forward by creating a new protocol, presented by in a PhD thesis, by M. Kyrilidou (2009). This new protocol is an improvement version of the LIBQUAL+ application. Different users fill parts of the question something that saves users' time and gain more answers. Hakala and Nygren (2010) have shown that planning and implementing a customer satisfaction survey is a big investment for a small library. Thus, one might ask if it is worth it. The LibQUAL survey certainly has its pros and cons, but it gives an opportunity to look at things from the customers' perspective. Moreover, the customer view has to be taken into account in order to be more competitive and to meet financial criteria. Becoming more efficient and effective will nevertheless means finding a balance between customers' needs and the

strategic goals of the parent organization. Customer voices and the transformation of the universities' operating environment call for proactive behaviour as well as partnership building with research and teaching. Library investments in this field will produce customer capital for the whole university. Customer satisfaction with library services has a positive correlation with the overall image of the university and most importantly, with its financial state. Not only does the adoption of the customer-based perspective allow the library to achieve its objectives in terms of giving continuing customer satisfaction, but it also results in improved efficiency within the parent organization. Maskari and Sanderson (2010) have shown that user satisfaction is a subjective variable influenced by several factors (e.g. system effectiveness, user effectiveness, user effort, and user characteristics). They make clear that:

‘However, it must be emphasized that when users do not have previous experience in the IR system under evaluation, it is likely that the group’s expectations are low concerning what to expect in terms of the search engine’s quality of output, thus causing very little variation in the users’ subjective ratings of their satisfaction. Therefore, IR system evaluators should consider all factors listed above regarding measuring user satisfaction. To accurately measure user satisfaction, for instance, it is not enough to say that system effectiveness does not influence user satisfaction; we also need to consider user experience with the IR system under evaluation.’ (p. 15-16)

Many libraries in the world use this tool to check the user satisfaction and the service quality (Hiller 2001; Dole 2002; Hitchingham & Kenney, 2002; McNeil 2002; Wall 2002; Cook et.al.,2003; Falcone & Rivera, 2005; Roszkowski, et.al., 2005; Thompson, et.al., 2005; Brown 2005; Creaser 2006; Harer 2006; Heinrichs,et.al., 2006; Kyriolidou & Person, 2006; Chen 2007;Timmer and Glas,2010; Kiran,2010).

4.2.4 Service quality and measurement

Satoh et.al.(2005)while working in a project at the libraries of four universities in Japan, England and Finland tried: ‘to recapture the four dimensions in the concrete contexts of library use’. They concluded after analyzing and mapping according to the dimensions: ‘Effect of Service – Personal,’ ‘Library as ‘Ba’’,’ ‘Collection and Access’ and ‘Effect of Service – Organizational’. Generally services quality is an object of investigation in the whole world. There are various investigations in the literature on this subject area. Assessment measures taken and the applied tools are

common or different but the intension is always the same: to improve the service and its quality.

Simmonds and Andaleed (2001) argued that the combined method of running regular analyses along with the introduction of new indicators to assess the library's service, may prove to be a useful tool for defining user policies and more suitable designs for the various information resources and services. They emphasized on the importance of the perceived quality of the library resources:

‘academic library users frequent their libraries to find solutions to their academic problems and needs, it is imperative that libraries have the right kinds of resources available; otherwise, users will go somewhere else’ (p.633).

Barton (2004) has shown that the progress in the field of EIS assessment in libraries has not extended. The progress has been made through initiatives such as the ARL Statistics and Measurement Program and projects such as the EQUINOX project, COUNTER, EDNER+, the ARL’s LIBQUAL+initiative, the JUBILEE project, and most recently the eVALUED project are just relative new and are not applicable beyond their university boundaries. Hartland and Thebridge (2003) analysed strategies which potentially offer evaluation tools for EIS assessment. They presented the potential types of evaluation conducted by research students, on administering staff, using feedbacks, monitoring student use etc. Their research is part of the eVALUED project which is an evolution model for e-library developments and is hosted in the Centre for Information Research (CIRT) at the University of Central England. The project was aiming to develop a transferable model for e-library evaluation in higher education and to disseminate and train professionals in e-library evaluation (E-valued, 2003). Another one organised and structured efforts to measure the EIS usage is EDNER+ project by CERLIM (Brophy, et.al., 2003) by investigating into the impact of the Information Environment into the higher education and further education. Apart of the above, there are also individual efforts to investigate the use of EIS (Majid et.al.,2001; Ho & Crowley, 2003; Sayed & Murray 2003; Shi et.al., 2004; Hsieh, et.al., 2006).

Librarians and information specialists have argued about libraries' impact and outcomes of relevant researches. To make it clear about, the term ‘outcomes’: ‘...can be seen as the eventual result of using library services, the influence the use had, and its significance to the user’ (International Encyclopedia of Information and Library

Science, 1997). In a paper, Thebridge and Dalton (2003) presented achievements made in America and United Kingdom in relation to the library assessment and outcomes. This area seems to attract the researchers' and practitioners' interest. Gratch-Lindauer (2002) dealt extensively with the area of assessment and library outcome after an analysis of current and draft standards and documents of the regional accreditation commissions. Ambrozic (2003) examined the need to measure library impact and outcomes in the context of Slovenia in order to achieve better services and operation. Poll (2003) tried to assess a direct outcome of library services on the academic success of students and academics or on the results of professional work by: 'the average time per week spent in using the library, the number of books borrowed; the use of the reference desk and the attendances at user training lessons'(p.10). He argued that libraries understand the need of demonstrating and proving the benefits achieved by their activities:

‘... they can inform about the social value imputed by users and non-users of libraries, or the outcome on information literacy, information retrieval, and even on academic and professional success’ (p.11).

Poll and Payne’s (2006) later work in this field has provided more useful examples and information. The important thing is to apply an assessment tool focused on achieving better understanding of services and users, as Jackson (2001a; 2001b) proposed, by an assessment way of Hylife project service effectiveness. The criteria used are not standards but come through the local demands. This is another option, which could be effective providing the appropriate feedback to support and improve services. Invention was the basic element for success of this evaluation process.

4.2.5 Statistics and their role

Statistics has been the basic tool of assessing libraries service quality for a long time. Their role is ambiguous. Professionals argue about the advantages and their disadvantages. Ashcroft (2002) claimed that: ‘... usage statistics are clearly the most favored means of evaluation’ (p.151) on the world although the use of in-house statistics indicates that statistics produced by publishers may be less than adequate. The doubts about the use of vendors’ statistics are mentioned by Ashcroft who said that: ‘... in a mutually beneficial relationship, all involved need to be aware of each

other's needs and problems' (2000, p.471) so libraries and vendors need to know about the usage but also, they have to create common way to assess the usage in order to be benefited both sides.

Liu and Cox (2002) proposed a system to monitor the electronic resources usage of specific journals. In order to show the accountability related to the cost of e-journals, they propose the use of statistics as a source of information to guide our selection and acquisition decisions. They argued that vendors' statistics are not comprehensive: 'Unfortunately, the usage reports provided by most vendors are not comparable, reliable or consistent' (p. 32) and they cannot compare the information they provide. Thus, it is not possible to trust their reliability and accuracy. Duy and Vaughan (2003) compared vendors' statistics and local statistics in North Carolina State University. Their results show that while the provided data in terms of patterns of use are fairly similar the quantitative values are not. Reaching in the same conclusion, they concluded that: 'The difficulty here is in knowing what data are more reliable' (p.20). They also proposed that data should be collected in the same way by vendors and libraries. Furthermore, the deliverables include producing appropriate models taking into account that statistics are the only way to assess the library's services.

Cheng, et al. (2002) presented a program of gathering statistics in order to explore the electronic services usage. Multi- task gathering from different dimensions aims to achieve full recognition of any user need by providing conclusions on management and financial improvement decisions. Frangou et al (2001) and Sugarman and Demetrikopoulos (2001) expressed doubts about the vendors' statistics comprehension and their effective role on library services assessment. Specifically they say that the electronic services available through the consortium are used widely but they collaborate with different hosts while not all of them use the same form. As a result they cannot compare the information retrieved about the electronic services, provided in different form and depth sometimes. Libraries ask for statistics in a specific form.

Rozic-Hristovski, et al (2002) analyse the web log usage to assess the use of the web. It is a useful tool although the research concerned general information across the internet and was not about individuals or in an analytical stage. The tool gives the library the opportunity to examine the statistics. It is a way to check the information behaviour. They concluded:

'The analysis of the website usage behaviour revealed groups of visitors having similar needs and interests. Concrete knowledge about the way that visitors navigate the website will improve its design and content to increase efficiency and effectiveness' (p.216).

Coombs (2005), in a project which he undertook in the university of Houston library, used the log of electronic services data and found them useful in order to discover not only the used sources but also information about where, when, how and why the sources are used.

Sacchetti (2007) examined the role and the application of the ISO 9000 statistics tool in terms of the usage and benefits for libraries. He claimed that it has been proved to be very useful in human resources development, user satisfaction and continual service improvement. In another work in the same area, Kaur et al (2006) described the steps in attaining the ISO 9001: 2000 quality management system certification at the University of Malaya Library. They found it a useful tool in organising and supporting improvements in the university context.

4.2.6 User instruction and its consequences for librarians

All the changes in the information provision affect the traditional user instruction process in the libraries. Librarians face the problem of having to be very quick on instructing about EIS if they want them to be used. This affects their role, their responsibilities and their skills. Moreover they find themselves looking for different ways to assess their teaching results in order to establish the importance of their services as well as to evaluate the outcome of this task.

4.2.7 Teaching as an expansion of librarians' role

All these technical services and the consequent sources results in the aggravation of an old and a new problem. Users needed support to use the information services but now need more to benefit from all the technological developments and the information available through them. Librarians always support users but now this is more essential than ever. Fidzani (1998) in the University of Botswana searched the use of library services and resources and found: '...graduates do not have adequate training in the use of the library and that some of the students are not aware of the services which the library can offer them'(p.337). Simmonds and Andaleeb (2001)

proposed and tested a model to explain the use of academic libraries. They discovered that:

'Emphasis on instruction and knowledge on how to use these resources can help to increase library usage and also to enable them to evaluate more effectively the resources they find when they do research' (632).

Rudge and Wilson (2001) argued that: 'There is an increasing need to effectively train our users in the use of electronic information and to develop users' skills to facilitate independent learning' (p. 44). Something which is quite obvious to libraries, driving them to develop training programmes in a variety of forms.

In the literature there is some quite confusing terminology in the field of user support-user education, user instruction and information literacy. Thompson (2002) clarified the difference between Information Literacy (IL) programmes and Traditional Library Instruction, by providing an explanation for the movement from the second to the first and analysing the current trends which demand IL:

'The difference between the approach in traditional library instruction and information literacy is that the former assumes that library instruction is an add-on or a plum to make the course better if the librarian is able to convince the professor to give up the class time, whereas the latter establishes as a principle that information literacy is an essential ingredient in the education process and must be embedded into the course structure along with the other vital components of the course. Information literacy asserts that library instruction is not a frill or a desirable extra component, but rather is an intrinsic part of education today' (p.227).

Owusu-Ansah (2005) while trying to identify the content of the term literacy, suggested librarians to concentrate on the expectations deriving from such unanimity, and outlined those expectations.

The fact is that the librarians' role has changed. It has been expanded to become more intricate in the teaching and learning process. The users' need to be instructed on how to use libraries, has forced the researcher to think beyond the simple induction sessions and the traditional ways of providing user support. There are studies, (Banwell 2004; Korobili 2005) which support the idea of user education embedded in the university curriculum and in some universities, has already be done. Banwell et.al (2004) explained how EIS can be embedded in curricula and learning experiences. Raquepau et.al. (2002) presented a model of Information Literacy through which they examined the results of an embedded program in the curriculum: 'INFO220 was a

successful course when measured by various tangible results: students' grades, student evaluations, pre- and post-surveys, and self-assessment' (p.320). This means that even if librarians could persuade the university about this necessity, they would also have to be prepared to support it in terms of their qualifications, skills, staff, time and educational facilities. Doskatsch (2003) proposed that librarians should involve in teaching process more actively and that is a necessity. Moreover she moved forward by supporting that an effective role on this field requires a convergence of pedagogical knowledge, information expertise, technological competence, strategic skills and professionalism. She wrote:

‘Librarians should involve in teaching process more actively ... Effectiveness in this role requires the convergence of pedagogical knowledge, information expertise, technological competence, strategic skills and professionalism.’(p.113).

She held that the pedagogical background of librarians will be a quite important qualification. This role expansion requires new skills and qualifications. This means that the role of the librarian is going to be more complicate than what it used to be. She insisted that the pedagogical background of librarians will be a quite important qualification. Librarians should be ready to give technical support to their users so their role demands technological qualifications. Librarians' qualifications have to be expanded to use the electronic sources and promote them effectively.

Promotion policy consider in such extent as to attract users making a service successful in Nigerian university libraries (Nweze, 2010), a practice which should be used also in Greece (Makori, 2010). Databases and electronic services interface always change so they have to be aware of the new interfaces and Information literacy skills. The promotion of the services is necessary and has to have a way to be evaluated as well as measured its effectiveness according to Kiran (2009). A promotion policy for any user has to be part of the everyday operation of libraries. Supporting this Germano (2010) has proposed a narrative-based marketing plan for libraries and has emphasises on promotion policy usefulness.

4.2.8 The role of instruction

Rader (2000) presented a 25-years review of the literature on user instruction and information literacy. The expansion of the fields has moved from user instruction to

Information Literacy under the changes which occurred on education and technology. Debowski (2000) wrote about new library services as a result of technological developments but also mentions the importance of user instruction. Her opinion is that:

'Our challenge is to reframe our notions of information service as users move toward electronic information retrieval. This could mean some drastic revisions to the way users and their needs are perceived. The challenge of creating users who are information literate is not as simple as it first appears, and will require some significant reviews of the ways in which users and information workers relate' (179).

Kavulya (2003) described the conditions in Kenya and defines the important types of information literacy skills as the following:

'Library orientation, library manuals personalised reference services, and computer oriented training programmes and communication skills courses are useful in that they focus on the main problems of fresh undergraduate students: finding materials they need, and knowing when, and from whom, they should ask for assistance with confidence'(p.221).

He believed that: 'there is a need to develop programmes that address the different information needs across all the courses in the university curriculum.'(p.221) The user education strategies as they are presented by Lau (2001) are:

'The user education program evolved based on the experience and challenges faced by the library staff, the availability of more librarians, the growing awareness of the university authorities of the role of libraries, the faculty recognition that students lacked information skills, and the expansion of information collections and services. Therefore, the instructional strategies were implemented almost one by one' (p.97-98).

Dorner et al, (2001) presented a general instruction programme and Information Literacy is part of it. They argued that instructional programmes have to last and not include just a session or two. The lifelong learning idea is behind all the presentation. They proposed:

'...the model of delineating specific information literacy skills across courses and programs for specific content/practice-based applications will be continued in the nursing academic unit' (p.140).

The basic message from the Burton and Chadwick (2000) is that any instruction either through the Web or in class is useful. Users develop a list of criteria during their searching activity. They apply this list to any resource after it. This way of

constructing knowledge and transferring it in the next experience is not far away from Piaget and the current trends in education. They also argued that:

‘if teachers want student writers and researchers to stop using sources irresponsibly or inappropriately, they must take responsibility for training students in strategies of critical evaluation and urge colleagues across the curriculum to do the same’ (p.325).

Hearn (2005) presented a more active librarian’s role as co-instructor in an information literacy program for undergraduates and talks about the various problems that librarians face in order to fulfill this task. Ashoor (2005) reported that developing countries face ‘a number of problems which stand in the way of developing their IL programs. The three major problems confronting these countries are the traditional educational system, the low literacy rate, and the low level of publishing. He concluded:

‘For developing countries to adopt an IL concept, they must tailor it to meet their specific needs and suit their local environments. The development of IL in developing nations is inhibited by the problems of a traditional educational system, low literacy rate, and a low level of book production’ (p.308).

Oduwole and Akpati (2003) talked about a new university and a new library in Africa, where any service is new. Their study indicates that:

‘automated services at the university are relatively easy to search and do not appear to require previous training in information technology use... This finding supports the earlier submission that you do not need to be a computer expert to use such automated services’ (p.230).

The problem is when the available information is too much to be searched and then the users have to develop critical thinking criteria. Many researches around the world working on the field of user instruction prove that information literacy is an object of research all around the world and express the librarians’ efforts on this field.

4.2.9 Instruction on line

The idea of Web use for user education seems to be another solution in order to cover the users’ needs. Rhodes and Chelin (2000) surveyed 68 UK university libraries and three-quarters of the libraries making use of the Web for this purpose. Although the reason for this provision comes from the idea of independent learning and user-centered practice, the web-based instruction is unlikely to completely replace traditional methods, but it can be used to supplement and extend existing provision.

Tricarico et al (2001) proposed an online tutorial so as to face the problem in Information Literacy. The importance to design it carefully is emphasized. They concluded:

'Perhaps most important is the fact that in the course of this experience one cooperative project, with the Colleges of the Fenway, led to a larger collaboration among librarians in small academic libraries throughout New England'(222).

The movement of the Information literacy towards virtual learning is a fact according to Joint (2003). A few years later Joint (2005) expressed his thoughts about the possibility of deputising the user education process with a more powerful mechanical information retrieval tool like a portal providing special support. This practice could eliminate any user-librarian interaction and the results could be tremendous for libraries. Yi (2005) reported the idea of the 'cyber-delivery' IL which she viewed as inevitable and driven by a variety of factors, concerning the pressure to find the most effective educational approaches to train students to use EIS. The ultimate intension is to encourage independent learning and student-centered education. The practice of using web to support user searching results on looking for a solution by librarians to discover users' education needs. Rutter, Matthews (2002) and Patalong (2003) presented their experience on this attempt. The role of instruction librarian in the web design is essential in order to achieve independent users according to Vassiliadis and Stimatz (2002). Communication and collaboration is not a subject between different departments of the university but also in the library. Online instructions seem to be a solution for remote and distance users. It could be an answer to user support in electronic environments.

The role of instruction has been recognised by academic librarians in Greece. Academic libraries did not have fundings to support and create appropriate instruction for all the library services or specifically for the electronic services. Through the EPEAEK during the year 2000 only 300 users participated in instructional sessions supported by the central library while the departmental libraries educated users in groups or individually but not in a formal way. Electronic services and users' pressure make it clear that all the investment in the academic libraries would be useless if users did not know how to use them. As a result, on-line tutorials and users' guides have been created to support users or remote users. Korobili et al (2008) reported this picture as well and said that most libraries in Greece and Cyprus deliver some kind of

library instruction but not information literacy programs. She mentioned that lack of space and lack of pedagogical skill along with funding. Also Korobili et al (2009) have shown that students who have not completed an assignment in the previous semester, are not acquainted with the scientific sources available in the library. They argued that: ‘However, there is a difference between those respondents who have ‘attended an IL course integrated in the curriculum’ and those who have not’ (p.340). Additionally Malliari and Nitsos (2009) reported the necessity to provide information literacy programs and integrated them in every curriculum. Academic libraries’ effort to cover this area nowdays, results on more formal instructional sessions.

4.2.10 Assessing the effectiveness instruction

Librarians should assess the usefulness of any user instruction. Bracke and Dickstein (2002) checked a web tutorial. The tutorial was compulsory and curriculum integrated. They proposed ways to estimate tutorials and instruction:

- 1.‘Over four semesters, the authors have found that using an assignment-specific Web tutorial in conjunction with an instructor-led, in-class preparatory exercise is an effective method of delivering library instruction to large classes...’
2. ‘...Interactive Web tutorials can be used successfully for library instruction for large classes. The success of this instructional method is enhanced when there is good collaboration between faculty and librarians, librarian persistence, and a willingness to experiment and learn from mistakes. The success of the tutorial was enhanced when it was integrated into the course and augmented with an in-class exercise’ (p.335).

Emmons and Wilkinson (2001) checked the electronic class effectiveness by analysing the design and the parameters. The environment and its impact on students could affect the outcomes and the students learning level. It was tested actually in the ergonomic aspect. This is another aspect which is not much emphasised in literature. Many issues about health and comfort came up through this article. In the same line, Hoffman (2003) presented the process of production, assessment and evaluation of a new online interactive instruction class:

‘Though early in its electronic infancy, the course shows great promise, as evidenced by an increase in positive comments on the student evaluation form, and an improved passing rate. And through ongoing enhancements, it will increase in relevance and application to other curriculum’ (p.209).

Hsieh and Holden, (2010) in their survey reveal that most students have been benefit by their ‘single-session’ information literacy course. According to Wong et.al, (2006) it is not enough to provide user instruction but the assessment of the provision is necessary too, in order to achieve better results. In order to improve library instruction the Hong Kong University of Science and Technology Library conducted a formal assessment on its instruction program in 2004 researched by them.

If librarians want to create effective user instruction, they have to consider the learning styles as they are presented in the relevant literature. Doskatsch (2003) concluded that service assessment is more than necessary and this because through it we can check the outcomes. She claimed that:

‘We need to establish quality assurance mechanisms to measure the effectiveness of information literacy programs. We must produce research evidence to substantiate our claims that the educative role of librarians benefits teaching and learning outcomes’ (p.25).

Resnis et al (2010) perceptions about university community (among professors, librarians, and students) were similar. As a result, the course plans could include additional assignments to make the process of research more explicit.

4.2.11. Communication and collaboration

Communication and collaboration seems to be important elements in libraries’ operation. Swan and Panda (2009) argue that academics increase the use of EIS attitude which in turn creates the necessity to communicate with them. The library’s transformation as a result of the modern technology requires new management and new policy. The literature reveals that the complexity of the EIS demands firstly of all communication between libraries and faculties with all the ensuing consequences. According to Yu, a library can introduce a model of ‘Faculty member as a library specialist of the library’ (Yu, 2009, Bennett and Gilbert, 2009). The successful collaboration with the faculty and the university in building students curriculum is essential according to Riehle (2008). Services which are not recognized by the university community could not exist for long. Communication should be extended to include academics, without which, user instruction could not be effective. But the necessity of cooperation and communication does not stop here. Libraries should collaborate with computing departments in order to achieve better quality in their

services. Furthermore, other departments of the university should probably be partners in the libraries' effort to provide their services. Moreover communication and collaboration with students is necessary. According to the current literature, the role is crucial.

Librarians have been asked to play the teacher's role in an area which they did not know so well and so thoroughly. They were forced to attend relevant seminar to meet the new requirement. On-line instruction is part of their efforts. The EIS usage is supported by on-line tutorial CAL packages, FAQ and any possible other help link on the website. Moreover they create and develop assessment tools to check the effectiveness of the traditional and current user instruction.

4.2.12. The importance of collaboration with academics and other parts of the university community

Collaboration seems to be a quite important factor throughout literature. Electronic communication has transformed library services and communication between libraries, while computing and academic staff is essential. Dorner et al, (2001) emphasised the role and the importance of collaboration. Doskatsch (2003), Cunningham and Lanning (2002) advocate librarians and faculty collaboration on information literacy programmes. They recognised the necessity and proposed ways to achieve better collaboration. Doskatch (2003) reported that the collaboration is imperative under the circumstances while she predicted that collaboration between teaching academics and librarians and Information literacy and educative role of librarians demands will be complex.

The idea of partnership is present in Burton and Chadwick's (2000) work. They proposed that faculty can team with librarians to train students in conducting smart searches and approach the information effectively. Kavulva (2003) mentioned the notion of partnership: 'The teaching faculty can contribute to effective information literacy programmes by encouraging the students to use libraries and build information usage into their teaching programmes'(p.221). Sanborn (2005) discussed the importance of faculty collaboration and outlined the process of creating a library instruction session while obtaining and utilizing faculty collaboration. He suggested that library instruction is improved when combined with faculty collaboration and that ultimately library instruction is linked to academic success.

Sugarman and Demetrikopoulos (2001) had described an interesting partnership paradigm that could be used and which concerns the reference interview and bibliographic instruction:

‘Academic librarians are actively initiating partnerships with faculty and students. Despite this new dynamism, however, the primary objective of librarian-faculty-student cooperation remains the accomplishment of a short-term goal in response to an immediate research/teaching request...deriving its success from the continuing participation of librarians, faculty members, and students’ (p.151).

Rudge and Wilson (2001) had also emphasised the cooperation role:

‘Through co-operation and collaboration through-out the profession we can ensure that the students of today will become the successful multi-skilled information professionals of tomorrow’ (p. 46).

Hooks and Corbett (2005) further on supported that: ‘collaboration between librarians and graduate faculty members is an essential factor in enhancing an information literacy program at the university level’(p. 245). Collaboration between librarians and faculty is a relative new trend in Mexican academic libraries. Lau (2001) examined the level of partnership in Juarez University of Mexico:

‘The partnership between faculty and libraries set the basis for the education of future graduates who will have the information skills needed for life-long learning and for a productive professional career. At the heart of the user instruction changes promoted by libraries was the identification of a learning-oriented education process for the university’ (p.104).

Specific conditions in terms of academics’ demands and students’ needs. Actually the academic conditions are quite similar to the Greek learning and teaching process (memorisation, one book etc).

According to Thompson (2002), collaboration and partnership play the key role in effective instruction: ‘Faculty and librarians are natural allies in the educational process: they both encourage reading, writing, and research; they both stress critical thinking; they both are interested in the life of the mind; and they both are educators’(p.233). Nimon (2001) argued for effective measurement of Information Literacy program outcomes through shared assessment of student learning. He believed that: ‘...measuring information outcomes will be difficult and will need to be context-specific to be meaningful’ (p50). The meaning of the information literacy outcomes is linked with the partnership between library and faculty and is affected by

the teaching programs. Partnership should take place in operation with computer departments to improve the electronic service quality but also with any other part of the university community.

Collaboration is necessary with academics to support their teaching role and make them aware of the libraries services. Dugdale (1999) exhibited the importance of cooperation and partnership. Collaboration is part of the current literature in a diversity of service applications: ‘Academic and library staff must work more closely...developing such close relationships to ensure an efficient and cost-effective service’ (p.15). At Griffith University Abbott and Peach (2000) presented an instruction program applied in three stages. They paid attention to the role of partnership and integration of Information Literacy in curriculum integration. Rader (2002) also argued that partnership is a challenging area in libraries and should be extended to on campus and off campus, to academics and researcher but also to other institutions and libraries.

Moreover success can only be achieved through collaboration between library’s personnel and experts in the different disciplines. Cain (2003) emphasised collaboration with IT specialists: ‘Librarians and technologists are becoming increasingly interdependent, so to achieve their goals they must cooperate’ (p.181). IT people and librarians have different tasks but serve the same goals. Their relationship should have better services as a result. Bruce (2001) wrote an article which describes the attitudes of Australian academics to the developmental partnerships with librarians and other university departments. Cooperation should be part of the library operation in any possible way.

4.2.13 Summary

Technology has emerged in libraries and huge changes occur in all levels of their operation. Librarians could not ignore the big challenge and react properly. Research has been done and librarians try to provide users with an effective and useful service. Information seeking behaviour has been the object of research in many different disciplines. Information scientists pay considerable attention to this area. They look into information seeking behaviour, they produce models and try to apply them in

order to achieve quality service. They study the use of EIS, find out the emergent problems and recognise specific users' needs in different disciplines.

Service quality is an object of investigation in the whole world. There is a lot of work on this subject area. Assessment methods and tools are common or different but the intention is always the same: to improve the service and its quality. Librarians as part of this world develop tools to find out the real intention behind the users information behaviour. They create statistics and develop qualitative research in order to complete this goal.

4.3. Access and user friendly services

Services are available through the libraries but the question is in which terms.

Information scientists identify some important areas about EIS accessibility. The place and the equipment determine the way of the service usage. The interface and the way of the EIS presentation are two other factors which could affect their use.

4.3.1 Accessibility and availability

Technology advances rapidly affecting libraries' operation. There is information proliferation and users have the opportunity to reach information from all over the world in a few minutes. Libraries have the services and sources on their website so that users could see them but in what form and how easily available are they? As Thapisa (1996) stated: 'information seeking therefore is a function not only of awareness of the possible existence of documents but also of their availability and accessibility' (p.76). These questions have to be examined in detail by librarians. In the 1997 Greek Academic Libraries conference Garoufallou and Siatri (1997) showed that access to the libraries' sources off campus was not so easy. Today it is even easier. Most of the services are accessible on the web on or off campus.

But people are not always positive to changes and librarians should check the proper use of the electronic services. Marcas et al (2000) argued that: '...Users seem to like having all library resources available at one workstation'(p.171). But after all these changes, a problematic has been revealed:

'Many patrons, by training and habit, are used to the 'old' workstations and are therefore hesitant to retrieve information on the new stations... although we wish to encourage Internet use as a library resource, we do not yet know how to stop 'chatting' and sending of private e-mail from these networked stations, though we were aware from the start of the potential hazard. A third problem is lecturer awareness' (p.171).

Another problem, directly connected to linking, is the variety of databases (Mok et.al, 2006). Also, as an effort to improve the conditions Ma and Cole (2000) examined the database expert system, which has been created to facilitate information retrieval without librarians' meditation. Their university experience has produced a system like this and describes difficulties and implementations. It concerns general improvement in the provided electronic services and it is an interesting proposition. They argued:

'We have developed a prototype Database Selection System, which helps users navigate the range of available electronic resources databases and provides advice on the selection of the databases. We have collected knowledge from human experts and from printed and electronic resources, developed a database selection algorithm - a decision model - and incorporated the algorithm into a computer decision process' (p.219).

Melgoza et al (2002) working on the same subject they found that

'For users, accessibility ranks as the most influential factor... convenience-effortlessness- as the second most influential factor and ease of use was cited as the third most influential factor when seeking information'(p.39).

Marchionini (1992) talked about the interface importance and predicted that:

'Computer-augmented will become increasingly more pervasive and more complex'(p.161). His approach is closer to the technological aspect. He presented a model of development in Information seeking. He focused on the importance of user-friendly interfaces and development of its importance in the interaction process between human and systems. Garoufallou et al (2005) wrote a comprehensive article which advises librarians to build simple, clear and useful websites in order to achieve user friendly interface and as a consequence more users.

Services interface, what users see on the screen, is an important parameter that affects the service usage. Usability testing is another area, which computer and information have sciences researched the last years. Then usability testing is:

'...a means for measuring how well people can use some human-made object -such as a web page computer interface, a document or a device- for its intended purpose, i.e. usability testing measures the usability of the object. Usability testing focuses on a particular object or a small

set of objects, whereas general human-computer-inter-action studies attempt to formulate universal principles' (Wikipedia).

As McMullen (2001) stated librarians have to consider this parameter as well. She was saying that: 'The library Web interface represents a critical meeting ground between the information professional and the individual who is seeking information' (p.7). And she continued: 'Usability testing can be an eye-opening experience for librarians. One lesson all librarians could learn from usability testing is that we cannot make broad assumptions about how our users are interacting with our library Web sites and accessing our resources' (p.16). Battleson et al (2001) concluded about usability testing of an academic library website: ' Results of testing lead to recommended changes, which will, in turn, need to be evaluated, implemented and tested again' (196).

Nowadays information and accessibility is a quite complex area. There are many other parameters which could affect and make the information accessible or not. Thapisa and Venus (1999) have shown that quality of service should not be based 'on the system and procedures' but librarians should concentrate on their users, develop communication systems and make their user aware of the available information and the users' specific characteristics. For example Hachett and Parmanto (2005) in research about library web design for people with special needs found that they become progressively inaccessible as complexity increases. The electronic information provision is not an one-step process but a service which requires management, communication and marketing skills but also technical and pedagogical knowledge. Using the new technology organizations and librarians have to provide new sources and services. The ultimate aim is to provide them to the users and support them in their academic life and career. OCLC carried out a study which yields powerful recommendations for librarians on how they can influence students' web-based information choices. Findings identified several barriers to users' successful use of library resources:

'Inability to *access* databases remotely due to password requirements and/or license restrictions, difficulty *searching* and *navigating* within the library and its website costs of copying and printing at the library Shortage of knowledgeable *librarians*, lack of the *customer orientation* they have come to expect as consumers.' (OCLC, 2002, p.9).

Literature strongly suggests that there are real opportunities for academic librarians to connect students with libraries' high quality resources.

4.3.2 Summary

There is a number of basic problems which information scientists recognise as a result of the advanced technological services and sources. There is information proliferation and users have the opportunity to reach information from all over the world in a few minutes but this is not the best thing for all. Libraries have the services and sources on their website and users could see them but in what form and how easily available are they? All these services require technical equipment and technical support, something which is not easy. Moreover people are not always positive to change their habits and trust the new services. Librarians should check the proper usage of the electronic services. Services interface, what users see on the screen, is an importance parameter that affects the service usage. Usability testing is another area, which computer and information sciences have researched over the last years in order to ensure the best possible EIS use. Nowadays information and accessibility is a quite complex area.

4.4 IT skills and needs in current information environment

There are all these technological facilities, all these services and sources but what about users? How do they feel and what do they do with all these? Information scientists have made a lot of research upon the information proliferation and the users' feelings.

4.4.1 Information proliferation and the libraries response

Several services and sources have developed to improve libraries in the world (Somerville and Brar, 2010). Technology has a decisive role in the library operation and education. Brophy (2000) proved that the development of information and communication technologies (ICTs) is the most important and most far-reaching.

Electronic technology is going to improve the services and sources in terms of accessibility and availability. Suárez-Balseiro et al. (2001) wrote that:

'...the use of databases as a source of information had increased considerably among the various user groups in the university due to improved accessibility and availability of titles suited to users' information needs'(177).

Tenopir (2003) presented an article and mentioning the increase of the electronic service, sources and their various forms. She argued that:

'Even though librarians today have many more decisions to make, online life has gotten better. Because the web is a model platform, users are demanding online content, linking is widespread, and online resources are the most important part of a library's collections and services. Chat and e-mail reference services are bringing librarians to the online patron'(p 36).

Library operation has been affected by technological developments. In a multi study Franklin and Plum (2002) found out that technology helped to increase the library's usage by remote users:

'The studies demonstrated that remote usage of networked electronic services significantly exceeds in-library usage of those same resources. In varying degrees, remote usage was larger in volume than all other library services combined as well' (p.131).

The authors found that: 'the distribution of usage of electronic services and print journals show a similar pattern, although it seems that researchers are depending more on the electronic resources than traditional print journals'. The important point is that the electronic sources have increased and affected user behaviour.

The process of electronic provision service is an on-going task and lasts as long as technology is developing. Mutshewa and Rao (2000) reported that:

'The University of Botswana Library uses the available information technology resources to enhance its service. From time to time, the library professional staff is in search of new ways to improve the service. Information technology has been put at the forefront in the library's quest to provide quality service' (p.319).

Ma and Cole (2000) explained how information proliferation is part of library's life today. Internationally more information and services are available through the Web.

On the other hand Ball (2000) claimed: 'The information environment has become even less transparent and more complicate' (p.12). There is plethora of services and sources. The libraries' services on the web are getting complex and improvements are taking place all the time. Poo et al (2001) presented the application of an electronic librarian (E-Reference) who helps the user to achieve effective and useful information retrieval in the online catalog.

Another interesting service available through the website is the 'reserve' service. Dugdale (1999) described the usefulness of this service and its effect on the teaching and learning process. Martin and Metcafe (2001) presented the usability of the Current Awareness Services (CAS) and Selective Dissemination of Information (SDI), both available through the Web directly to the end users. Moyo (2002) proposed the idea of an on-line, real-time referencend:

'ORR not only makes the services more accessible, but also enables a patron to request this assistance at the point of need, helping the library move towards an anytime, anywhere service'(p.20).

In Liverpool John Moores University, Ashcroft and Watts (2004) investigated the provision of e-books in 127 academic libraries in the UK and all the related phenomena with this provision. Their research proved the complexity of the electronic information environment and the consequences behind it.

Various services and sources are developing in order to support or forecast users needs. Electronic catalogs, databases, portals and gateways, reference services, question points and many other services are part of the technology exploitation and development. Librarians' activation and creativity as well as users' needs and requirements determine the level of the technology in the library's operation.

In Greece the conditions are not far away from this picture. The increase of electronic sources in Greek university libraries has been presented in an article by Fragkou-Mpatsiou et al (2001) who draw the same picture. According to formal statistics from TQMU (2003) the electronic information has increased in the last decade. Almost all the academic libraries have the OPAC on-line and their website provides access to various electronic services and sources (2001). Browsing across the academic library pages someone could find FAQ, on-line tutorials, library rules and much more information, which concern their operation.

Katsirikou and Skiadas (2001) described the impact of chaos theory and the consequent chaotic behavior on the libraries operation today, because of all this information and technological explosion,. As major factors they consider: the plethora of technological facilities, the dependence of resource providers and the increasing supply and diversity of information resources.

4.4.2 User attitudes and feeling

Users demand more and easier access because of the new technological achievements. Their demands have been multiplied with all these facilities and information service and sources available. Students expect the electronic system to find the information they want quickly while information should be easy to access and accurate. But in the real life things are different; users are disappointed and they receive less than they expect (Dunn & Menchaca, 2009). The situation is not different in Greece where users assume that with just a ‘click’ they could find everything. Electronic systems are complex and users should be aware and have specific skill to retrieve the appropriate information (Sitas, 2000). As Waldman (2003) found that:

‘...significant support about that students who frequent use the library more often are more likely to use the library's electronic resources; and for that students who express an interest in learning about the library's electronic resources will be more likely to exhibit higher self-efficacy’(p.16).

By analyzing the results from a survey on a class of freshmen, she found that:

‘...while age and gender were not related to use of electronic resources, self-efficacy was. Self-efficacy, the belief in one's capacity to act in order to achieve one's goals, was related in our research to a higher use of both the library and of electronic resources’ (p.17).

The Jubilee program supported by JISC in the UK concerns the EIS use. According to it research faces problems because the old means and ways research is done, could not be applied anymore and users are not very positive to participate and use the new means because of technological fear or because they are afraid of lack of knowledge or qualifications. The users’ attitude to the Internet is not always positive and some users prefer the printed version (Gannon-Leary 2001). Melgoza’s et al (2002) research revealed that:

‘The survey results show that for scholarly research or serious curriculum needs the use of printed materials is still popular among faculty and graduate students, while undergraduates primarily prefer to use Internet services’(p.32).

Shuling (2007) investigated on China universities and found out that the majority of the participants selects and uses printed and electronic sources of information.

A Patras University survey showed that: ‘a Greek user is more likely to be a male researcher or academic staff member aged 35 years old or under’ (Monopoli et al, 2002). Korobili et al (2006) examined the use of e-sources by academics among the

faculty of the Technological Educational institute of Thessaloniki. Their findings reveal that academics use more the printed sources than the e-sources. The e-sources are used more in the School of Business administration and Economics and mainly by young academics PhD holders. EIS induce different feelings on user groups and it is not always easy to be adopted and used effectively by all users.

4.4.3 Technical skills in digital environments

One parameter that the literature mentions has to do with users' qualifications needed for using the electronic services. Particularly, literature mentions lack of Information Technology skills and Information Literacy skills. Since 2001, Simmonds and Andaleeb (2001) proposed and tested a model to explain the use of academic libraries, concluding that:

‘...the use of academic libraries is influenced most by a user's perceived familiarity with the library and its resources; those who are more familiar with the library are more likely to use academic libraries’(p.630).

Working in the Jubille project Gannon-Leary et al (2001) found that:

‘...One theme which emerged from this cycle (one of the three part of the project) was the degree to which students and academics lacked the necessary skills to take full advantage of EIS’. (p.5)

In more details they determined these skills as:

‘IT literacy skills; basic knowledge of how to use computers, information searching skills; knowledge of the range of EIS available and the ability to search databases and the Internet efficiently and effectively, evaluative and critical skills; to make effective use of the information and information handling skills; to cope with the vast amount of information available, and the rapid change in sources and services’ (p.50).

Kebede (2002) in a theoretical article based on previous bibliography the subject concluded on that prior libraries should have checked the provision of EIS in terms of users capabilities because this could determine the usage level. He argued: ‘Users can accept EISs only as long as they are within their capabilities of access and use in meeting perceived gaps in their knowledge’ (p20).

Pantouli and Nikserlidou, (2002) made research about user qualification in two departmental libraries in Aristotle university. They looked for the users' ability to use the computers and the EIS. They found that: ‘students lacked the ability to use

computers and this affect the frequency they visit the library' (p.10). They concluded that students avoid using the EIS. Then another parameter which can affect the EIS usage is the language (Liao et.al., 2007) because users have to read papers in foreign language particularly in Greece (Pantouli and Nikserlidou, 2002).

4.4.4 Technophobia

EIS are addressed to various age and skills users, which mean that academic community includes a variety of ages, culture, knowledge background etc. Technophobia is a phenomenon, identified by literature concerning fear and avoidance to use any electronic service or even equipment. According to De Prado (2000):

‘...Little is said about the behaviour of the reader neither as an individual, nor about their reactions and feelings with the machines. Even less is mentioned about those having no access to the latest tools, those people for whom technical advances are a new barrier and who gradually become excluded from the cybernetic paradise’ (p.209).

Garrod (2001) wrote an article about how to link the effective use of electronic services and effective instructions with technophobia, which students, academics and staff are facing. Technological fears lay behind a number of comments in research by Lombardo and Condic (2000). Ray and Day (1998) believed that the problem of technophobia is coming from the lack of professional education of Information Technology and information Retrieval skills:

‘...most students acquired the skills necessary to exploit the electronic resources via trial and error or through guidance from other students, raising the question of the effectiveness of these skills’ (p.19).

Sami and Pangannaiah (2006) searched on techno stress phenomenon in library use through the literature. They found that:

‘...library users who initially find it difficult to cope with the new technology and experience anxiety (termed ‘IT anxiety’, ‘techno stress’ or alternatively ‘technophobia’)’ but ‘the various causes of technostress must be analysed, so that users can be trained to overcome technophobia’(p.429) .

A part from the age groups different attitude and the skills or role users have on the university community, gender is another parameter that probably affect their attitude

to EIS (Chowdhury and Gibb, 2009). Also Korobili et al. (2006) have shown that computer anxiety plays a significant role:

‘...And further in this study, women reported greater computer anxiety than men...Faculty with a PhD and less years of experience were found to be less computer anxious’ (p12-13).

4.4.5 Summary

IT skills are necessary in the current information environment. There is information explosion and lot of services and sources on libraries' websites. The process of electronic provision service is an ongoing task and goes in parallel with the technological development. Various services and sources are being developing in order to support or forecast users needs. Librarians' activation and creativity as well as the users' needs and requirements determine the level of the technology in the library's operation. As it is mentioned in the literature, an important parameter is the users' qualifications needed for using the electronic services. Particularly, literature mentions lack of Information Technology skills and Information Literacy skills. EIS are addressed to various age and skills users, which mean that academic community includes a variety of ages, culture, knowledge background etc. The phenomenon of technophobia, identified in the literature, concerns fear feeling and avoidance to use any electronic service or even equipment.

4.5 Teaching and learning

4.5.1 Learning & Teaching Theories

The teaching and learning process have been under investigation for a long time.

There are various pedagogical and psychological theories which affect them as well as their application into the school life. Pedagogy exploits and applies the achievement and findings of psychology, philosophy, sociology and humanities in order to understand how students learn and how they could learn more effectively. Figure 4.3 presents ‘The representative Theories of Learning and Their Implication for Education’ as they are formulated by Bigge (1982).

Nowadays the last two groups of theories affect the teaching and learning process worldwide. The Behavioral, the Cognitive/Constructivism and Social-cognitive and Humanities learning theories apply in the education. They have been developed and

expanded through the years. All of them have application to the teaching and learning process when teachers exploit their findings (Matsagouras, 2009). Moreover, the new technological means have reformed the ways teachers teach and students learn.

Since the end of the last century till now, theories about cognition have been linked with active students' participation in their learning. Although the variety of cognitive theories makes it difficult to classify and clearly distinguish them, they have a great impact on the current pedagogy (Jong, 2010).

The constructivist theories affect the learning and teaching process and they are pivotal in teaching development. According to constructivists, people build their knowledge according to their previous experiences. In more details, people construct their own understanding and knowledge of the world (Matsagouras, 2009, Fragkos, 1989). They support that experiencing things and reflecting on those experiences is the way to gain knowledge. Thus when we encounter something new, we have to reconcile it with our previous ideas and experience, maybe change what we believe, or maybe discard the new information as irrelevant and this is the learning process. In any case, we are active creators of our own knowledge, we affect on the context we learn and the way we learn as well. In order to do this, we have to ask questions, explore, and assess what we know (Piaget, 1973), communicate and interact with other humans (Vygotsky, 2008, Bruner, 1996).

Findings from constructivist and social-cognitive theories affect the way teachers teach and understand how their students have been learning, since the end of the last century. According to them, students should be active during the learning process. They are the center of their own learning. The teaching and learning process of the last century was based on the teacher authority and the education systems were teacher-centered. Things now are moving to a more student-centered educational process. This process is going to be more complex. It requires from students to involve in more personal learning activities. The huge amount of EIS via libraries and the Internet are quite positive in this direction. People's needs in distance learning and lifelong learning are motivated as well. This means that students have to be more active during the learning process while teachers have a different role in classrooms. In more details the term 'Active Learning' is linked with:

- Interaction through discussion

- Student to student/ faculty to student interactions
- Student presentations
- Group projects
- Simulations
- Problem solving

Siblerman (1996) presented the active learning techniques especially for older students and adults, including also notions such as brainstorming, case study, simulation, role play et.al. Active learning brings the students in the centre of the learning process, respects their personal experience and encounters creativity. There are many works in the field which advocate the active learning process productivity (McCarthy, J and Anderson, L. 2000).

Figure 4.3 Representative Theories of Learning and Their implications for education by Bigge (1982)

	Theory of Learning I	Psychological System or Outlook II	Conception of Humankind's Moral and Actional nature III	Basis for Transfer of Learning IV	Emphasis in Teaching V	Key persons VI	Contemporary Exponents VII
Mental discipline theories and substance family	1.Theistic mental discipline	Faculty psychology	Bad –active mind substance continues active until curbed	Exercised faculties, automatic transfer	Exercise of faculty of the mind	St.Augustine J. Calvin C.Wolff J. Edwards	Many Hebraic Christian fundamentalists
	2. Humanistic mental discipline	Classical humanism	Neutral-active mind substance to be developed through exercise	Cultivated mind or intellect	Training of intrinsic mental power	Platon Aristotelis	M.J. Adler Harry S. Broudy R.M Hutchins
	3. Natural unfolding or self-actualization	Romantic naturalism or psychedelic humanism	Good-active natural personality to unfold	Recapitulation of racial history, no transfer needed	Negative or permissive education centered on feelings	J.J. Rousseau F. Froebel Progressivists	P.Goodman J. Holt A.H. Maslow
	4.Apperception or Herbartianism	Structuralism	Neutral-passive mind composed of active mental states or ideas	Growing apperceptive mass	Addition of new mental states or ideas to a store of old ones in subconscious mind	J.F. Herbart E.T. Tichener	Many teacher and administrators
S-R (stimulus-response) conditioning theories of	5. S-R bond	Connectionism	Neutral-passive or reactive organism with many potential S-R connections	Identical elements	Promotion of acquisition of desire S-R connections	E.L. Thorndike	A.I. Gates J.M. Stephens

behavioristic family							
	6. Conditioning with no reinforcement	Classical conditioning	Neutral-passive or reactive organism with innate reflexive drives and emotions	Conditioned responses or reflexes	Promotion of adhesion of desired responses to appropriate stimuli	J.B. Watson	E.R. Guthrie
	7. Conditioning through reinforcement	Instrumental conditioning	Neutral-passive or reactive organism with innate reflexes and needs with their drive stimuli	Reinforced or conditioned responses plus stimulus and response induction	Successive, systematic changes in organisms' environment to increase the probability of desired responses	C.L. Hull	B. F. Skinner K.W. Spence R. M. Gangne A. Bandura
Cognitive theories	8. Insight	Gestalt psychology	Neutral-active being whose activity follows psychological laws of organization	Transportation of generalized insights	Promotion of insightful learning	M. Wertheimer K. Koffka	W. Kohler
	9. Goal-insight	Configurationalism	Neutral-interactive purposive individual in sequential relationships with environment	Tested insights	Aid students in developing high-quality insights	B.H. Bode R.H. Wheeler	E.E Bayles
	10. Cognitive field	Field psychology or positive relativism	Neutral-interactive purposive	Continuity of life spaces,	Help students restructure their life spaces- gain	K. Lewin E.C. Tolman J. Dewey	E.L. Deci M.L. Bigge J.S. Brunner

			person in simultaneous mutual interaction with psychological environment, including other persons	experience, or insights	new insights into their contemporaneous situation	G.W.Allport A.Ames, Jr R. May	D. Snygg D.Deutch S.Koch
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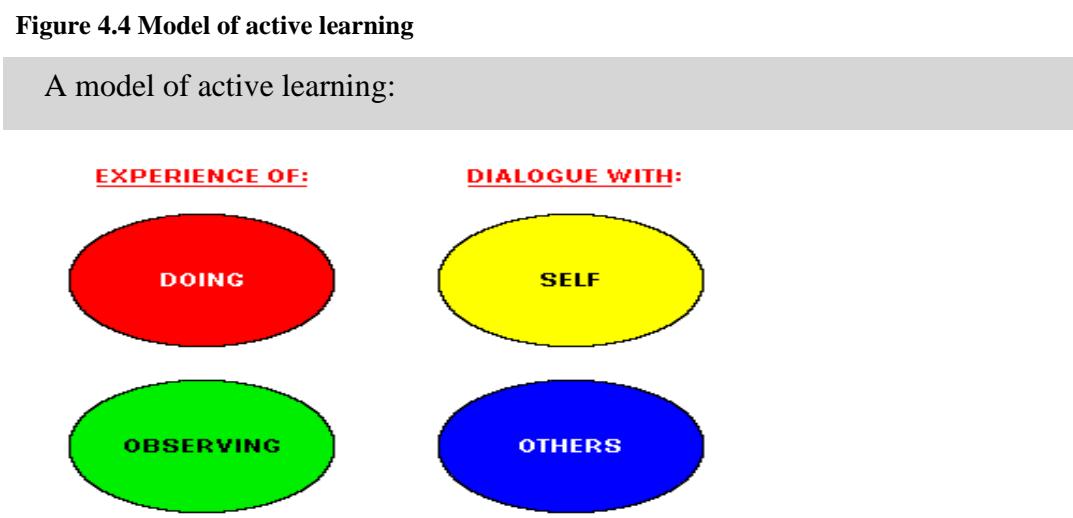
adapted by Morris Bigge, 'Learning theories for teachers', 1982

Passive learning process has been linked, referred, to students with:

- Reading
- Watching video
- Listening to audio
- Observing demonstrations (Active Learning)

Active learning involves students' action during the process. The student has to act and interact with information and the available tools in order to obtain the knowledge. They are not pathetic audience in the class who just collect the ready knowledge. Their role is dynamic (Figure 4.4). They have to do things alone, to observe things and to talk about them. They have to work in groups and learn in a productive way. They can reach the knowledge on this way and really understand the information. They can learn the process and they will not forget it. They will use it in their life and they will be prepared to encounter the future requirements in their working life (Silberman, 1996).

Figure 4.4 Model of active learning



Teaching is an area which is affected by and depended on the way students learn. There are various theories in the field of students learning and the way they learn.

This process is called 'learning styles'. According to the 'Creative Learning Centre':

'A learning style is the way in which a person absorbs and retains new information, in other words, the way in which you learn'.

There is a variety of student learning styles. Moreover their styles could change during the learning process (Felder and Solomon, 2004 and Felder and Spurlin, 2005). Teachers should consider their students learning styles. So the teaching process could be transformed after this consideration and achieve better student learning.

The learning process involves any mean which could affect the cognitive results. This process gives an essential role to the library. An environment like this requires a library which has a predominate role in the teaching and learning process. Simons et al (2000) describe their experience in a USA university library. They supported the idea of ‘learning library’ which is based on four interwoven strands of communication and interaction among students, faculty, librarians, information resources, and curriculum. They argued that ‘learning’ is happening through social interaction, while learners move through increasingly complex zones of development through the assistance of more capable others, and that real learning is situated only in specific cultural environments. Thus, the library can operate and underpin this policy in the university environment.

4.5.2 The Greek context

The Greek educational system is based on a passive learning process. Memorisation is the basic way to get through any education level. In higher education, this is a desirable ability as well. There is a reformation in primary and secondary education which proposes the use of teaching methods that develop critical thinking and the student’s self education process. These new curricula have entered education promoted by the Ministry of Education over the last two decades, but still the learning process is affected by the old teaching process (Zambeta 2002a; Zambeta 2002b). The curricula include active learning process while they engage students in ‘the method of project’ by encouraging them to work in groups following the principles of active learning. This method, as Frey (1986) has shown, concerns the arrangement of the teaching process as a project of gradual learning which is based on students questioning-searching-discussing-assessing-searching-reporting-assessing. The role of the teacher is supplementary, as part of the group. The group decides the subject under investigation and, the process to fulfill the task. Other teaching methods are brainstorming, discussing in groups, investigating subjects, and problem-solving. The teacher uses the ‘DEPPS’ and the ‘flexible time’ which is included in the teaching

schedule. This gives them the flexibility to apply more active methods to help students learn. These are some of the innovations in the Greek education process applied in recent years at the primary and secondary school level.

Higher education in Greece is self-organised. So in this teaching process not even the Minister of Education cannot command their way of operation. The Universities and Technological Institutes have a mission to fulfill and they can do it in any way. These organisations have the mission to support constant improvement, with respect to the quality of the provided services. They have to ensure the appropriate conditions favoring the attainment of their goals. The basic goal in the tertiary education is to strengthen the social efficiency (Eurybase, 2008). Of their teaching methods, the Ministry of Education asks for: 'In the context of tertiary education, teaching methods and teaching aids are established by educational institutes'. So the decision making about the way they teach their curriculum is upon the individual institute. The curricula in tertiary education are elaborated by the institutions and are approved by the Ministry of Education and Religious Affairs, Culture and Sports. But in the Architecture schools, according to Gospodini and Skayannis (2005):

‘...education suffers from a conservative and inflexible institutional framework that needs to modernize. Improvements in the institutional framework should aim at a dialectic relationship and a creative interaction between planning practice and planning education, following successful international paradigms from European and North American countries.’(p.356)

They talked about curriculum reformation in the planning schools and proposed the emergence of more practice modules. They supported the necessity to use experimental education in order to achieve better student understanding.

Things now are progressing. Universities are under pressure especially after the support European findings. So:

‘The last period of the Operational Programme for Education and Initial Vocational Training II (EPEAEK-II) in the context of Community Support Framework III reinforces that universities need to develop and change their facilities and their teaching practice in order to meet the international requirements’ (Eurybase 2005).

They required by them to provide students with the same level of education through the Europe. In more details, the Community Support Framework III reinforces the following:

- University actions that will help strengthen knowledge and information technology skills
- the development of new laboratory and seminar content in courses;
- the development and adaptation of printed and electronic teaching material
- the use of many information sources
- the strengthening of the institution of multiple bibliographies throughout the learning process
- the creation of portals per group of similar fields of knowledge
- the reinforcement of the capability of universities to publish textbooks by themselves
- the development of electronic material for teaching, practice and examination purposes on specific websites
- the supervision of self-teaching or teaching in smaller groups as additional possibility
- the allocation of teaching environments; the development of virtual laboratories, etc

The academic staff which has the responsibility of making formal decisions in their field is the permanent staff. The members who have the most influence and power are the older members of the staff and as a consequence they are not very positive about innovations and changes. So the ‘age pyramid of the academic staff’ affects the departments’ decisions and attitudes. Gospodini and Skayannis (2005) had shown that:

‘Academics belonging to the base in the age pyramid, and usually being at lower positions in the academic hierarchy, make more effort to introduce new approaches and new concepts into their teaching and research practices.’(p.357)

It is clear that reformation in the field of the tertiary education is necessary. This reformation has started in the pre-school and primary education via the ‘New school’ as they call the new way of school operation and curriculum (Ministry, 2010). But currently the economic and political conditions in Greece are constantly changing. They are many funding reduction in the education system and in the libraries as well.

4.5.3 The internet in the life of Greeks

The Internet and state-of-the-art technical equipment are relatively new in Greek life. The technology has emerged but it has not spread to all parts of the community and in the same level. Technology costs money and requires specific skills which people do not have. Computers and use of Internet are not very popular in Greece although the usage level increases very quickly. In 2000 internet usage covered 8.6% of population (Metron) while in 2003 27.1% of population used computers and 19,9% the Internet (Sepe). There are users in the schools and universities. They are the biggest part of internet users. Those aged between 18-25 years old use it and they do it for communication and entertainment. Some of them are using it in schools but the big majority uses it at the ‘internet café’. Semertzaki (2008) agreed with this picture and investigates into librarians’ use Internet. She concluded that Internet penetrates in libraries and librarians life while it is going to be an essential tool in their operation.

There is a difference in the internet usage between the two genders (Christidou 2006). Boys tend to use it more than girls. This picture is not always straightforward and is affected by other parameters like accessibility and the role of the sexes in the community (Papastergiou & Solomonidou, 2005). But even in their studies the two genders seem to choose different subject areas with boys preferring computing course (Christidou 2006).

Technological equipment seems inadequate to support school needs. According to the European Commission:

‘It appears that action is urgently required in the area of ICT equipment improvement in Greek schools. Although virtually all schools are equipped with at least some computers in Greece, the above results suggest substantial scope for further ICT equipment installations and ICT-infrastructure improvements (only 13% of schools have a broadband internet connection) in Greek schools such as an increase in the number of computers in total and per pupil. On the latter indicator, Greece with 7 computers per 100 pupils ranks dramatically below the European average of 12.’ (European Commision, 2006 p1)

4.5.4 Student outcomes

The learning process and the cognitive outcome is the subject of considerable research throughout the world. Better ways of teaching are being investigated and researchers are reconsidering their understanding about the way humans learn. The whole process of higher education institutes operation is not stopping at the pedagogical theories

application. Higher education institutes have to justify their existence and substantiate their expenditures. This attitude forces universities to assess their effectiveness and their operation.

Research upon students' outcome defines their education results. EIS can have a great impact on the final students' knowledge and prove the importance of the library's role (Pickard 2005). There is a lot of research in this field internationally. These deal with the students' final knowledge after graduation and student satisfaction. They help administrators and the university to identify their real needs and to reconsider their policy. University assessment is partly applied according to Fasoulis (2010).

Assessments are a new element in academic life and under supervision of the Ministry of Education. For the present, it finds resistance from the academics side.

4.6 The literature content and the arising questions

The literature review covers the EIS usage and all the parameters which affect on them. The educational system and the way of learning in Greece, although it is under reformation, it has all the characteristics of the traditional way of teaching and learning. Government tries to change it by encouraging students to use Internet at least more than they were using it in the past. EIS are under search for a long time and they are changing continuously. User satisfaction is the main intention for professional and information services. One way to reach that goal is to assess services and conditions, in order to offer it successfully. Accessing the services is still an important point for providing EIS effectively, including the case of users with special needs and skills.

Information seeking behaviour has not been investigated in depth in the universities libraries in Greece. Also, information seeking behaviour in EIS is an area which has not fully examined in the Greek context. The EIS proliferation is combined with new requirements and user demands. The university libraries try to be updated in terms of the technological services and sources but do they have the appropriate management background to achieve effective provided service? Are they users ready to use EIS and are they adequately supported to face the challenge by the EIS nowadays? What is the real interrelation between provided EIS and users' needs? Moreover are EIS

necessary for users covering their needs? This work intents to give the answers in this area.

5. Analysis and findings first phase

5.1 Introduction

This section presents the rich picture of the fieldwork and the data analysis. It presents them as they were coming up during the research field. The observation data, including events during the fieldwork and personal interviews have been used to construct and represent the conditions in the research sites. Calendar lists have been provided by researcher to librarians and the data are part of this chapter as well. Finally the telephone interviews which are presented in next chapter complete the picture by providing data about educational demands and needs. The data analysis has been done by using NVivo, as has already been mentioned. The process of data analysis includes coding each of the participants' responses and split them in sub-subject. In the next stage, the researcher synthesises them again under wider categories. The data analysis comprises two chapters: the first chapter includes the related-to-EIS accessibility and IT skills data. The second one concerns the education system and the related information with teaching and learning process, the role of exams and assignments as well as the role of bibliography.

One of the research objectives is to review the EIS availability and their use in Greek higher education. The literature review and a tangible longitude research investigation of the Greek university libraries' web sites confirm that there are many EIS offered and this is increasing rapidly. The data collection and analysis reveal the EIS use and the effectiveness of those services. The nature of users' need was illuminated by the literature review in terms of the more general aspects and conditions but the local detail and depth of use is discovered and mapped by the empirical data collection. The next objective concerns the profiling of users in the case study sites and exploring their patterns of use and how this is integrated into their educational context. The final objective was to identify the relationship between librarians and users; this investigation has revealed the relationships between librarians and users in the delivery of EIS.

The main intention of this research is to investigate EIS usage but it has emerged that a significant factor in the use of these resources is the pedagogical philosophy which underpins the role of these resources in the educational process. This discovery is the result of the iterative process during the data collection, the data analysis process and the literature review. The focus in the beginning of this research was the EIS and their

usage in the library or in any other place that could be approachable. The literature review drove the researcher to be focused on some points such as accessibility, users skills, users needs. The data themselves drove the researcher to concentrate in more depth and to expand the investigation to the wider context. The users' needs became the first point in this qualitative research and led to reach the education system and the educational real demands in relation with the EIS. Then they access EIS- in terms of their IT skills- in order to fulfill the educational requirements. EIS usage is intrinsically linked to the educational philosophy of the university as well as the needs and skills of the users.

The researcher before the fieldwork knew a few things about the research sites, their needs and conditions. The literature review supported the research process and has provided the researcher with insight and understanding of the phenomena. The real conditions and the data collection gradually build and create the final form of this research.

It is qualitative research and its intention is to present the participants' world. This situation concerns the local sites and the researcher does not intend to create a theory of this research. But still the participants' testimonies are important, the observation data and the telephone interviews present their world which can be applicable onto other similar conditions.

This section illuminates the conditions of the EIS usage in the context of the two academic libraries studied. The current research is also user-centered which means that users are in the center of this investigation.

Themes which emerged through participants' testimonies are presented in four major headings: EIS, accessibility, IT skills and education system. The following section is split into these four parts. The last one covers the next chapter because its importance in this research. The cornerstone theme of this research is EIS, which is supported by the research with rich data about EIS usage, user support and the librarians' attitudes. The first one includes information about the users of the EIS, including; which they use, why and what they believe about them. User support sub- theme includes testimonies concerning the ways that users are supported in order to use EIS either personally or during formal user education courses. Participants explain their needs to be aware on these new services and improvements. Under this theme there is a great

deal of information about personal opinion on user education and whether they consider participation important or not. The last sub-theme on this area concerns librarians, including testimonies upon their awareness about EIS context and the way they promote them.

The IT skills theme is coming up next and includes information about user skills needed for using computers effectively. Participants' testimonies provide a plethora of information about their skills, how they obtain them and participants' opinion on students' skills. The last one came up by librarians and academics.

More practical issues are included under the theme accessibility. It concerns the user possibilities to reach the EIS and includes the sub-themes: location, technical and system problems and access problem to approach the information. It also covers evidence about technical support and IT service staff. Finally, the data provide the information about access control. Librarians control the user access in the library in order to protect their catalog usage.

5.2 EIS

This part of the data analysis goes into EIS usage as part of the library operation and users services in depth. The aim of this research is to inform the development of EIS and their effective use in the Greek higher education libraries in direct relation with the educational reality. So the EIS have to be searched in depth and users behavior to be analyzed thoroughly. This section describes the information about them which is collected during the fieldwork and the literature review. The EIS have been reviewed in the literature. The findings show their delivery and use in order to complete objectives of this research. The technological evolution during the last three decades has had multiple effects upon the library operation. Users and librarians have been affected by many rapid changes. The users should have the skills to use EIS and as well as the librarians if they want to promote the service. The services are there but who use them and why? How do they use them? And are they supported when they use them? Do they know of their existence and what is the promotional role? Furthermore, what action do the librarians take to achieve better usage?

5.2.1 Who the users are

This section describes the type of EIS users according to the participants' testimonies. The information is coming from all the sample parts supporting the research objective about the users and their profile.

5.2.1.1 Architecture

The users of the library are mainly students and academics and they both use EIS as librarians said. Any library user has to use the catalog at least. According to participants' testimonies and observation findings in the field, the most used EIS is the catalog:

ar-l-w-1

'31: The students and academics use EIS. We also have external users. Mainly architects with their own offices... Many times, students from private collages, or other faculties come and use the library. '

ar-l-w-2

'97: I could say users are mainly PhD students, undergraduate students ... postgraduate do not come so much. '

ar-l-w-3

'22: All the students and academics. We also have external users but they do not know how to search....'

ar-l-w-4

'86: ...there are lots of individuals - students in Erasmus programmes. '

ar-l-m-5

'29: the higher percentage is the academics, students of the department, postgraduates and a smaller portion is external users. Users are professionals who have completed their studies in the faculty... Very few students of other university departments which deal mainly with history of Art are library users. Some other faculties' students deal with similar subjects.'

ar-obs 12-18: Users are mainly students. No academics have been in the library for weeks. Only two academics have been in the library during the observation. Few external users come in the library during the fieldwork.

ar- obs- 22ext: Researcher met a professional architect who wants to find some information and came to use the library.

The users are mainly students, academics and some external user who used to be students in the department.

5.2.1.2 Philology

This school is more theoretical compared to the architecture. Not all of the academics have computers in their office. The computers in the library are not in good condition and the library provides a card catalog. So it is not necessary for users to be engaged in EIS usage at all.

ph-l-m-1

'16: The users are the librarians, the academics less and postgraduates even less. Undergraduate and graduate students do not use them at all. Well they use the catalog. They use it even if it is not extensive. Student undergraduate and postgraduate and academics use EIS very little; some external users are with the Erasmus program.'

Librarians are named themselves as users in this research site. Because of these special conditions, the situation in this library in terms of EIS use follows:

ph-l-w-2

'222: Few undergraduates use the catalog Also academics who have been abroad or whose subject is European literature, foreigners, they are more open minded than the rest.'

Then Academics with experience from abroad in using EIS, ask for these services and they are more demanding. Participants report the school teachers as users as well.

ph-l-m-5

'73: Only, very few are external users...the majority is from the schoolteachers. The internal are the academics and PhD students. A lot of the academics do not come. They do not use EIS. Those who come (and sit at the computer) know how to use electronic databases.'

The academics do not come in the library in this research site as well.

ph-l-w-6

'30: Postgraduate students, academics and usually individuals that are actively involved in some degree with research tasks.'

So the users have no access in their home and come to the library to find the information they need.

ph-l-w-8

'82: If somebody uses them, it is a postgraduate student. The academics do not come here to work.'

ph-l-w-9

'120: I could say that postgraduates are more familiar. ... They work slowly with the electronic journals. They also search in the 'Zefyro' because we also have inter-library loan.'

phi-obs 1-7: 'No user is searching in the catalog'

Observation comments on the field do support the participants' testimonies. Users do not use the catalog very often. Usually they are same people every day- for example one of them was a postgraduate student, struggling with the EIS usage.

phi-obs 5: 'An academic comes into the library helpdesk and ask for help'.

Here, the observation confirms the librarians' description about the academic use of the library.

5.2.1.3 Summary

All the library users in Architecture have to use the catalog so they are EIS users. In more detail, participants report that EIS users are undergraduate and postgraduate students who have assignments. Postgraduate students do research so they have to use EIS. The same applies for students under programmes e.g. Erasmus students, in the architecture department and the other departments as well. Academics are regarded as users as they have at least to use the catalog if they want to use the library. The academics make up a large proportion of the usage. Furthermore, there are some external users who do not use EIS so much. There are few external users, professionals and students from other departments.

Therefore, in the Philology department, participants report that EIS are not used so much. There are few EIS users in comparison with the real number of library users. Few students use the catalog and they are not very familiar with it. Students under a programme scheme (e.g. Erasmus) use and ask for EIS. Postgraduates use EIS more and they are more skilled. The academics use some EIS but not all of them. And there are few external users, mainly teachers coming from the primary or secondary level of education. An important point comes up from their testimonies and it is that users are people who have no Internet access in their home. Table 5.2.1 presents the summary of the data.

Who are the users		
	<i>Architecture</i>	<i>Philology</i>

Librarians testimonies	<ul style="list-style-type: none"> • Students and academic are the actual users • PhD and postgraduate students • There are also external users but they do not use EIS 	<ul style="list-style-type: none"> • Students at postgraduate level are the EIS users and few undergraduate users. • Academics do not come to the library to use the EIS • There are external users who are not always skilled • There are Erasmus students who ask for EIS
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Table 5.1 EIS-Who are the users

5.2.2 Usage

The information in this section comes from participants' testimonies during the interview process while the list information about library usage and EIS usage is presented below in a different section and in detail in the Appendix 9.

5.2.2.1 Architecture

The research has as its main intention to discover the essential EIS usage in order to estimate this service. This part of data is important to complete its aim and objectives. Participants talk about EIS and describe their relationship with EIS: a variety of usage habits are presented in participants' testimonies. Academics seem not to be informed about the EIS. They are not familiar with them and some of them they do not even know them. On the other hand, there are some academics who are very active users.

ar-a-w-1

'176: I do not have access to such things (electronic information). '

ar-a-m-2

'52: The Heal link, is it a journal? I do not know. I look at the foreign sources that I have. I have personal subscriptions I use the electronic catalog of books and journals but I do not use links in the web page. For example how could I use this citation index?'

ar-a-w-5

'93: I use the catalog, the web pages at certain times. ... '

And she said:

'141: Oh! I have not searched in so much depth.'

2ar-a-m-3

'96: I enter and I check journal every where I can find material.'

ar-at-w-3

'60: I use the electronic journals a lot...and students do as well. I have been registered for ... alert services which send me any news coming out...'

While about students' usage habits, academics believe that students are stronger EIS users than themselves.

ar-at-m-1

'26: Electronic journals, the students use naturally. ... but in the discussions that we have with the children, it shows that they do not face problems using EIS or computers, they understand what we're talking about'

ar-at-w-1

'58: Of course, of course they use electronic services.'

ar-at-m-2

'98: They could also have an electronic bibliography I imagine and electronic information and printed.'

ar-at-w-2

'62: I believe that they use the electronic services of the library.'

ar-at-m-4

'64: Students use EIS, of course. I do not use them. About electronic journals, I do not know. These are for the children, for our students that are from the generation of computers. We are from the generation of books more'

Participants have a prejudice about their students' skills and EIS usage habits. They consider those students to be more qualified to use them than their selves. Students are the big proportion of users which have to use at least the catalog. They have obligations and they need to use them in order to complete their modules. About themselves, students say about the EIS usage:

ar-s-g-5o

'92: The truth is that now, because of the assignments littlee not so much, but we found good information... we do not use them systematically in any case.'

additional participant

'22: I know the one that you put a keyword and find the book in that catalog. I do not know what you're talking about.'

Although they are in front of a computer when they talk to the researcher students seem to have lack of confidence about their skills. They are just struggling to use the catalog because they have no other choice.

Librarians say about EIS usage:

ar-l-w-1

'212: I believe that they do not exploit this. In particular they do not use them except for the catalog.'

ar-l-w-3

'74: Of the EIS, they use the catalog and a few times these journals through the Heal link.'

So they EIS users are not very skilled and they only use the catalog. This picture is supported by the observation notes as well.

ar-obs 10: '..students are the users today as well'

Comments on the observation about the users' population make clear that students are the main users at least on the catalog in the library site.

5.2.2.2 Philology

Testimonies of users in the philology school illustrate the EIS usage in their library. The important on this site is that there are not so many computers in the library area. There are two and one of them which do not work properly. There are computers in most of the academic offices. Academic participants who use EIS say:

ph-at-w-1

'70: I use the EIS. Now as we speak I am in front of the computer.'

ph-a-m-2

'12: I use the library catalog despite the problems that we have with the Macs. I have seen the program Muse. I don't know everything concerning the humanity sciences.'

But there are academics which do not have a completed picture about the EIS content although they have a positive attitude on them. One participant says:

ph-a-w-1

'7: This (J-stor), how could I find it on the Internet or in the library? And where are all these journals and the books?'

phil-obs15: *'Difficulties to find academics which use the EIS or have an email address.'*

phil -obs 31: *Describe an event during the interview with an academic: during an interview an academic who shared a room with another one, the second came in the office and ask me to go because she did not think that my research concerned her interests and ask me to be back when she would be away'*

The researcher encountered rude behavior during the interview because of the subject of the research. The academic did not have a computer and were negative in having any discussion EIs and computers at all.

Student participants who are not users have nothing to say on this question. Only the postgraduate answer:

ph-ps-g

'23: Yes whenever I need it I enter the Internet at home. '

phil-obs 12: *'...no students in the computer, just few try to use them, all the students are in front of the card catalog'*

Observation supports participants' testimonies and confirms that they do not really use the EIS even the catalog which they need.

The librarians describe users' habits and spread light on the EIS usage in their library:

ph-l-w-2

'226: The user knows very little about the electronic journals.... Also, we do not know everything in some cases...We are undergoing many changes.'

ph-l-w-4

'12: The users seldom ask for electronic information. Usually they ask for information and they wait for an oral answer. They use the catalog, that's all.'

ph-l-m-5

'101: The users here use the EIS and specifically the electronic journals. Many of them know the Heal-link and use it directly and we show it to the rest.'

ph-l-w-7

'26: Of course they can use electronic services. However they do not use all of them. Familiarization does not exist. They do not know their usefulness.'

The participant continues:

'206: The users do not ask either for electronic addresses or other electronic services.'

ph-l-w-8

'18: They use them but ...they use them when they need them. Most do not know how to use the system 'Horizon' that exists in order to search the books in the university.'

Librarians argue that users and especially students could use the EIS but they do not do it because of lack of skills –something that it is not true. This picture is not confirmed by the observation in the library while very few students, mainly postgraduates, use them and their interviews support this option.

5.2.2.3 Summary

Then some of the academics in Architecture declare that they do not use ‘such things’ or do not know about them at all. Some others use the catalog and the EIS adequately. About students, they believe that they use EIS and the Internet and they do not have a problem in using computers. The students use the catalog and they do not know the rest of the EIS as they say; the observation in the field is confirmed. Only in their final year, when they have assignments they have to look at them. The librarians believe that users do not use EIS, except the catalog and a few journals.

There are participants in Philology who use everything concerning their subject. They are informed about them while there are others who have no idea about EIS. The first ones know and use the EIS even if this usage is not in depth while the last ones know and use, at most the catalog. The librarians believe that users do not know the EIS possibilities and they do not use them extensively. Users have no queries about EIS while one of the participants argues that they cannot use properly even the catalog. But there is also the other side, where the users know the electronic journals and use them when they need. Table 5.2 presents the summary.

Usage		
	<i>Architecture</i>	
Academics	<ul style="list-style-type: none"> • They do not use them so much • They use them extensively • They are afraid of them and think they are not suitable for them • They believe students are more skilled 	<ul style="list-style-type: none"> • Some of them use EIS even if this use is not extensive

	and use them	
Students	<ul style="list-style-type: none"> They use them, particularly the catalog 	<ul style="list-style-type: none"> Postgraduate students use them
Librarians	<ul style="list-style-type: none"> They believe that users do not exploit the EIS as much as they should Users have to use the catalog 	<ul style="list-style-type: none"> EIS users are mainly students at the postgraduate level as well as few undergraduate users. Academics do not come to the library to use the EIS

Table 5.2. EIS-Usage

5.2.3 Data coming from lists completed by librarians

5.2.3.1 Architecture

The academics participants present a full scale of EIS usage habits. There are some who do not use EIS even the catalog but others are more frequent users. Definitely all participants use printed information sources with the exception of one participant who considers himself that he is not using them so frequently. That means users are accustomed to be in the library and work there but still are not very familiar with all the EIS. The catalog is the most used EIS. In addition, the participants use more or less the rest of the EIS. There are of course participants who use extensively EIS and work frequently with them or even in a daily basis.

The students' participant sample present to be EIS users in relation to the year of their studies. In the beginning of their studies they use printed information and only the catalog. They are used to use books and printed information. Gradually and particularly in their later stage of studies they are more aware of them and they use Internet and library' EIS. Two of the participants say that they do not know that the library has so many electronic services although they are in the later stage of their studies and they use Internet to find the information they need.

5.2.3.2 Philology

The academic participants in this department use printed information sources but also some of them use the electronic services. Two of them do not know the library's EIS

and use the Internet instead of them while one says that she has not the skills to use them. There are active electronic information users but also participants who use catalog as the only EIS of the library. The picture in this research site is not very EIS friendly. Academics struggle to use the EIS and they do not seem to have the skills or the equipment to do it. Some of them still do not have computers in their office. The existence of the card catalog in the library is another factor of not using the EIS. Some of them realise that EIS are helpful and they try to approach them.

The students' sample in this department presents a variable picture. The difference of usage level in relation with the studies level is obvious in the context of the two different education levels. The postgraduate students are using most of the material in printed and electronic form. They know the services. The undergraduates use the printed material and very few of them make use of the electronic sources. They do not even use the catalog because there is a card catalog and they are not accustomed to find the information in an electronic way. In the beginning of their studies they are not using electronic services while gradually they use them more and they are aware of their existence.

5.2.4 EIS criticism

5.2.4.1 Architecture

The academics are generally positive about computers and EIS. Their position and background requires them to be innovative but they are still human and they are not all the time positive to changes. Their answers represent their opinions and feelings about EIS use. Participants consider that through EIS they do not have to be dependent on a printed book or a journal. They are independent to use them in their office and update their information database on a subject quickly. Of course their opinion depends on the grade of EIS usage as well. So they say:

ar-a-w-1

'35:EIS are more useful I believe, I imagine that we will be more efficient instead of searching the books in the library ... I believe this and it is faster.'

ar-a-m-2

'194: ...while you are sitting in your chair information can be easily accessible... It is also all this briefing that you have. You know about your work and about other

people's work. If somewhere there are common points, if somewhere they are precisely the same or they aren't...'

Between academics there are some very enthusiastic with the EIS. They use them extensively. They have being part of their academic life and necessary to fulfil their tasks. A very enthusiastic point of view is presented in the following testimonies:

ar-a-m-3

'87: Here I have, in a moment, what I want. I have it and afterwards I do not lose my thoughts. I can do my work better. Thus we gain quality of work.'

2ar-a-m-3

'132: They are very positive, generally very positive. They allows us to be informed quickly if something has been published, or many times you also find the summary... even pieces, if they are electronically available, in days after their publication. ... This is very positive without question...'

ar-a-m-5

'147: I have found 2000 articles. ... My work is this. What therefore I have? I have a catalog in the computer with these articles, the summaries etc in particular, I have also organised a database. This is useful.'

Although their attitude is positive and they believe on the EIS importance they are sceptical as well. Also, they feel that they cannot protect their students of the 'waste' information and they say:

2ar-a-m-3

'There is chaotic information and you search and you find everything. I like it and I believe that students like it more still... There is 'rubbsih' there. You should distinguish the rubbish... the students should begin in a more systematic way.'

ar-a-w-2

'151: ...It is facilitation,... And in quantity of information. The quality I believe is in the scientist and how someone can filter and take the important things.'

Another point which has been mentioned is that they information all alone is not enough to ensure the quality of a work or to ensure the depth of knowledge:

ar-a-w-1

'120: But it is not enough, however, if one remains on the surface of information and he/she does not go into-depth in the information..'

Academics express the fear of losing previous information as they believe that the electronic information is going back ten years and they do not trust this framework because it could be moved or lost from a database. Thus it is a problem for them and they did not accept references from the web sites:

ar-a-m-4

'123:.... There is a big problem because information is not available for example, from more than 10 years ago. If you cite information in a bibliography, after a while the site can disappear, or be altered. ... They have very big bibliographic citations and I try to work with them in a way that would be scientifically equitable. This is a problem and this is a question.'

ar-obs 25: Academic who is responsible for the library's operation express the fear of the electronic information validity and reliability? He mentioned that they do not accept almost till the time of the fieldwork the electronic web citations because they believe that students could not check their quality.

Academics do not accept the electronic references citation just because they do not trust them. Now they accept the important role of the EIS and the information found in the Internet but they still hesitate to complete link their work with them. They still have old habits and they cannot accept these changes at once. They recognise the EIS positives particularly when they use them not very often. They are not accustomed to them. They cannot control them because they have many students and they do not have enough time to check all the assignments. Moreover they are not sure that students can cope with the amount of the electronic information and produce an effective work. Their doubt about the students work is associated with this huge amount of information in electronic but also in printed form. Participant extensively talks about his experience:

ar-a-m-4

'191: There is more information, too much information, which today we all have in printed or in electronic form. The quantity of information today is excessively big. This is also good and bad. ...'

Meanwhile a participant argues on behalf of the printed information sources. She does not refuse the importance of the electronic sources but she believes that the printed last longer and they are perpetuate.

ar-a-w-5

'181: Er, they are important but I do not believe that they can substitute paper, the printed source. It is very important that they exist. But I do not believe that everything can be replaced by the electronic form, because I have been in the academics committee discussions... because some new technologies expire we do not take everything, journals for example, that we find electronically.'

Some of the participants complain and talk about the difficulties they face to use EIS and they explain:

ar-a-w-3

'33: It is very tiring to read the information in electronic form, especially databases. I have sometimes entered special databases at inquiry centres but I cannot say that I have done important work...'

Students are positive on EIS usage. In the same time they are sceptical about their role in the studies. They say about EIS:

ar-ps-b

'86: ... being on the network and the Internet cannot be compared to the simple collection of information with the traditional way. The information however, I do not believe... that they influence the knowledge. ... You have fast collection of information, this is important....'

ar-s-g-1

'155: It is essential but EIS should not be the only information source. We are coming here and could be informed by all means in any form but simultaneously through the computer.'

Additional participant

'114: The electronic services could influence the content of the knowledge... of course they could but I do not know if they would change it for the best. Now you have a possibility of being informed anytime but I do not know the level of knowledge.'

The positive advocates are enthusiastic and although they do not use them in depth so they do not have a personal opinion. They express positive attitude for them. They do not have any other way to find the information they need and they are used to find it through the EIS even if this concerns only the available information via the catalog.

Of course there are positive opinions and they are more concentrating on the easy access and how quick it is:

ar-s-g-2

'32: They are more functional. I believe that they could be useful.'

ar-s-b-4

'84: They are useful, all of them, without exception even if I do not know them, I imagine so.'

ar-s-g-4

'162: If they did not exist there is no way to find your way in your library and even what may exist in other libraries, I'm saying, they are 'cornerstone' in order to do your work.'

ar-s-g-additional

'148: Electronically, use of the library is easier and many can be located more easily. I believe that they facilitate life generally that it is easier to locate information.'

A student participant confessed that she used to have problem to use them but now she can recognise their usefulness.

ar-s-g-5

'401: I believe that EIS are a very big help. In the past I had a bigger problem, I believe it is a problem to search and take photocopies. I think they are convenient sometimes. I would also want to have encyclopaedias in electronic form and to find them in the university because it is not easy to pay for the cd-rom. We should find them in the university.'

Even though students are not EIS users-except on using the catalog- they understand the possibilities behind the electronic services. Their opinion about them is positive although some of them do not have the skills to use EIS properly. This is in contradiction with the academics and librarians opinion about their skills and familiarization with computers and the Internet.

Librarians' testimonies about EIS vary. They argue on their usefulness because they know more or less the EIS and their possibilities. They use them, for personal reasons and they appreciate their contribution, in brief:

ar-l-w-1

'190: ...They are a lot of help.'

ar-l-w-2

'209: ... I believe that it is a very good tool. I would say personally that they are very useful if you can search properly and do not get lost in the information. If you can search, in an organised way, and distinguish what you really need in the various information then they are useless. I do not know them well and I do not want to say more.'

ar-l-m-5

'126: I think that they are important.'

5.2.4.2 Philology

This research site is special because there are no access points in the library and all academics have not got computers in their office yet. They talk about EIS as they think they are. Some of participants have a general idea and try to answer about the EIS usage. Some other who use them talk about their opinion. They support:

ph-a-m-2

'70: They are good, very useful. Of course I am not a very good user so I could not say if they could be better.'

ph-a-w-3

'141: I believe that they have value. Theoretically speaking, I believe that they have big value as they give you unlimited access to the knowledge, which you search. I do not dispute their worth but because I do not have direct experience I cannot speak concretely about the effects.'

Participants explain their difficulties their problems with EIS. The huge amount of information has been mentioned in this research site as well. They mentioned power cut problems and their effect on their work. They express their fears but they recognise the EIS usefulness not only because of the information but also as a tool in their job:

ph-a-w-1

'15: I have to spend a day to locate all the information I think that all these things help but no as much as I want. In the final end, they complicate our life...It is another thing to open the e - mail and communicate instead of searching the library everyday to find what is new. None can work without them of course. ... Everything becomes very fast via the computer. Also you can immediately take extracts through the computer and make a copy, precisely. It is a very important tool of work.'

ph-a-m-3

'92:I find it difficult to do research without the computer. They provide useful facilities helping me very much of course despite the known problems. Sometimes I hit the wrong button or there is a power cut, and you lose everything because you have not saved it, such things, yes, with all these small problems. '

Users estimate the role of the EIS in their everyday work. They think of EIS as all the electronic services which are available via their computer. The researcher tries to focus them on the library services but they do no have very clear picture about what is in the library.

Student's access on EIS is restricted due to several factors, compared to the academics. They have no personal experience of EIS usage at all. Very few of them use the catalog in the library, in the central library or have access on the EIS at home via Internet. They are confused on EIS and computer facilities although the researcher explains to them the relevant terminology. They talk about them according to their experience and their imagination:

ph-ps-g

'529: They are incredible but I personally am not used to put all these windows in order and somehow it bothers me that I have to move from the first to the second, from the second to the third, from the third to the fourth...'

ph-s-b-1

'102: They would help me. Sure they should exist. You can find anything you are looking for in a few moments. Sure. Simply, I have not used them, ... They should be extended and available.'

ph-s-g-1

'47: They will help us too much I believe we also find certain information that is useful. They could organise our work, they will become and specifically the department of literature it requires them. A computer would help us much more in this and we also can find more information potentially on a particular book.'

ph-s-b-2

'85: Above all they are facilitation. Sure they have an impact on our studies. Of course I prefer to read a book than to go on Internet. In certain cases however they help.'

ph-s-g-3

'127: I believe that there is not a lot of information on my subject but you can easily and quickly find it, immediately. I would say we have not learned to search in such a way and we resort more to traditional information, to the traditional ways because that is the form, the regular form, the classic form material. Now yes apart from saving time. You can use them anytime at home or anywhere you have a computer.'

Students in this case do not use EIS at all in the library or in their building. They know them mainly via the Internet café, if they have a computer at home or during the classes at school. They prefer the printed version because they are familiar with it. Although they do not use the EIS regularly, they have a positive attitude.

Librarians provide users with all these services. They try to ensure their access as far as they can and they are positive as well. They have more access and knowledge because of their profession in everyday life so they have seen the possibilities they have:

ph-l-m-1

'152: My opinion about EIS is positive, there is no other verdict.'

ph-l-w-2

'425: Enormously, they have incredible possibilities, incredible possibilities. It is as if before we worked with a 'hammer on the rock' (showing how laborious process it was) and now you could have all these possibilities.'

ph-l-w-4

'230: I believe that they untie our hands really. They also help so much so that there is no other way to get information and acquire as much knowledge in the subject of interest... You can retrieve a lot of information in a very easy way. You can retrieve the information and I believe that it is the better way in order to be brief.'

ph-l-m-5

'269: In brief, they are fast, with reliability. The advantage is that they speed up the service for us and increase the number of users that we serve. Naturally they are quick. Speed and quality are the two important things. Very simply you log on, type a keyword and it gives you the result instead of going to a library and searching five volumes.'

ph-l-w-8

'86: ...EIS are useful enough, very. Of course they are useful but already fall short. I can say that they are also perfect.'

The easiness, update and fastness are EIS characteristics. The EIS link the world and get people together. The librarians provide the EIS so they have a good opinion about them. They know better their content and they recognize their advantages but also their disadvantages. As a result they prompt users to use them because:

ph-l-w-9

'280: ... they cannot now say I ignore electronic sources and continue. They are basic things.'

5.2.4.3 Summary

In Architecture the academics are positive about EIS even when they do not use them but they have their doubts and they are circumspect. On the one hand they are talking about usefulness, quantity of the information, easy access and on time better knowledge when they need it and quality of their work. Of course they find the EIS important and they believe that it is a 'big deal' to have, on your desk, the information you need. Their positive attitudes have an effect on the EIS usage now but also in the future.

On the other hand they prefer to have the printed version of the information and they are very critical about the quality and quantity of the information in electronic form. They do not trust it because they cannot find it years later. The quantity of the information is not proportional to the quality. The depth of knowledge does not depend on the breadth of the information but on the information and the accompanying ability.

The student participants, although they are not all EIS users, consider that EIS is convenient and useful. They think that EIS should exist simultaneously with the printed information. The EIS is considered a useful and easy access mean but students do not link them directly with knowledge quality and depth.

The librarians are positive as well. They think that users should use them properly and if they can find the information they need, not to lose it. EIS are very helpful.

The participants' opinion about EIS supports the second objective of this research.

The effectiveness of EIS delivery and use is given by the participants' testimonies. In this research site users have various EIS available while they did not have the time to be familiar with them. This is a changeable situation, a dynamic picture.

In Philology the academics consider the EIS and the computers useful, helpful and convenient. One of the participants considers that the information should come via email because it is not easy to search the Internet and the library everyday while another one faces problems with technical support. The EIS are facilities and give access to knowledge. There is confusion on the EIS although the researcher supports users with a list of them. They have the idea that all the computer services are one and the same. This probably happens because they are not very familiar.

A student user faces a problem putting all the windows he needs in order. This proves their unfamiliarity with the tools and the operation. They consider that they should exist and help them. The EIS and computers help users to organize their work and find more information. They are indeed useful facilitations and have an impact on students' studies. The printed version is necessary. The last student participant believes that they give easy and fast access so they save time and can be used everywhere.

For the librarians, EIS is the means, which unites their hand and their users' hands. They consider them useful and the right way to take the information you need. Everybody can be informed about scientific subjects anywhere in the world. They offer speed and lots of information with easy access. Their attitude is positive. Currently, the EIS are not part of this department life. The participants' attitudes demonstrate that they could be an essential part but now are not. The effectiveness of the EIS in this research site is not valid at all. Table 5.3 presents that data.

EIS criticism		
	Architecture	Philology
Academics	<ul style="list-style-type: none">They find them useful, large quantity of the	<ul style="list-style-type: none">The computers are useful, helpful and convenientThey face big problems with usage

	<p>information, easy access and on time better knowledge and quality of their work.</p> <ul style="list-style-type: none"> They also have doubts about their quality 	<ul style="list-style-type: none"> so they report them They believe that electronic services could affect their knowledge.
Students	<ul style="list-style-type: none"> Although they only use the catalog they know that the Internet has many possibilities Some of them know and recognize the usefulness of the EIS 	<ul style="list-style-type: none"> They believe that EIS should exist They facilitate their studies EIS are fast and economical-save time
Librarians	<ul style="list-style-type: none"> They are positive about EIS although they do not know all of them in depth They consider them an important tool in users hands 	<ul style="list-style-type: none"> Untie their hands and user hands as well EIS link the world EIS offer lots of information and easy access

Table 5.3 EIS Criticism

5.2.5 Promotion

5.2.5.1 Architecture

The EIS promotion is essential if the librarians want to provide a useful and efficient service. Particularly when there are so many sources and services, users could not get aware of them on time. It is really difficult for users to know everything about their subject which is on the library in electronic form. Librarians disseminate the information on the EIS and try to promote them to users. According to participants' testimonies:

ar-a-w-5o

'238: Various leaflets and booklets come constantly and I give a glance... '

ar-a-w-1o

'47: I am informed but I do not have time to enjoy them.'

Although librarians send emails and post booklets, academics do not seem to be aware of the increase in EIS. They do not pay attention. The users have the opportunity to be informed on time but the briefing process is not part of their life and job. As a result librarians have to pay more attention in order to make them more attractive and available.

About EIS briefing, student participants say:

ar-s-g-4o

'126:... the academics have given us a library booklet ... this of course is in compliance with the University rules because there are certain things you cannot avoid... It facilitated us but up to there I believe it was enough. Something else would be excessive. '

ar-s-g-5o

'They did not give any briefing. Nor did they say something to us about electronic sources.'

They know few things about the EIS existence and at the same time they do not have an easy access to them. Only a few academics mention the libraries' services and they prompt the students to use EIS. A quite big part of the library users' population is restricted from the use of EIS.

Librarians inform academics and students about the EIS existence. They use electronic lists and send emails when they have new services or when they want to announce the library's new ways of support their searching. They create leaflets and add the important information about the library in their library's card. They pay special attention on the academics briefing. They post the essential information in the academics post box:

ar-l-w-1

'86: ... There is a leaflet about the electronic journals and now we will create a list which we will send to all the sectors in order to inform the academics about printed and electronic information...'

ar-l-w-2

'69: We inform them. We send them letters, lists periodically. We put them in their pigeon hole when we have something new and in particular'

ar-obs 21: *The researcher notices that there are posters in the library door and in the announcement board which inform users about the library context. There are also lists beside the computers which give them an idea about the provided EIS*

The participant continues and explains their effort to inform users and academics:

ar-l-w-2

'161: I will also put the electronic address on users' cards. We have it on the leaflet, and written in the guide, and more information with all the titles of books and what you can find in each one and where. In the guide we have all the information very analytically. Of course the address is also written and anything relative... We promote Heal-link. We have published a booklet and we distribute it but they did not give it any attention.... We have given them a booklet teacher with all the journals that are in Heal-link. They took it and they can find useful details in it.'

They provide all the information and they distribute lists but academics have to search on them and they have to find out alone the sources they need; they are useful for them. The amount of EIS and the complication of the different services lead the unfamiliar with them user to be disappointed very quickly. Moreover the users who are not used to use the EIS in their everyday life when they receive a leaflet have to spend hours to find out what is available in the library.

ar-l-w-3

'34: ... Now we have a list with all the journals and a catalog in which the electronic and the printed journals appear. ... We do not however give somebody, particular briefing about journals we have. It will be assumed they search them alone.'

ar-l-m-5

'227: We inform them personally (academics) and advise them. We tell them what they can find for example in a citation index etc.'

Librarians recognise that there is a problem with regard to the quantity of information that is available. They have a problem checking and updating it. Then they users should have even bigger problem to find the appropriate information and to exploit it. They promote as much as they can as they say:

ar-l-w-1

'50: There are so many new services which even we do not know. So we should learn about them and then show them to users. All EIS are on the library's page. Users can use them.'

ar-l-w-4

'8: ... now I do not know every EIS.'

When librarians could not encounter the challenge of the available information how possibly could users? The promotion more or less concentrates on academics briefing. They inform students and they use poster and leaflets, cards and lists but students face more difficulties to approach EIS in-campus even more off-campus.

5.2.5.2 Philology

This library provides limited access to students so they can not promote the EIS as much they could. The EIS promotion is not an action with a great effect on users. Not all of the academics have computers in their offices and they are not used to use computers to much. The librarians have the same policy and they send email, post letter etc but academics are not accustomed to use computers and EIS particularly. So only one academic says:

ph-a-w-1

'147: ... Of course some e-mails come which we do not look at many times. Eventually somewhere information is announced. Maybe an announcement in the university network but briefing systematically, we do not have it, no. Of course sometimes they sent us certain forms when this began but something systematic does not exist.'

On the librarians' side things are different. They use many ways to inform their users about EIS content, its use and usefulness. They follow the central library's policy and they have all the programmes which the other libraries have in order to promote the library's services. They have posters and announce the library services in front of the door and in the posting board as well:

ph-l-m-5

'125: Firstly it is on the web page. Everything new comes out on the page with a flash that blinks and says what's new. Secondly the central library organises seminars about electronic databases. We have provided certain posters around the computers. We inform users and simultaneously we inform whoever comes into the library about what we offer.'

Librarians say that the academics are not really accessible. They are going to their meeting and try to promote the library services but there is no enough time to explain and inform them appropriately about the library's context. Then they say about the academics:

ph-l-m-5

'225: The academics are not accessible. They have to personally want to personally come and be informed. Everytime there is a 'sectoral' (university committee meeting) meeting the academics are in a rush and when they give us time to speak, then we send our senior staff to go and inform them. I use email because they have access to the computer and they will also see the university page. Those who do not have e-mail do not have access.'

And they are quite a lot of the academics who do not have email or who do not check it. This is a picture which is changing but on this time there are many academics who

do not use their emails. As a result they cannot be informed about the library and they do not have a way to find out what is accessible via it. Adding in this picture the huge amount of information available via the library's web page the non skilled-confident users could not approach these services. So the participant's testimony could not concern quite a lot of users:

ph-l-w-8

'46: ... They should use them alone. They search somehow.'

And she continues by say that even the librarians are not informed on all the library's EIS on time:

'176: ... Today I learned about 'Zefyro', do you know about it? I did not know about it. And many do not know, as we are not the same library, the central and this library.'

Librarians admit that they are not familiar with EIs even themselves. When researchers show the list of EIS available via the library page the participant does not know all of them:

'256: Are these all on the website? (She says seeing the EIS list) ... This is good that you are telling me about them, to search them, to ask somebody who knows better.'

ph-l-w-2

'190: We are still learning about them in order to say something about them. We learn little by little. There are seminars. ... From there and beyond we undertake and organize seminars here. The truth is that we are also searching.'

Librarians could not support the EIS widely just because they do not have the facilities to support these services. They have few old computers in which the EIS could not be approachable.

ph-l-w-9

'252: Of course, precisely, academics do not know EIS, and a lot of users I imagine. There are services which we do not advertise because we have four computers which are not enough, even fourteen would not be. There could not be more publicity. In the beginning we did it but now we have some users...'

5.2.5.3 Summary

Academic participants in Architecture have the information about EIS in a way but they do not probably pay attention on it. A student participant talks about an academic who promotes the library services but some declare that there is no briefing at all.

The librarians tried to inform users about their services. They have created a list and a guide with all the EIS and they frequently send all the information by mail to academics. There are announcements in the library and in the web page. In advance, they inform users orally. One of the participant supports that they have not had particular briefing about journals and thus, perhaps is not informed. The users seem to be uninterested in all of them. The number of the EIS is quickly increasing and this creates problems even for librarians. They do not have time to become familiar with them and to promote them or even show them to users when they need to. They are not always informed about all the services. As a result the librarians could not promote or support the use of the EIS.

In Philology the user's testimony proves that in this department librarians send the information about EIS by email and post to academics. The librarians talk about briefings saying that there is information about EIS on the web page and the central library offer seminars. There are announcements around the library. They use the mail to inform academics while they have seminars in the library every year for all the new students. The academics seem to be unapproachable and the librarians try to inform them as well as they can. They go to their official meetings and talk to academics. They inform them about EIS there. A librarian argues that users have to search alone and another one that the library could not support EIS marketing because there is not adequate equipment and could not afford to serve users properly. Librarians cannot catch up on all the new EIS. They are not always informed about and familiar with the latest developments. They know them many times but also they ignore their existence.

Table 5.4 presents the data.

Promotion		
	Architecture	Philology
Academics	<ul style="list-style-type: none"> • They receive some information but they do not pay attention 	<ul style="list-style-type: none"> • They do not pay much attention to the library's information
Students	<ul style="list-style-type: none"> • They do not feel that they have extensive 	

	information about the EIS context	
Librarians	<ul style="list-style-type: none"> • They inform academics via post or email • They provide users with leaflets and information about EIS use • They have to be informed and know their content in order to promote them to users 	<ul style="list-style-type: none"> • They promote the EIS, have announcements, post and email • They support users every year via seminars • They face problems being informed

Table 5.4 EIS-Promotion

5.2.6 Age

5.2.6.1 Architecture

During the fieldwork, the researcher realised that there is a link between the computer usage and the age of the users. Age is an obstacle in computer usage and the most common reason, which participants mention. The following participant estimates the EIS usefulness but still cannot use them easily and she does not consider them as tool in her job:

ar-a-w-Io

'33: Question: Whatever the subject is of interest, the library now has journals in printed and electronic form, if it is only electronic....?'

'35: Answer: ... I hope by then I will have retired and I will not need to face this because I really tremble at this... There are special books which I use in my subject, such an old book to be put on in the computer! Also there is the program with the 'Greek Grammateia' (title of a cd-rom about the ancient Greek). That has been done electronically and this is a marvelous thing because instead of searching volume by volume it is all written there. You can find things. I am not completely stupid but in this field I am....'

There are more participants who feel the same and have already decided that EIS are not appropriate for them. They also compare themselves with students. It is a strong obstacle in the EIS promotion and use, thus librarians have to pay extra attention on it. Moreover they believe that students use EIS easier than academics:

ar-at-w-1

'78: ...we, I, at least, am quite old.'

ar-at-m-2

'62: Now the students work a lot with Internet but we mainly use reports in printed forms.'

ar-a-w-2o

'131: The children have the talent in the use of the computer...We grew up with the pencil and the paper; the new students have grown up with the computer...'

ar-a-m-4o

'135: Ah! The students are more comfortable (with computers). In my opinion, I believe the reason is strongly associated with the age because also my personal experience has shown that roughly the persons born before 1950 have a much bigger problem of accessing new technologies. I was born in 1955. I believe that, it saved me. Older people are not electronically literate as long as they are moving in the circles of newer generations..'

ar-at-w-4o

'60: I am (old) and little... I do not know about the electronic services. I have remained with old things. ...like the cards (catalog)'.

As a result participants' testimonies leak out that they do not believe they could use the EIS as good as the students do. They do not trust themselves and they are conscious of their weakness. Even one academic participant admits that the old academics face problem to adjust themselves in the new services. The alleged ability of students in the EIS use is completely unauthorised and is based solely on their age.

Even librarians feel the same about the EIS and one of them explains her personal feelings about computers and the EIS.

ar-l-w-2

'44: Now with me, you want to take into consideration my age as well ... (laughs). I am older... the technology, generally I struggle and I need to try too much a lot contrary to the young people who learn very fast ...I simply try and with great effortI am informed about electronic services but I only have half the information, I prefer to send users to younger colleagues who know better than I do I say half...I do not believe (students have problem). The youth does not have, older people have a certain problem.'

Again their personal weakness is translated into students' ability to use the computers and EIS. They feel powerless to handle the new services and EIS and the respond to needs arising through them meets the requirements. The embarrassment is evidence in the way they refer to their inability. They have no motivation to be involved in this situation and they face many problems when they try it. They keep trying to be

effective in their job but still they do not believe they could. This is possibly connected with the fact that EIS were presented to them through inadequate training sessions. This picture is not the only one in the librarians sample and the rest of the sample is not presented here because they did not mention any problem in using the EIS.

ar-obs 33 '*Academics are not young as they need to study many years before taking a position in the university'*

ar-obs 35 '*All the librarian participants are under 40th year old. Some of them are quite young because they are in their placement.'*

The picture is confirmed by observation notes and by the literature review as well. Academics are not very young and they worked in the traditional way for a long time but this attitude is moving and changing because the orders are getting their retirement and the youngest are moving to their position. Then it is quite important to affect their opinion and promote the service to this part of academics.

5.2.6.2 Philology

This research site faces more problems because of the nature of the discipline and the way in which the academics used to work. Although the some of the participants use the computers and the EIS they still believe that there is an age-related obstacle:

ph-a-m-3

'60: I have no problem using computers and what it entails. Well, I am more positive than others despite my age. I observe that because, I know older people have difficulty communicating or lack patience to their first time using them and thus they keep far away from them...'

ph-l-w-2

'437: ...mainly the new children are incredibly familiarized with the computers. All have a computer and go to look at it all the time or to send mail. But there is no person who can say what this 'box' is. OK... '

They have the same biases in the age and use but also on the students' skills. They connect they EIS with the nature of the discipline and believe that can enforce them to use more EIS:

'406: The academics who communicate and search other foreign literatures those who have been abroad or they have studied in Greece and abroad last years. They are more open minded than the rest. I would say they are 50% more receptive.'

ph-obs 40 : ‘Academics are not young as in the first research site and they have the same obligations so they need to study many years before taking a position in the university’

ph-obs 39: ‘All the librarian participants are not very old. Moreover some of them are quite young because they are in their placement as in the first research site’

The picture is confirmed by observation notes. Academics are not very young in this site and they worked in the traditional way for a long time but this attitude is associated to their subject. There is a belief that those academics involved in teaching with the comparative literature are more concerned with the EIS.

5.2.6.3 Summary

In the participants testimonies it is obvious that there is a conception that age is a problem to learning and using EIS and computers. In Architecture they believe that for students things are different and they can do it better. They use their age as a means of explaining their disadvantage and lack of IT skills.

This phenomenon is observable in Philology department in academics but also in librarians. A librarian mentions age as a problem as well. They have the same attitude about new technology and their feelings affect the kind of work they are responsible for.

An academic in the Philology department, although he is positive and works with computers, mentioned the age factor and made it obvious that there is a prejudice on computers and EIS.

The participants made it clear that students and young users can use EIS but not the older users. The latter have a kind of negativity while the younger have a kind of talent. Table 5.5 presents the data.

Age		
Architecture		
Academics	<ul style="list-style-type: none">• older academics face problem using technology• fear electronic advances• young people	<ul style="list-style-type: none">• Older people do not become computer users very easily

	face no problem adopting the new facilities	
Students		
Librarians	<ul style="list-style-type: none"> • age differences in computer and EIS usage • avoidance of these tasks because of the feeling of skill inadequacy 	<ul style="list-style-type: none"> • the academics' experience and their subject affects their attitude • they declare their feeling of easiness in the way youngsters use computers

Table 5.5 EIS-Age

5.2.7 User education and user support

5.2.7.1 Architecture

The central library provides user education classes on EIS usage at regular intervals. Classes are available on request in the separate departmental libraries as well. Unfortunately, users are not aware of them. Even though the library advertises seminars, short training, etc. and users can find information on the web site. They appear never to have paid attention to posters, leaflets which are in the library space.

ar-s-b-1

'12: I don't know about these seminars? Do you need to register?

ar-s-g-1

'99: The librarian showed me how to use them. For this reason perhaps I believe that it was easy. I use them and I am used to the operations. I do not know anything about user seminars.'

ar-s-b-2

'218: I did not know this. These services need a briefing however.'

The researcher experienced the participants' ignorance of the user support services:

During the interview but also during the observation the researcher talked with participants about user education:

ar-s-b-3

'55: Oh! I think librarians should inform us about how useful and easy the connection with the library is and not simply show the sections of the library and provide us with a card....'

In many cases, it was necessary to encourage users to ask for more information:

ar-s-g-5

'189: Does this (information) exist in the information booklet? Where can you get it from? It should be in the central page and given by the services, in the library... is that accessible here? They are only in the first computer.'

parallel

'48: We did not know and in particular when we searched no one told us. What is this leaflet and how could I get it? I have never seen it before.

ar-s-b-5

'71: I suppose that certain seminars occasionally circulate, nothing more ...'

ar-s-g-5oadditioal

'121: ... all these electronic journals which I have never heard of. They should provide perhaps briefing or booklets or material placed beside the computers where you can easily see them? I don't know, or in the electronic page in the catalog as a message that would give information?'

Although there are all the appropriate means to advertise the EIS, during the observation phase it was noticed that students are not aware about the EIS and the user support. It is not a wide disseminated service and people are alone to find it out.

But on librarians side the most important elements on the EIS provision have proved the user support and user education. They pay effort to this direction as a kind of a librarian support in order to ensure the services usage and usefulness. In this case the library provides user education classes when users ask for them:

ar-l-m-5

'37: indirectly we have user education because this comes from the central library. We gather a number of users, this happen after an announcement, and persons come from the central library in 'nisida' and present the catalog to them. We also have announcements in the booklet about the journals and anything they could use.'

ar-l-w-2

'133: I believe that we could make more effort to guide them. I produced the leaflet; I attended a seminar for how to advertise services and sources. Also I often put some posters etc... but somebody should undertake and to deal with support intensively.'

But they still recognize the necessity to provide in a more stable base user education for the first year of undergraduates and the postgraduates:

ar-l-w-1

'170:.... I believe that it is negative that we do not offer seminars at the beginning of their studies. I am talking about undergraduates and postgraduates when they enroll, and show them that this is the library and these are the resources. We intend to do it but every time something happens.Many times they come simultaneously and then the information desk sends them to me and I present the services to them.'

Because of this lack of frequently provided user education services, librarians help users separately in a daily basis.

ar-l-w-4

'110: ...usually we find bibliography on a subject... After the first time with the help of a librarian, they learn. We see that a lot of children go straight to the computer and they do not bother us. Support is time-consuming but it is also our work.'

ar-obs 37: *'users do not attend any user education class during the fieldwork in the library area and nobody asks for the education seminars during the observation in the information desk'*

ar-obs 15: *'A student goes to the information desk and asks for help to fine a item which knew it was in the library and could find it.'*

Students have not asked for any user education seminar during the observation as they seem quite confident to find the information they need in the catalog. When they face problems they ask for help in the information desk.

5.2.7.2 Philology

In this case there are regular library inductions sessions every year, especially during the first semester. They are available for the first year students but seminars do not cover all the new students. They are not compulsory. The participants talk about their usefulness and their disadvantages:

ph-s-g-1

'29: When we started, they offered us a seminar with regard to the library and the operation of the library, how we might find books, but not via electronic services. ... If we wanted we could attend it.'

ph-s-b-2

'25: They informed us that the seminar will happen and it will also happen next year...'

This participant took part and argues on their usefulness:

'133: It was interesting. At least two parts were interesting really. They untie our hands ...Even though I attended the seminar I do not remember if we had access in databases or some other of these services.'

ph-s-g-4

'115: They gave a presentation and some 'urls' (web addresses) that we could enter and which were useful albeit small. I would participate again....'

Both participants attend some of the seminars. Students have the opportunity to be informed in this research site easier and in a more organized way. Then they believe that:

ph-s-g-2

'78: I believe that librarians inform us successfully. They support you when you use the sources. Then they also have support individually in their everyday needs.'

Librarians talk about their effort to support users and overcome the problems they face. Their testimonies support that they offer the best they can do under the real conditions. They mention lack of infrastructure and lack of a separate room to support the users in an individual basis:

ph-l-m-1

'109: Simply for a half year period we offer education to undergraduates and postgraduates, those who want it. It is not compulsory. As many as they want, come. There are not many every September. We show them the library and how to search...'

And later he says:

'124: User education now cannot be effective when few individuals come, but we have also tried with a lot of individuals in a seminar, but when you do not have computers you cannot work. ... '

Users can participate in seminar in the central library as well. Students and users in general are equipped to face the challenge of the EIS but they do not have the opportunity to use them in the library because they do not have computers to use even the catalog and moreover they do not have access in the EIS:

ph-l-m-5

'129: In collaboration with the central library we offer user education where there is a basis for the user education'

5.2.7.3 Summary

The participants do not know about seminars in Architecture. They ask the researcher for help. They ask about the EIS and the user education seminars. There are users who have not seen even the leaflet within the library's services. They talk about the relationship between the students, EIS and academics correspondence. The requirement of academics, students and the services has been mentioned. Librarians support them during their first time and then they can use catalog.

The librarians think that users need seminars and user education in any form. In this library they do seminars in collaboration with the central library. The librarians use several ways to make users aware. They advertise the seminars and support user personally. Students do not have the feeling that they have been extensively supported

in the use of the library. They do not have induction sessions but they intend to offer them. The users do not face particular problems in using the catalog.

More or less the same picture is presented in Philology. Although there are regular induction classes, these are not compulsory so the users are not informed. Users expressed their need for more information about the services and their possibilities, while they did not know about the EIS user education. Participants in these classes say that the information is useful although they do not have a clear picture of the services and sources.

The librarian participants' testimonies support that they offer user induction classes every year and personally support those searching. They have many new students every year and many participants. They collaborate with the central library and support users personally when they ask for it. They face problems organising seminars in the library because of the lack of the appropriate equipment. The participation of academics had not been mentioned because they are unable to be contacted. Table 5.6 presents the data.

User education		
	Architecture	Philology
Academics		
Students	<ul style="list-style-type: none"> • they do not know about seminars, leaflets • librarians support them to use the catalog • there is a necessity for better collaboration between academics, libraries and students. 	<ul style="list-style-type: none"> • they need more briefing • some of them attend the induction classes • the content of the induction is complex
Librarians	<ul style="list-style-type: none"> • offer irregular user education classes • use posters and leaflets to inform users and • they support them in their everyday searching needs 	<ul style="list-style-type: none"> • try to offer user education any way they can • they collaborate with the central library as well • there are no appropriate rooms and equipment to offer user education

Table 5.6 EIS-User education

5.2.8 Personal support

5.2.8.1 Architecture

User education is only one part of the user support. Librarians support students in every day needs. Even more so because there is no regular user education and induction session users need the support to find simple but also complicated services in the library. According to their testimonies:

ar-l-w-1

'166: User education is personal, what I mean is when I see a postgraduate who is searching something special, I help him/her. They come to me and ask for journals so I show them... I also show what exists in electronic form. I instruct them at the same time as showing them everything.'

ar-l-w-2

'109: We sit beside them; we show how to get onto the network, what they must do. That is a kind of support.'

ar-l-w-3

146: 'When they ask me, I go and show them then they can find what they want in the computer and after they can do their research as they want.'

ar-l-w-4

'56: I show them the way to search, how they can do a search, if they need do a search or any personal coursework ...'

ar-l-m-5

And the participant continues:

'166: User education and support is personal every time ... They ask for help about journals or anything we show them. I show the index that exists for architectural journals that are in printed form I also show everything in electronic form.'

ar-obs30 :

'Users face problems to use the catalog'

'Ask for help from other students beside them'

'Ask for help from the librarians. Librarians help users when they ask for something, and come in the computers and show them how to use the catalog'

The catalog is part of the students' everyday life and they can use it effectively. When they face problems they ask for help first of all from other students beside them and then from the information desk librarian.

5.2.8.2 Philology

User support does not stop at user education and induction sessions in this case.

Students believe that they have a very good support in using the EIS:

ph-s-g-2

'78: I believe that librarians inform us successfully. They support you when you use the sources.'

And librarians talk about their efforts to support users' everyday:

ph-l-m-1

'124: User education now cannot be effective when few individuals come, but we have also try with a lot of individuals.'

ph-l-m-5

'209: We show them the first steps. If users want to participate in seminars they can. Therefore they have the two alternatives.'

ph-l-w-8

'126: ...Individually we try to show them the information in the booklets. There are individual examples and we direct users to them.'

ph-obs 45:

'Users are less independent here' - 'They do not use the catalog, the computers are slow but when they want something they do to information desk and ask for help'
Users in this library have fewer opportunities to use EIS because of lack of access.

When they face problem they ask for help in the information desk.

5.2.8.3 Summary

The librarians in the Architecture department support users in personal tutorials.

When users ask for help and how to obtain more EIS access than the catalog they inform them about what is available. Particularly they do that for postgraduates and the EIS and for undergraduates in the early stages of studies, the catalog. Each time the quantity of information they give them depends on their needs and what they ask for.

The librarians in Philology department offer seminars to all of their users regularly and also on request or when there are special occasions. They express doubts, insecure thoughts about the effectiveness of their effort. Table 5.8 presents the data.

Personal support		
Architecture		
Academics		
Students		
Librarians	<ul style="list-style-type: none">• offer user support on an daily basis• postgraduates needs are more and they support them	<ul style="list-style-type: none">• offer special support on request

	<ul style="list-style-type: none"> • they support users searching needs on request 	
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Table 5.6 EIS-Personal support

5.2.9 User education estimation

5.2.9.1 Architecture

The user education seminars are not part of the academics' work. Their attitude comes from the level of EIS they need and their necessity to complete their job through them. Some of them do not know that they could participate in user education:

ar-a-m-4

'103: If they do not last long, potentially I would be interested in participating in seminars.'

ar-a-m-1

'27: Here in the university? (Answer about the user education classes) Yes I know about them but I do not have time to attend them.'

The time parameter is important for academics. They are busy people and they have to have a strong motivation to leave their obligation in order to attend user education.

ar-a-w-1

'100: I believe that we should have such a type of support in order to understand them better and have easier access.'

But, the participant says later:

'222: The truth is that I did not ask for the librarians' help most of the time thinking that I could accomplish the task at least with what I know...'

ar-a-w-1

'51: I would be willing even if I do not know how successful it would be because I have attended seminars on computers, certain weeks in May and when I was back in September... The only thing that I remembered was how to switch it on. Of course under the circumstances I would be very interested in learning to work with the services which help you in finding books, etc. straightforward.'

Some of the participants are not quite confident about their skills while some others do not need user support or they find help via their colleagues.

ar-a-m-5

'59: I do not feel I have lack in EIS usage'

ar-a-m-3

'67: I would not participate because I do not need seminars. It would be a waste of time. Because there is the program of the library, initially I have attended it. I do not have problem using or searching... '

2ar-a-m-3

'112: I do not believe I need a seminar I believe that my own problem is to find time...It is easier when somebody who has resolved the problem can tell you the solution instead in participating in seminars and tutorials.'

This part of the sample covers the lack of skill with colleagues help. It is easier for them to approach a colleague than to participate in seminars or ask librarians for help.

ar-a-w-4

'102: A colleague in the Architecture helps me. I go to colleagues on the lower floor and ask them for help but, no seminar. Perhaps one time I will go to a seminar. I know that seminars exist but are at certain hours and they would have to take place when I do not have work.'

ar-a-w-5

'149: Now? What I have learned - I have learned seminars are for other people. I find out things alone (she laughs). To inform us, I believe yes, but to participate in courses, no.'

Academics are busy users and it is not easy to participate in user education classes. Even though they are willing to do they have so many obligations and their timetable is full.

Students, on the other hand, describe their thoughts about the user education classes:

ar-ps-b

'78: No, I do not know... it would be fun... '

ar-s-g-2

'24: I know there are seminars but I do not have time.'

ar-s-g-5

'185: Look. Courses, no. Now I'm not talking about things that no one want to do. ... If there is a short briefing that would guide us, yes.'

ar-s-g-3

'166: It would be convenient... '

ar-s-g-4

'126: I do not know about seminars but a professor has given us a booklet about the library... I believe it was enough; something else would be too much. I do not know what I could gain from seminars...If the research that I have done is good or bad, thorough or not, I do not know.'

Students do not believe on the user education support necessity. In this research site there are no many students who attend user education. They have to find their way to use the library. They are more familiar with the electronic catalog because they do not have other way to find what is in the library. But they are not used to participate in

seminar. Nobody prompts them to attend these seminars and the academics are not aware about user education. Library promotion in this field is weak and academics can not affect the students' opinion.

5.2.9.2 Philology

Academics in this research site are aware about user education and they consider it as useful although the time problem is arising again. Their attitude is positive and they pay attention on it. Probably this happens because in this site academics and students are no very good IT skilled and they need to know more things about EIS. They also have in a regular basis induction sessions and they have an idea about the EIS context. This has an impact on their attitude:

ph-a-m-2

'58: It would be good if at some time there was a briefing not for the students but for academics, two hours, for the use of databases, and to concentrate on, for example, the humanities etc. I am talking about a short briefing in front of a computer because we are busy people and otherwise we cannot find the databases, while with the computer it can become somehow better.'

ph-a-w-1

'331: I believe that user education should be compulsory and not a simple announcement which asks those who want to participate...'

ph-at-w-1

'74: I believe that it is necessary; I believe that we need them even more because we are philologists.'

ph-a-m-1

'51: I have never participated in user education seminars. ..the time, the obligations etc.'

Student participants are not used to working with EIS. They know in a superficial level the EIS context and they could not estimate their usefulness in their studies:

ph-ps-g-

'30: No, no.'

And after the conversation:

'122: I suppose we should have some user education.'

ph-ps-b

'85: I believe that seminars could be useful, helpful'

5.2.9.3 Summary

The academic participants are not very willing to participate in user education seminars in Architecture department. They have time problems and they are used to going to other colleagues when they have problems. This is easier for them. There are few who do not need any help at all. They propose that students should attend user education particularly at the postgraduate level. Even when they have a positive attitude about seminars in the end they could not do it.

The student participants present more or less the same picture. The postgraduates believe that they did not need them at all. Some of the rest do not consider them necessary and believe it is too much. Few believe that user education could be a good thing. They recognize that these classes could be helpful but they cannot really estimate the context of this support.

The academics in Philology did not participate in user education .One of them proposed that user education has a compulsory nature. The time restraint is present again. One proposed a short presentation and one talked about their necessity. There are good intentions they express interest wishes when there are user education seminars but they did not attend them.

The students did not consider them really necessary. They do not know the content of the EIS and the consequent needs. Moreover they believe that they do not need the EIS so they do not consider the classes necessary. Only one says that they could be helpful. Table 5.7 presents the data.

User education estimation		
	Architecture	Philology
Academics	<ul style="list-style-type: none">• not positive about seminars• there are time problems• colleagues support	<ul style="list-style-type: none">• there are time problems• they propose alternative ways to provide them
Students	<ul style="list-style-type: none">• they do not think they need them• they are not aware of their context and possibilities so they can not anticipate their usefulness• it is a good idea.	<ul style="list-style-type: none">• they do not think they need them• they are not aware of their context and possibilities so they can not anticipate their usefulness

Librarians		
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Table 5.7 EIS- User education estimation

5.2.10 Comments

5.2.10.1. Architecture library

In this case, users definitely use the catalog because they have no choice. So the most frequently used EIS is the catalog. The rest of the EIS are used by academics that have to use electronic sources in order to complete their work. Postgraduate students are user of EIS because they do searches and have assignments to submit. The undergraduate students are EIS users when they have assignments. The profile of the EIS usage concludes on the direct relation between assignments and the level of usage. Academics have ways to be informed via printed or via electronic forms. Students use EIS if they need them.

The participants' attitude on the EIS is positive. They consider them positive and they think they are important. Although they do not use them extensively they believe in their necessity. This means that users will adopt them if EIS have easy access and users are aware of them. A holistic promotion in this field could change the usage level. If this can be applied in combination with academics awareness it could affect the way of teaching and the learning process. Users do not pay attention to the library's promotion. So this field should be empowered in order to achieve more usage. There is a problem with the huge amount of EIS and accessible information, a fact that confuses even the librarians. The truth is that this usage is directly linked with the IT skill level as well.

This information proliferation seems to link age to the problem of learning and using EIS and computers. Academics believe that for students, things are different and they can do it better. They use as the key factor their age to explain their disadvantage and lack of IT skills. This phenomenon is observable in academics but also among librarians.

User education and support are part of the EIS provision. All the participants seem unaware of them. The reason perhaps is that the classes are available more via the central library and this not very approachable for users. Although users consider that

classes could be helpful, they do not participate. This should force librarians to re-organise their service. The user education classes organised by specific department by known and friendly persons could be more popular. The role of EIS in user education is necessary in order to create a usable service. A more organised user education service is necessary. Librarians offer personal support in this field but the effect of this is lower than it could be via regular support. Librarians recognise the specific needs their users have and they have to develop user education and a user support policy.

5.2.10.2 Philology library

In the Philology library, participants report that EIS are not used so much. The users are academics or research students at postgraduate level. In this library there is a link between the users' needs and the level of the EIS usage as well. The learning and teaching process affect the way users think about them. Even the catalog is not extensively used. There are few participants who use everything they find on the Internet and the library's page. They are not comprehensively informed about the EIS content and the available information. Users are positive to EIS even though all the above are happening. The EIS is considered as a good facility which gives access to knowledge. Academics believe that they are useful and save their time when they use them. Students consider that computers are useful and they imagine that EIS are good for their studies. They should know about them even if they already use them. In this case, the library should develop a promotional service and improve the access conditions in order to have a usable service.

There is a promotion of them but they talk theoretically to their users. Academics have the appropriate equipment to approach the EIS and they have the choice to do it or not. Students on the other hand, have no choice because they have no real access. The promotion is not enough to make a service usable. Librarians make the effort to inform users about EIS but as long as EIS are not part of their everyday life users can not use them. The participants also make it clear that students and young users can use EIS but not the older people. The older users present lack of confidence while the younger have a kind of talent. The real need behind this attitude is the necessity of the user education services.

Again in this case users believe in the usefulness of this service but they do not participate. Academics face time problems and students do not find user education necessary. Students do not need EIS and have no reason to devote time to them. Librarians provide regular induction classes but they are not compulsory so no users participate. They also have no way to estimate the effectiveness of this service.

5.3 Accessibility

The objectives of this research demand to explore all the parameters affect on the EIS usage. The electronic services are on the web and students can reach them if they try to do it. To put services on the web is not enough because these services have to be easy accessible and be linked with many other things like the offered equipment, location, technical support and access control.

In the Architecture research site computers are few and definitely are not enough in relation with the number of students. In this library students have these few computers and they have the opportunity to use EIS through them and in the computer lab (CAD). Conditions are even worse in the other research site in Philology. There are few computers and students have no access in a computer lab at all.

This section presents the location of EIS usage, the technical support and the access control through the participants' eyes.

5.3.1. Location

5.3.1.1 Architecture

Academics talk about accessibility on the EIS. The university and their home are the points of access for students and academics. In detail they say:

ar-a-w-1o

'92: I use them here- the catalog- in the library. I use them mainly in the library. When I want to search for something I use the computers in the library not here.'

ar-a-w-2o

'227: I have access from everywhere home, office and the library of course.'

ar-a-m-3o

'23: I use EIS in my office or at home. I do not use the computers in the library...but when I search on the Internet or use EIS obviously I do it here.'

ar-a-w-3o

‘73-81: *Usually (I use them) here or at home. I am connected. I have access via the university network. It is easy to access because we are in the Aristotle university, ... when I search for a book, I search in the library catalog and that’s all... very quickly...*’

ar-a-m-4o

‘61: *Usually the library and in my office... I use the EIS in my office or in the library.*’

ar-a-m-5o

‘36: *I use EIS everywhere. I have access everywhere. I have access at home because it is not possible to be isolated.*’

ar-a-w-5o

‘133: *I have access here and at home and the connection is via the university.*’

The students say about accessibility that the EIS are available in the library, CAD and home. Then students have no less access points but they do not have enough computers in the university area.

ar-s-b-1o

‘74: *Mainly I use the EIS in the library and sometimes at home.*’

ar-s-g-1o

‘63: *I use them here (in the library). I know that I can use them in ‘nisida’ but I am not going there often, therefore I do not use them there. I have recently bought a computer for home use.*’

ar-s-b-3o

‘23: *If I make use of the university network usually it is in order to ask for something very special. I rarely visit the library or use the ‘nisida’ in order to surf the Internet. Now apart from the university very seldom I go to Internet cafes too ...*’

ar-s-g-3o

‘62: *I also have Internet connection at home but I have used it just a couple of times till now. Mainly here I search for books and journals. Here in the library, as we say.*’

ar-s-b-4ol

‘20: *Here, exclusively here. (library)*’

ar-s-g-4o

‘66: *Mainly here. I have not got computer at home. In ‘nisida’ I use only the Internet, not the catalog etc.*’

ar-s-b-5o

‘47: *I use the catalog at home to see if I can find some book in order to come and borrow it.*’

ar-s-g-5o

‘48-68: *At home mainly. I come here only to search for books. I have a password and I use the Internet at home. I have seldom used the EIS in ‘nisida’. I have good*

equipment at home. They are new, almost last year technology so I have no access problem.'

ar-s-g-5o-additional

'53: Here (in the library).'

ar-s-g-additional

'77: Always here.'

external user man

'26: I use them only here.'

The picture drawn by the participants' testimonies shed a light on the importance of the library and 'nisida' as access point. Of course home access is essential but it requires having suitable equipment. The average user cannot have it. The participant made comments about the quality of the services in both locations-library and office-and the reasons for preferring to use EIS in the office. This participant is a postgraduate and has the special right to have access in an office in-campus so he can access EIS easily.

ar-ps-b an

'38: Mainly I log on from my office. I am now here in order to use the library and at home.'

The librarians talk about accessibility at home and having Internet access via the university server at home.

ar-l-w-

'106: They are entitled to have an address through which they can print in the universities or at home. All the students can log in the Internet without any control.'

The services and sources that can be accessed from home are not the same in the university. Then she concludes:

'138: If they have addresses and a password, they can enter both from home as well as from here. There are services of course that are not accessible at home because they are not available on the Internet. However, at the moment we are trying to move some of them on the Internet.'

ar-l-w-3

'82: Most users come asking for information that can be found here. But few times they come here with classification numbers saying I found this book in the catalog and you have it here. Can I see it? But most users search what they want here.'

One of the participants supports that users and specifically students do not use EIS at home but in the library.

ar-l-w-4

'36: There are no users that use EIS at home ...the students that attend classes and that are interested in their studies spend half of their usual day in the university or in the library. There are very few individuals that use EIS at their house.'

ar-l-m-5

'126: Users use EIS here (in the library), at home or in other places.'

ar1 1st field

16: There are 6 computers available (the seventh is under repair). They provide access to the catalog and give also access via Internet to all the electronic services (only two of the computers). Users do not need a password to log in the local network and the users can have access to electronic journals without it.'

Although the participant states the above, the researcher checked the service and found a password barrier. The participant meant there is no need to use their code as users do at home. The researcher also visited the 'nisida' to check the conditions there and the access possibilities.

ar-ob

59: 'It includes 22 computers, 14 of which are used for Internet access. At the time when I entered no one was using university web pages. Half an hour later again no one was using pages of the university or the library, as was the same for the next half an hour.'

60: 'There are few computers in the library place'

61: 'Students are queuing in front of the computer in the morning- they have to wait for a few minutes'

62: 'Academics are not coming in the library'

63: 'The students use the catalog only'

Students use the EIS in the library mainly but also in their home and very few in nisida.

ar-obs 74: *'day after day the observation in 'nisida' concludes on this: users do not come in this room to use EIS'.*

ar-obs 76: *'Meeting with the responsible person in nisida and asking for the computer and Internet use means that users do not use the library in this room.'*

Then the observation eventually proves that users use the EIS only in the library and in their home as they argue.

5.3.1.2 Philology

According to the academic participants' testimonies the points of access in the second case are the library, their home and the office, again. Access points and accessibility are described by academics as follows:

ph-a-m-1

'19:... Only, when I log in the library. I log in at home but it is very difficult to enter, I have to log in late the night. ...'

ph-a-w-1

'159: Now, I use them here because at home... '

ph-a-m-2

'34: (I use them) here, now ... But I used to use them at home very little, the connection was very slow. It is important that I can also see them at home. Here in the office during the day...'

ph-a-w-2

'305: I have Internet access, at home and here. Therefore I use EIS there and here.'

ph-a-w-3

'85: At home if I want to do a search.'

ph-a-m-3

'24: (I use them) here because I have no time at home. I have connection, what I want to say is that I have the possibility to be connected at home but I prefer to use EIS here.'

Academics use the EIS in their home but face problems in their office as well. Very seldom they say they use them in the library. As for the ability for the postgraduates to have access:

ph-a-m-2

'90: There are 320 students through the exams system and transfers from other universities... almost 450 new students per year. More than 2.000 students study in the department and a postgraduates' 'nisida' with 10 computers. There are 4 in use now but they are not open to the public because they cannot be checked. Substantially postgraduates have access, only. We have two computers here in the library, which are not sufficient for the Horison catalog users.'

ph-a-m-2

'86: Our postgraduates have 4-5 PCs on the 4th floor with access to the Internet, which certainly are few but still exist. Undergraduates do not have any and this is a big problem. The technical service will create a small space on the 4th floor where undergraduates could also have access to 10 machines and would be able to work.'

Finally access is not possible in the area for student users in the case of the faculty philosophy. There are few computers in a very bad condition in the library and after the researcher checked them she discovered that they are not easily accessed.

Moreover there is no computer lab in the department. When the researcher asked them about their access to computers and EIS in places other than the library, the students' participants said:

ph-ps-g

'15: I have a computer at home. I enter 'lib. auth. gr' to check what I need.'

and

'55: Undergraduates do not have access to EIS, not because they do not have time, but because it is not possible. There is a room for postgraduates only.'

The participant mentioned the area in the fourth floor. The given information by the academics:

'43: Therefore is upstairs everything. It is the philologists' computers room. It is a room where classes are held and because of this it is difficult in a way to find it empty because there is always somebody in. There are always classes or individual students in it. It is very seldom that you can go and work there.'

ph-ps-m

'32: I use EIS more often here (in the library), sometimes at home and from time to time in the office.'

ph-s-b-1o

'143 I have access both at home and in the library. There are no labs with computers in the department.'

ph-s-b-2o

'81: I use the computers here in the library. Not for search. (Mean the rest of the EIS) Only when I want books that I need or parts of books I look for them there.'

ph-s-g-3o

'55: In the department there are accessible computers simply it hasn't happened to use them. In each library there are four-five computers which can be used by anyone. There are no computer labs.'

ph-s-g-4o

'139: (I use EIS) here or in the central library and at my house.'

There is access in the central library building but nobody else mentioned it. Users have to go to an Internet café to have access to the Internet because there is no other way to do so. This means that they have to spend money if they can afford it in order to use EIS.

ph-s-b-1o

'191:... in a cafe you cannot go'

Students do not have the money to buy a computer at home so when there is no access at the university nor at home they cannot get the information in any way.

ph-s-g-1o

'165: I know that I can have connection via the university at home, I do not know exactly the way, but I do not have a computer... On Internet café we can use the Internet but we cannot all go there because you are charged, the hourly minimal tariff.'

The conditions are not very convenient and the users should try hard to access EIS.

The librarians confirm the access points in the Philology faculty as follows:

ph-l-m-1

'33: They use the catalog but not to a great extent because we do not have good machines. They are not good. They are old and slow.'

ph-l-w-2

'166-178: Did you go to 424? This is also the postgraduate 'nisida'. And it is closed. There is a person in charge who keeps the key. ...If you need to use the area you have to take permission and use it. The place is open to no one.'

And:

'238: The University gives them the possibility to have access free of charge via the server and at home. They have a password.'

ph-l-m-5η

'197: Users (academics) use EIS in the library and in their offices...They do not use them in the 'nisida'. EIS are not used in 'nisida'. So they try to use the electronic sources in their offices in order to avoid paying the printing cost. If they go in to their office it will be free of charge.'

ph-l-w-7η

'150: They have access at home if they are connected. I think there is a nisida, I am not sure but I think there is one, on the fourth floor?

About the quality of access service participants suppose that it is very good, particularly now. They say:

'158: The computers are villain....'

About the postgraduates and the access points that are available the participant says:

'158: Our own postgraduates have a computer room separately but they need a key again, in order to access it. ... And any student has access to 'spoudastiria' (small departmental libraries).'

Not all of the academics have PCs in their offices yet.

ph-l-w-9η

'288: ... now I believe that in September they will have their computers in order to become users...'

The faculty has a 'nisida' that is not open to the public but it is used for courses. If they want to have access to this area students have to go and ask for the key. The researcher saw this place briefly when students had a class lesson. The situation requires exceptional policy and thinking in order to avoid problems and protect the network and the machines.

ph-obs 21 (*An indirect observation showed that the two machines seem not to have been used in the morning at all.*)

ph-obs 27: *A potentially ultimate point, is that while the machines are there, although they are on; y two I could say that the access appears to be sufficient to serve at least the basic use of catalog. In reality this does not happen because they are slow and old.'*

ph-obs 25 : *In the meeting with the she librarian she said that the catalog faced enormous problems. It is considered that the software is old and inadequate. Also there is an attempt to sort out the problem through changes and new versions but they think that at the end it will be changed.*

5.3.1.3 Summary

Academics use the EIS at home and in their offices in Architecture. Access is easy and they do not have serious problems. Some of them argue that they do not use EIS at home frequently while others use them in the library. As for the students' access points, these are the library, home and 'nisida' while one postgraduate student reported that he uses them in his office as well. There are users who have to go to Internet cafés in order to use EIS. According to librarians, users have Internet access via the university network. They use EIS in the library, at home and wherever there is network access. There are services that are available only on-campus via the local network but soon everything will be available on the Internet. This happened during the fieldwork but now this service has changed and students have available all the sources via Internet. Users ask for information and items which are found in the library but also they bring the classification number from other access points. Mainly users use EIS in the library. Users who attend classes do not have time to use them at home because they have to spend the whole day in the university.

There are notes which reinforce and clarify the above participants' testimonies and give information about the labs and the number of the available machines.

According to Philology academics the connection at home or in the office is slow. Users use the EIS in their offices and seldom at home. Others report that they use EIS at home when users want to search for something. The access points are their home and their offices. In relation to students academics say that they have access in the library and in a separate area which postgraduates use it after appointment. It is a closed area in which they have no free access. The last concerns only postgraduates. The students use EIS in the library or at home. There are no computer labs while

postgraduates have access in the separate area or in their offices. The researcher visited the room on the fourth floor but it was closed all day long. The students said that they are used to going to Internet cafés because they do not have the money to buy computers at home. Their testimonies reveal that postgraduates have better access in the philology department. Postgraduates have a separate area accessible even with a key but undergraduates have difficulty in access EIS. Librarians confirm that users have free access at home. There are many problems with the computers and the facilities. Academics use EIS in their offices because it is easier to work there. Participants are not always aware about access points. The summary data of this section is presented in Table 5.8.

Location		
	Architecture	Philology
Academics	<ul style="list-style-type: none"> • All academics use EIS in their office • Some use EIS at home and some others do not • Some of them use EIS in the library and some do not • They have access via university network 	<ul style="list-style-type: none"> • They use EIS in their offices and in the library • At home some do not use them at all while some others only for searches • Students use them in the library and postgraduates have their lab.
Students	<ul style="list-style-type: none"> • One postgraduate has access from his office-he is working there as well. • They use them in the library and at home if they have computer • They do not use EIS in CAD usually • They have access via university network at home 	<ul style="list-style-type: none"> • Postgraduates' opinion about access is that there is no access for undergraduates and graduates in the university. • Postgraduates access EIS at home, in the library and in their lab • Students have access in the departmental or central library and at home- they know of the possibility to have net connection at home. • Students access EIS in Internet cafés –do not possess computers-economic parameter
Librarians	<ul style="list-style-type: none"> • Everybody has access in the 	<ul style="list-style-type: none"> • The access in the library is not good because the

	<ul style="list-style-type: none"> • university network • The services and information can be different on campus and off campus • Users ask for information they found in the library or anywhere else 	<ul style="list-style-type: none"> • machines are inadequate. • There is free access at home • Academics use them in their offices but not all of them have a computer in their office • Postgraduates have access in a lab but it is limited
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Table 5.8 Accessibility-Location

5.3.2 System and technical aspects

5.3.2.1 Architecture

There are few computers in the library which they can be used but there is not enough technical support to check and maintain their operation. The lack of computers' maintenance creates difficulties in users' access. Participants report technical problems which they face as part of the EIS access process:

ar-a-w-2o

'150: Sometimes the connection is cut off but this is another issue.'

ar-a-m-3o

'72: I have no access problems in my office or at home. As long as I log on the page it is easy.'

About service connection at home the one participant says:

'102: Sometimes perhaps the system has a certain problem but this is also expected. Now I do not have problem, the maximum time for login is two-three minutes: They have increased the lines of access to server.'

ar-a-m-4o

'87: There is a problem in catalog's operation the network is often off.'

The catalog has specific needs and if you want successful results you have to know them. About the catalog use one participant says:

ar-a-m-3o

'154: what I consider to be a lack of this service is that there is no index for journals. It could be useful.'

The following participant describes the frustration during the research she did in the library catalog:

ar-a-w-3o

'93: I have very serious queries and I wonder if it is not me to blame but the system of books registration. I will give you an example I was searching for a book of, which I knew the writer "Doxiadis"; I was 99% sure about the title and I knew that it concerned the Dodekanisa but I did not know the title precisely. I knew the publication and date. I knew all the details and used all these details I do not remember which of them simultaneously but not all together (simultaneously: I entered Doxiadis but I had no result, then Dodekanisa nothing again) Finally I discovered that it is in the one of the four libraries in the philosophical department. I wrote the classification number and I lost it. I could never find it in the catalog again. It was supposed to be written in the proper way. It (the catalog) is a database that if it cannot find the complete identification it does not recover anything. Have you tried to retrieve books under my name?'

This testimony is part of the critical incident which participant describes to the researcher. They system failure to retrieve a book that exists is disappointed and unconfident. Users do not trust the service and when users do not have the proper skill to recognize why this is happening they feel insecure. The academic participant associates the cost of the computer equipment with its quality and connecting possibilities.

Students feel that there are not enough access points. There are no enough computers to support the users' needs. System problems are very common. Students' experience with access reveals that:

ar-s-b-3o

'39: ... if I need a fast and better Internet connection later I will see what I can do. Now I can sacrifice 1-2 hours and I use them in the university.'

ar-s-g-5o

'205:...I have been sitting here for an hour, trying to find things, gradually trying harder to harder in the computer but afterwards I raise and search on the selves. At least in this way I found something.'

Students face problem to find the information they need and they feel disappointed. They system is not counted as reliable. In addition participants' testimonies make it clear that the speed connection at home is not very helpful.

ar-s-g-5o

*'323: Many times when I search for something on the Internet and insist the system gets disconnected in middle of a task and afterwards I have to reconnect (that is, another one or two hour). There are few lines and thousands of students.
....'*

ar-s-g-5o

'379: Generally the system is not, so to say, user friendly, the general system. ... that somebody logs into the system and plays games on the Internet or logs on in a place where I would log on in order to download necessary information to complete a job... I may want to download entire books during an evening and might not manage to complete it.'

The participant testimonies make it clear that the connection at home is not very helpful. The system capacity to cover off-campus use is not enough. As a result the system is stuck frequently and cannot use the EIS effectively while they have to spend hours to find a source they need.

The librarians have mentioned technical problems as well. System problems and limited accessibility is part of the daily routine due to the technical problems.

Speaking about system problems, they recognize the system weakness to retrieve the Greek books so users cannot find a recorded book because they have done a spelling mistake. About technical problems they face they say that they concerns they power off and then the system recovers and can reconnect onto it.

ar-l-m-5"

'81: Of course the catalog has a lot of problems with searching etc. It cannot index Greek fonts in all searches- in 'general, quick, expanded' searching possibilities. It indexes Greek only in browse, beyond that you are supposed to put for example a name, capital the first letter and 'lots' in order to search that you want.' (Write exactly the phrase that you are looking for without any mistakes.)

ar-l-w-1η

'151: Look what I can say is that the OPAC problem is that many times the system falls down. The page has problem and the program sometimes. But they can search.'

When the system has problem librarians do the search on users' behalf.

'321: We do the search for users. And this becomes quite often, we can say whenever the system crashes. Also this building has several technical problems. It presents problems quite often and it creates more... We have to buy a UPS.'

ar-l-w-3η

'86: Very often the problems that they face are not so much on the use of the computers. Students face problems with using the network. The network crashes and it is slow....'

There are problems that are related with the nature of the service or the contracts of accessibility behind them.

ar-l-m-5"

'159-173: The subject is clearly technical. The provided services are complicated. There are things that are not related to us. Sometimes when somebody searches in the Swets journals, the system stops operating and shuts off...Sometimes OCLC has

similar problems. This however has to do with agreement contracts, with how many individuals can enter and use them simultaneously.'

ar-obs 11: *'they power was off once during the observation process, the system was off for long and all the students ask for help in the information desk librarian'*

ar-obs 20: *'A student uses the catalog and tries different spelling in the general search, she looks nervous and upset. Finally she gets up and goes'*

ar-obs 21: *'The Student cannot find what she wants and she goes to the information desk in order to ask for help'*

Observation notes include events like the above. Users are alone to find their way during searching. Many times ask for help in user sitting beside and other times in information desk.

5.3.2.2 Philology

The academic participants are used in using Mac computers because the Greek fonts give them more possibilities to produce texts. Now they are moving to machines with MS Windows and this has an effect on their work. The information emerging up from participants' testimonies explains the different issues deriving by using different software:

ph-a-m-2

'47: There is no problem, it is easy relatively. I can find what I want for example in the Muse. The catalog is very good but no via nebula (local), only via the Horizon. The technology (Mac) creates problems.'

ph-a-w-3

'93: I had Macintosh in the past but there were problems, I could not fix it so I abandoned it...'

ph-a-m-1

'23: From here I tried to log in the treasure of Greek Language that is provided by the university. Every time I tried it with the directions that they gave me I could not login...I tried it for 2-3 days but I could not use it.'

Lecturers' time is too important to be wasted in a service, which is not easy to access. They are not informed in order to buy the appropriate equipment so they face problems with using the services. Moreover technical support does not exist to cover the everyday needs.

ph-a-m-2

'74: The technician is overloaded, he is occupied with setting up the web site, therefore he cannot respond promptly to all calls.'

ph-a-w-3

'117: Here we have problems with the computers for example if I encounter a problem in word processor there is nobody to help. I could not mention the hardware, which is one of the running problems that we face ...'

Participants express the need for better services and quality of equipment. They have no experience and they are not very familiar with all these programs and services. At the same time there is no enough technical support to help them to face the difficulties.

ph-a-m-2

'94: ... when I go to 'spoudastirio' I want good machines in order to do my job well, otherwise I will not go. It is necessary for them to provide an adequate 'nisida' where we can work efficiently...'

Computers are old and they cannot be used properly in the library. Users need the information on time and available in a quick and easy way.

The students insist that they face system problems and technical problems in using the EIS. About the catalog performance it has been reported:

ph-ps-m

'36: It is slow but it is available...I can still work on it.'

ph-ps-g

'63: We have new computers in the postgraduates' room. It is Ok there...'

ph-s-g-40

'163: Sometimes I do not know why the catalog is stuck, I do not know what is going on and...sometimes when I search and I cannot find something, while I know that it is there...it is very confusing when I cannot find it'.

Students face serious problems with the system and they do not know if it is their fault or system's.

ph-ps-g

'467: Meanwhile it is strange that... particularly with the computers many times... I have the sense that I put the same things and one time I get some results and next time I get other results. Although the way of searching is the same I have different results...'

The system is not reliable and does not retrieve the same result when somebody search on the same way. Users do not trust it and they have to go through very difficult conditions in order to find information they need. This is discouraging and creates a negative attitude against the use of EIS.

Librarians say that there are various problems in accessing EIS even in those few computers:

ph-l-w-2η

'390: All academics have PCs, access to EIS and Internet from their offices. There is a difficulty, present for many of us because here our own philologists started working with Macintosh. ... Macintosh now presents certain problems in the recognition of the electronic catalog. They search with difficulty. They get stuck. They do not print. They have various problems.'

Academics and students have access difficulties:

ph-l-w-9η

'104: From a technical point of view we are stuck in the '98 technologies...afterwards we upgraded them...'

Not even the so-called technical infrastructure exists.

ph-l-w-9η

'112: Sometimes a technician from the central library comes but he comes only for programs originating to them. If there is a new computer, somebody comes to install Horizon and that is all. Apart from that there is a technician who came last year and who is responsible for technical support.'

Technical support is provided by the central library and they are responsible only for their programs but locally in the department they have only one technician. When the system has a problem, librarians do the job on behalf of users. Librarians have to do the users' search in order to cover their needs. More specifically a librarian gives the information about access points and equipment quality:

ph-l-w-2η

'146: When they found certain funding and bought a new computer we removed the old ones to 'nisida'. ..There are three now, two are working but the third is not and could not be upgraded. Certainly they are not user friendly. The mouse is not working. We are not specialised so we cannot fix them. Only one of my colleague struggles with it. Another big problem is that we do not have technical support;. Now little by little we are trying to pass the idea to the academics to ask for a technician's post... '

ph-obs 1: *'There are few computers and their condition is not good'*

ph-obs 13 : *'...an academic comes in the library asking for help because she cannot connect with her new computer. Nobody can help her and the researcher gets into her office and helps the academic to be connected to the network.'*

In their everyday needs users are alone to face the challenge of the electronic revolution. They have to find their ways, not only on how to connect to the network but also on using EIS.

5.3.2.3 Summary

There are system problems and many users, so the connection at home is slow in Architecture. This facility is becoming better but still there are problems. The connection quality depends on the machine quality. The university network is very often out of order. The journal index is not updated. A user was wondering why she could not find a book in the catalog while she had found it last week. The connection at home is not so quick and not all users have a computer at home. Even if they have one it is not easy to connect to the Internet. At peak times it is actually difficult. Some of the users argue that Internet access service is not so bad while it is obvious that the connection quality and the equipment quality affect the service quality. The construction of the catalog has problems because it cannot use the Greek language as well as the English so it cannot search in Greek properly. It can retrieve indexes in alphabetical order so the user can use Greek key words only in one searching choice, 'Browse'.

The participants in Philology support that the catalog is easy to access and use the Horizon version and not in the 'nebula' which is the local version. Macintosh technology creates problems. Users say that the computers must be changed because of these problems. PCs are compatible with EIS. The EIS requires a number of complicated processes for installation or use which cannot be performed by people without specific skills. Users do their best and finally give up when they face persistent problems. There is one technician who cannot cover the needs of all EIS users and the needs of the whole building simultaneously. Also he is responsible for the department's website. The quality of computers in the library is deterrent because they are old and slow. Still now there is no technical support something that has its impact on the EIS.

The academics have access in their offices but they face problems because they started with computers of Mac technology. They bought the appropriate equipment and they are used to it so they have a problem in changing the technology. The problem is that Macs seems to have difficulties in using the catalog. The academics have new computers but they have them at home while some of them do not have a computer at all. The central library supports them technically on some programs. They come when they have new services and programs but on a daily basis there is no technician to support IT and EIS locally. When the system has a problem, librarians

do the job on behalf of users. Students face the same problems as the academics and they do not have easy access to the equipment. As there are not new computers and not many students, it is meaningless to use the few access points in order to reach the EIS. The librarians confirm that the computers are old and slow and some of them cannot be upgraded at all. Students claim that the system is very often stuck. Computers are slow. Students can print for free in ‘nisida’ when it is open. Table 5.9 presents the data summary.

System and technical aspects		
	Architecture	Philology
Academics	<ul style="list-style-type: none"> • The connection is sometimes interrupted • The service is sometimes overloaded and access at home is not easy • The catalog presents problem with retrieval • The economic parameter is reported as relevant 	<ul style="list-style-type: none"> • They face problems because they are used to in using different technology. • Technical support is absent. • Lack of appropriate equipment
Students	<ul style="list-style-type: none"> • The connection at home is not very helpful • The service is sometimes interrupted • The e-learning process does not have the right equipment to be supported 	<ul style="list-style-type: none"> • They face system problems • The equipment is old • The catalog operation is inappropriate
Librarians	<ul style="list-style-type: none"> • The catalog presents problems in its operation. • The network is sometimes interrupted • The service contracts offer 	<ul style="list-style-type: none"> • Problem because academics are used to Mac technology • Obsolete equipment • System is not working properly • There is no technical support. • Huge amount of users compared the access points

	limited access.	
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Table 5.9 Accessibility- System and technical aspects

5.3.3. Control access

5.3.3.1 Architecture

The researcher discovers by observation a parameter which was not obvious initially.

ar-obs 39 : ‘student tries to use electronic service and a window is arising asking for a code’

The students could not use the EIS directly except for the catalog. When they ask for access to the web a message of code requirement comes up. The participants report after this observation:

ar-l-w-2”

‘189: All computers have access to Internet. The user needs to have a password to enter and cannot play or do anything.’

In the end students cannot visit other pages except for the catalog. This policy limits their access. They can only see the catalog page while theoretically they should be able to see also other things if they ask for them. The participant continues:

‘273: If they ask for it we tell them how to use the code, however they do not ask for it.’

ar-l-w-3η

‘38: In the library they can use nothing else apart from the catalog. They cannot see other library pages. Also they can see if they want the ‘heallink’.’

About the necessity to use a password, one participant says:

ar-l-w-3η

‘46: ... it is used in the pages of the university perhaps you can also see certain information from the page of the university generally but you cannot see all the pages of the university without a password.’

About the role of computers and services, another participant says:

ar-l-w-2”

‘185: Of course we do not let them play on the computers; they can only search for books.’

5.3.3.2 Philology

The researcher finds out that there is the same control access in this research site as well. The researcher checked the computers' operation and tried to use the university's website:

philology1 1rst field

'6: The computers have been pre-programmed to show the catalog page when switched on, in the browse choice. There is a controlled access in the same way as in the architecture library.'

Besides all the problems because of the few access points, the library has a policy to restrict the access in order to support the catalog's operation. There are access restrictions so the conditions are not very convenient.

ph-l-w-2η

'206: ...We allowed students to see their email. Primarily in order to facilitate the foreign students that come to Greece, we have many Erasmus students, you see they come here participating in various exchange programs. ... We realized that this policy overburdened the operation of the library. Because fast-typing was noisy- many could type fast-it was distracting and it bothered other people in the library. Or discourage others from coming and searching in the catalog because we had two machines only. What if a machine was occupied for one hour?'

In this library there are many students reading in the same area with the computers then it inevitable to be annoyed by noise.

5.3.3.3 Summary

In order to support the catalog and to be protected, librarians have setup a control system on the library machines. So in Architecture library the system asks for a code-password when somebody wants to use Internet pages. Users have to ask for it from the librarians. Thus, users have direct access to the catalog only.

The picture is quite similar in Philology library although the computers in this library are fewer than there. They control the access to the network. They try to provide broader services in order to cover students' needs but they face problems in the library operation. Table 6.10 presents the data summary.

Control access		
Architecture		
Academics		
Students		

Librarians	<ul style="list-style-type: none"> • The computers are opening on the catalog page • There is controlled access to the web • Password controls the web usage 	<ul style="list-style-type: none"> • The computers are programmed to show on the catalog page first • There is controlled access to the web • Password controls the web usage • Fast typing is very noisy and the use of a computer for personal reasons complicates the library operation.
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Table 5.10 Accessibility-Control access

5.3.4. Comments

5.3.4.1 Architecture

They use EIS in their offices, at home or even at certain times in the library. Mainly they do searching in their offices while some use them at home to an extent. The university provides everyone with connection to the web free of charge at home. If they have the appropriate equipment they can access the web with the university code. The access at home is relatively easy. In the past users were facing problems in using EIS at home. Now there are many lines available but the number of the users has increased. They mention that the university will give more connection lines and the things will be better. One participant associates the quality of access with the quality of equipment or of the telephone line. The catalog frequently presents problems in the university system connection. The system fails at certain times. They have also observed a problem in the results of their research.

The students use EIS in the library and at home. One reports that he uses them also in the ‘nisida’ but researcher’s three-day observation of the place has not found any user using the library there. One participant claims that he uses them in his office. There are not many student users who have an office. This participant works in the department so he has a personal desk and computer access. He is a PhD student at the same time. Also another participant reports that she uses EIS in ‘Internet cafés’ because she has no computer at home. The connection at home is not always good neither fast. The access in an Internet café is more difficult. All the students do not have a computer at home and when they have it they cannot connect to the network

easily at peak times. Few participants say that the connection is not too bad. The connection depends on the quality of the equipment.

Librarians argue that there is access for all users via the university on- and off-campus. There are services which are available only on-campus and will be available off-campus soon. The students ask for information on material they have found the library, at home or other libraries. The students who attend the modules have no time to deal with it at home and they search through the library.

There is a system of access control with regard to the EIS. Directly users can use only the catalog. The rest of the EIS are available by code. This has been arranged in order to ensure computer security. They also want to deter users from coming and playing or checking and searching the web. Certainly there are technical problems that prevent the smooth operation of services. There are problems in the university system. These concern the contracts which the university has with the suppliers of EIS. Furthermore, it is reported that there is a problem regarding the power supply in the building, which negatively affects the smooth operation of services. Finally the librarians report problems concerning the structure of the catalog. The identified weakness in handling the Greek language as well as English at certain times, is another issue. Users often face this problem. It simply does not perform searches in Greek entries because the catalog has not the possibility to create indexes and information available through any other way other than ‘Browse’ choice.

The above information is discouraging users in using EIS. Users want to have an easy and quickly service. The location access can encourage them to use EIS although there are not many machines in the library. The technical system support is insufficient and this concerns all the participants. Academic are in better position than the students because they have access in their office. But that students-users have only the library and the CAD where there is barrier in the EIS usage with the exception of using the catalog. When they face everyday disappointments regarding the use of EIS, users discourage and services are not used. This data section support the objective of this research and help the researcher to clarify the EIS and the conditions they are used.

5.3.4.2 Philology

Academics use EIS in the office or at home. The office is the usual point of access; however participants confirm that they use them for searching or even browsing at home. In relation to the question of the researcher about other points of access, they mention the library and the postgraduates' lab but they do not make use of them.

The catalog is useful in the form of the Horizon application while their computers are Macs. Mac computers are very friendly to the users and serve Greek fonts and 'polytoniko'. Many of the EIS are not user-friendly in such an environment something that causes a number of problems. One technician caters for the needs of the entire building while he is also responsible for building the webpage as well. The quality of computers in the library is very low so there is a continuous problem.

Students have access at home or in the library. There is a lab that is not open anytime so they have no access there. Only postgraduates have a separate lab where they could use EIS or generally computers. Users mention the use in 'Internet cafés', but they have to pay for such services. Also students mention the difficulty to buy a computer at home. Finally the undergraduates do not have substantially access everywhere, apart from the library. The system is many times stuck and no one can use EIS while the computers are slow. Moreover they do not use the catalog under these conditions because there is a card catalog.

Librarians support that all users have access at home - students and academics. There are a lot of problems deriving from the technological equipment that exists in the library for EIS use. The academics can use them in their offices or at home. The students do not know precisely where they can use them. The academics face problems of access because they have Mac computers. They began working with them and their equipment was much more expensive and more functional than the Windows. One participant supports that the academics have or are going to have computers in their offices soon. Postgraduates have a computer room for their needs but this place has controlled access now because problems were created and users can enter only after getting permission.

Technically the central library brings, installs and supports the new service. However on a daily basis there is no technical support. There is also a new journals' library in the basement which has EIS access and computers available but nobody mentioned it during the interviews. The reason is probably that it is in a different building. The

library in the basement has equipment in better conditions; still they are ‘old’ computers. Moreover this library serves all the philology students and is not close to the specific printed sources. It covers only the printed journals and students could not work properly there.

The EIS has not been part of the users’ life yet. Neither academics nor students use them every day in order to support and complete their work. The access points are insufficient and users do not know them. These data provide information about the EIS and illustrate the conditions of their usage.

5.4 IT SKILLS

5.4.1 Users IT skills

5.4.1.1 Architecture

According to the literature review technology has been introduced into the Greek university libraries. This is easy to be proved through the library’s website. Then the objective of this research about the provided EIS in Greek academic libraries is supported. The services are there but their usage level and their role in the academic community has to be clarified and defined in depth. The users’ skill to use them is part of this process and support the effectiveness of EIS. More thoroughly and in-depth participants’ testimonies provide information about users’ ability to use computers and services available via them and illustrate their relation to IT skills. The participants answer on the question of the IT skills they have:

ar-a-m-1o

‘11: Few things. That is to say word processing and such things for work only.’

ar-a-w-3o

‘11: No problem, but I have... I fear them, I do not feel as relaxed as I feel with books or as happy as when I sit in the library.’

ar-a-w-1o

‘28: I use the catalog and the Internet but I am not very familiar with them...I find the printed forms much easier to use than electronic forms. Thus I have learned just the minimum. I cannot say that I feel comfortable with computers.’

ar-a-w-2o

‘15: I do not have a problem using them but I do not particularly love computers.’

Participants feel insecure and they do not consider the EIS to be an essential part of the provided services. Participants in this site work with computer and they have the main skills although they are not very familiar and sometimes they are technophobic.

ar-a-m-2o

'46: I have no problem using computer.'

ar-a-w-5o

'25: I do not have a problem, I am familiar with them. ...if I work on them, I won't have a problem with them.'

ar-a-m-5o

'61: I feel comfortable with computers. Nothing can be done without them.'

On the other hand, there are participants who are familiar enough with computers and have no problems with them at all. The other part of the participants seem to be enough confident to use computers. They can use it to fulfill their basic task but also to use EIS. Only one of them talks with confident about his skills and describes a more professional use of computers and services available through them.

2ar-a-m-3o

'88: of course, I have all my favourite pages organized in bookmarks and go there straight away.'

The level of confidence and experience is obvious in his following testimony. The participant thinks he can find what he wants not only in the library services but also on the Internet in general.

ar-a-m-3o

'9: ... I can find, as I said anything I want. I do not say that I do not find anything useful in our library because I have difficulty in searching. I want to say that the system is so simplified that there is no problem at all.'

The participants' testimonies for users show that there are students who have lack of confidence and they try to obtain some skills:

ar-s-g-1o

'79: about the catalog in particular, I can use it now... I can use computers but not very well, I'm doing my best... '

ar-s-g-2o

'8: Few things. Word processor, such things, for work only.'

ar-s-b-4ol

'64: Generally speaking studying in a university requires to know how to use computers but now in my case it was only in the last year that I learned to use them, therefore you understand how frustrated I feel with the technology.'

Some of them have encounter abnormal results during their searching and when simultaneously they do not feel comfortable with computer participants say:.

ar-s-g-5o

'205: ... honestly I have come here many times I sat for more than an hour, struggling with the computer and afterwards got up and searched on the shelves for the books I wanted.'

There students who can use computers and do not face problem:

ar-s-g-5o-additional

'63: I have no problem with using a computer.'

ar-s-g-additional

'85: I have no problem with computers.'

There are also students who feel comfortable with computers as it is obvious from their words:

ar-ps-b

'62: I have had computer since '94, the 3.1 Windows the first windows that were out. I attended a course on electronic designing. ...'

ar-s-b-1o

'20: ...to an extent I can get in contact with others (email etc) ... I have an email address, I send and receive messages.... I can do some transactions through the computer.'

ar-s-b-3o

'79: I believe that I have IT skills.'

ar-s-g-3o

'74: I do not face any problem with catalog, it is easy to use. Sincerely I have more difficulty in locating the book in the library than on the Internet.'

ar-s-g-4o

'90: Apart from the difficulty of using the Greek language in the catalog I have no other problem with the electronic services. I know how to use a computer.'

ar-obs 41: *'Students are familiar on using computers and can manage to retrieve the information they want from the catalog'*

ar-obs 37: *'A student, a boy faces problems to use the catalog, he seems as he cannot use computer at all.'*

The picture is confirmed by the user observation in the field. There are users in the library who can use the catalog and they are confident but also there are few students who cannot use them. Then the last could not use EIS which require a more sophisticate way of searching and more skill.

5.4.1.2 Philology

The picture in this fieldwork is not coming straight forward. The participants are working and studying in an environment which does not have many accessible computers so they do not have the opportunity to use EIS. Still there are people who use and work with computers. They say:

ph-a-w-1

'207: I know how to use computers because I have worked with them for a long time. It is a tool in my job that I cannot work without it...'

ph-a-m-2

'38: ... There is no problem in obtaining what I want for example in the Muse. The catalog is very good but not through 'nebula', only through the Horizon.'

ph-a-w-2

'329: I have a problem considering the fact that I work on very few... very basic things, no... I only know how to write texts and how to seek certain things through the Internet but I do not know how to use all these in detail ...'

ph-a-m-3

'64: The truth is that the library's page has changed many times, so now I do not even know what is in first page is'

The case of preferring the printed version is revealed in this fieldwork. The following participant is accustomed to in using the printed form so she has no need to use the electronic form.

ph-a-w-3

'9: ... and here we have (printed) all the journals, we have books, therefore I look at them and I do not have to search through the EIS. So far there has been no need to change my sources and reverse to electronic sources'

Another participant criticises himself and expresses lack of confidence in his IT skills and insecurity in computer use:

'117: Here we have problems with computers. I have trouble with Word processing, not to mention hardware, one of the current problems that we face. I do not know where I am supposed to ask for help...but I cannot...'

Academics in this site are less confident about their IT skills. They face the problem with the different operation system (Mac) and they change into Windows. They are not familiar yet but when they use computer in their tasks frequently they adjust themselves in the new conditions.

Students' testimonies about their IT skills are more confusing. They say the following:

ph-ps-m

'88: I can use a computer; I have had one computer since 1986.'

This is quite clear but not the following:

ph-ps-g

'311: I have only used Word, only Word. I learnt it at school. This is and nothing else. But then little by little ...I did not ever know how to connect to the Internet. I learnt to do so lately, then to operate the email, same and to start searching. In the ...'

One participant asks for information on the screen and talks about the problem of finding something she wanted during the searching process. She wonders if it happens because of her IT skills. She makes clear that she struggles with the computer demands. This level of IT skills and computer usage of a postgraduate and especially of a PhD student causes many problems.

The participants' testimonies at the undergraduate and graduate level are even more clear about the user skills:

ph-s-b-1o

'13: Just the basic, certain basic things.'

ph-s-b-2o

'65: In the past I used computers, now I have forgotten all about them'

ph-s-g-2o

'46: I do not face difficulties with computer use.'

ph-s-g-3o

'31: At least I have basic skills. I have a computer at home but no Internet access. Only...if I use it in other places, if I use somebody else's computer or in an Internet cafe again in order to find certain information but only in specific addresses which I already know.'

ph-s-g-4o

'35: I have used electronic services and computers. I faced problems and uncertainty when I logged in for the first time. but I have medium skills ... and I do not have such good relationship with computers.'

Observation notes are not available in this research site because students do not use the computer. The researcher sees only the postgraduate participant in the computer trying to use the catalog and two female students who can use it and just go.

5.4.1.3 Summary

In Architecture the academics are circumspect and they remark that they do not have the appropriate IT skills that they need. Talking about their feelings, they inevitably report anxiety. They do not feel comfortable with electronic information and

computers so they prefer printed information services and sources. Of course there are some academics which use computers but only for certain things and have some familiarity, and others who use them every day and work with them systematically.

Many students argue that they know how to use computers and that they have IT skills. Some students of course do not feel very confident and they mention some kind of fear. Their attitude is not the same as that of the academics. The students know that it is a skill which is necessary to obtain if they want to graduate.

Some of the academics in Philology department have the skills to use some of the EIS. They can create bookmarks and they state that they can use computers. Some others could not claim familiarity and their feelings are very negative. Fear is the feeling they admit while some academics felt overloaded because of the effort to cope with this electronic medium. There are widespread misconceptions that in their scientific field people are not expected to keep themselves technologically up to date because they are theorists.

Some of the students can use computers but some others cannot cope with so efficiently. The postgraduates are really interested and ask for EIS in detail. Although they do not have special skills, some of them can use EIS and they have a computer at home. An important observation in these data is that most users' say that their first search on the network was based on specific addresses. Table 5.11 presents the data summary.

Skills		
	Architecture	Philology
Academics	<ul style="list-style-type: none"> • A few are afraid of computers and prefer the printed sources • They can use computer and do their work at a basic level • Some of them are more familiar but still face problems with search • There are few some academics 	<ul style="list-style-type: none"> • Although they are not very confident they can use the basic services through a computer • There are no experts only users with basic skills • There is some prejudice about the philologists' IT skills and attitude

	who can use them properly in their everyday life	
Students	<ul style="list-style-type: none"> • Students can use computers at various levels but are not afraid of them • A few are confident and have the appropriate skills 	<ul style="list-style-type: none"> • Students at the postgraduate level have IT skills • At the undergraduate level students have the skills to use basic services • They do not feel very comfortable
Librarians		

Table 5.11 IT skills- Users IT skills

5.4.2 Perceptions on the IT skills of others

5.4.2.1 Architecture

Although the following academic participants have no particular problems in using computers they support the idea that students are more qualified in the use of computers than them and often say: ‘they come into contact with them from a very early age, they are growing up with them’. Students feel comfortable with computers and easily can use them. So their words support this opinion:

ar-a-w-1o

‘88: *As I told you about the students, it is much easier for them to search....’*

ar-a-m-5o

‘151... *It is easier for them to study and revise this way, it is cheaper and the students are used to them. They are familiar and they prefer them to books. ... This form is much closer to their style of working.*’

ar-at-m-1o

‘70: ... *they often use them; they are familiar with the Internet and any electronic service...*’

They consider that computer is part of students’ life and they give an explanation about it:

ar-at-w-3o

‘152: *Students use computers too much because all the communication takes place through them...*’

ar-at-m-4o

'68: Now, these (computers) are for children, for students. They are the computer generation. We are more the book generation.'

ar-at-m-5^o

'42: Students use computers. I do not know the extent of their ability to access the electronic services but we are in no way an obstacle to them.'

ar-a-w-2o

'219: ... (postgraduates) They know how to use the Internet and they can handle it....'

There is prejudice on students' skills again. Academics concern that students have the appropriate ability to use the computer. This creates a de facto situation which is not really confirmed through the data analysis. Students in this research site seem to be familiar with computers but this does not include all of the students and on the other hand does not explain under which conditions this is happening.

The librarians' opinions about the users' IT skills show the impression they have of their users although they have not done any research to verify it. Their impression is that users have no problem with using EIS, particularly the youngest. Again there is a priori opinion about students' skills. They report:

ar-l-w-3η

'90: No, they do not have a problem in using the catalog or the computer, most are familiar with it. Certainly, they do not have any problem.'

ar-l-w-1"

'147: None of them has problem in using computers. They are very familiar. ...they can search, the first of course time when they first arrive they do not know. But then they get familiar But they do very well, they get accustomed.... But also we had a catalog for many years and they had familiarized themselves with its use.'

Users have no other choice but to use EIS because the form of the catalog has been electronic for years.

ar-l-m-5"

'77: I believe that they use the catalog because there is no alternative. ...The catalog was made in the electronic form from the beginning and it did not replace the card catalog as it happens in other faculties. Thus it was established that the catalog would be created as the only means of obtaining the information. ...'

The department and the nature of the subject require users to have IT skills because they have a course during their studies and they deal with many electronic programs in order to complete their course. Although users have IT skills they do not use EIS except for the catalog.

'81: ...they do not use other services. Here we take it for granted that they use computers. ... A 99% of them are absolutely familiar with the computers because the department makes requirements on computers usage. ...'

About first year students the participant says:

ar-l-w-4"

'44: they do not know how to do a catalog search, a lot of students do not know how in the beginning. The problem is the language, English...I think that many of them have never used a computer during secondary education... they do not go to libraries'

Data are contradicted in this area. Students are familiar somehow with computers' use but there are students who have not enough skills to use EIS effectively or even use the catalog effectively. Observation notes confirm that students face problems to use the catalog and are not confident all the time. The parameter of the year of their study is important and forms the level of their familiarity.

5.4.2.2 Philology

The Philology department makes different requirements and demands on their students. These have an influence on users' behaviour and IT skills as well. When academics talk about the students' IT skills, they say the following:

ph-a-w-1

'215: Young people know how to use computers. Many students have a computer.'

Then the prejudice is present again in academics opinion about students' IT skills. But also there is the opposite opinion as well:

ph-at-w-2

'82: Our students have problems in using the new technology although they have the modules in the university.'

Librarians report their experience with users and their IT skills:

ph-l-m-1η

'101: They are not educated in them and they are totally IT illiterate. Particularly undergraduates do not even know how to use the mouse. Postgraduates are a little better.'

ph-l-w-4η

'16: Usually they ask for information and they expect an oral answer. If we mention them the available computer facilities, many of them can use the services. Of course not all of them but still there are some ...'

ph-l-m-5η

'133: I believe that they are quite familiar.'

ph-l-w-8η

'22: They can use computers but they do not use the catalog.'

ph-l-w-9η

'96: In any case there are some students who are still afraid of computers. They say I am not familiar; they hesitate to come, to sit. We encourage them to do so...'

Librarians describe the same picture as the academics. They have seen students which can use the catalog and the EIS but also they have seen students who cannot use them.

Clearly postgraduates present different levels of skills:

'160: At the postgraduate level most students know how to use word in order to write their assignments. That is fundamental knowledge that you expect of them in order to search in the literature.'

Librarians discriminate the academics IT skills level. Then according to them academics have not all the same skills:

'164: Younger academics know how to use computers because they do research. If they do not have the skills they acquire them.'

Observation notes in this area are not available because students do not use the EIS during the observation except the postgraduate-female-student participant.

Conversation in the corridor with students and the researcher reveals that students have IT skill when they have attended a private school in the secondary level or when they had a computer in their home. Public secondary education has not skilled them to use computers.

5.4.2.3 Summary

With regards to students, the academics believe that they have more skills in Architecture. It is easier for them to obtain skills and to work and communicate through computers as academics say that 'it is in their way of thinking in their mentality'. It is obviously prejudice and a circumspect attitude. A common idea in their testimonies is that, above all, computers and EIS are not for their age, but for young people.

According to librarians, users have IT skills and use EIS even if the only EIS they use is the catalog. They do not have any other choice because the catalog has been electronic for years. In the beginning when they first come to the library they face

some problems until they get used to in using EIS. The department and the structure of their studies force them to obtain the skills.

Users who use the computers in this library are few in Philology. The researcher spent a lot of time until she could see some of them. Academics have contradictory pictures about students' skills. Participants argue that they support students so they can use computers and that they want to use EIS but on the other hand, they contend that students have problems although they attend classes in obtaining computer skills.

The librarians said that students are not qualified to use computers but some of them can handle them. One participant said that although they can use computers they do not use EIS much, not even the catalog, but when they use it they know how to do it. They can learn quickly when you show them how to use EIS. The following Table 5.12 presents the data of this section.

Perceptions on the IT skill of others		
	Architecture	Philology
Academics	<ul style="list-style-type: none"> • They believe that for students computers are the most useful way of finding information • Students are familiar with computers more than them • Students at the postgraduate level are more demanding and they need them more 	<ul style="list-style-type: none"> • Opinions about students skills are contradictory • Some academic believe that some students are more familiar and some others are not. Some academics believe that the younger generation is more familiar with computers.
Students		
Librarians	<ul style="list-style-type: none"> • They believe that users have no other choice but to use computers • Students are familiar with the catalog • The first year students face problems but the university demands 	<ul style="list-style-type: none"> They consider that students are more familiar than academics. One of the participants states they are IT illiterate. Students who sit in front in the computer are familiar. There are students who are afraid of computers

	lead them to become IT skilled.	
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Table 5.12 IT skills-- Perceptions on the IT skill of others

5.4.3 Developing IT skills

5.4.3.1 Architecture

The users give information on their IT skills but also on the way they learned to use a computer. They say:

ar-s-g-3o

'42: I have not been educated in computer usage and I have not attended specialized private schools. I have learned how to use them alone....'

ar-s-g-5o-additional

'69: I learned during my studying. I learned how to use them.'

ar-s-g-additional

'105: I did not learn in the University but by myself.'

ar-s-g-5o-additional

'76: I attended some seminars during my studies which were architectural programs. I also use the Internet for information. I did not have any previous experience in secondary school.'

ar-s-b-3o

'83: I believe that you learn to use the computer the moment you buy it. Learning comes while you use it. When I was at school we did not have computers, we did not even have art lessons.'

Users are mostly self-educated in the IT skills. Students have a background of information from their schools but they are more or less self-educated. Academics are again self-educated even though there is a participant who supports that she went to a seminar in order to learn how to use computers.

5.4.3.2 Philology

ph-ps-g

'311: I only used word, only word. I learnt it at school. Just this, nothing else... But then little by little...'

ph-s-b-1o

'19: I learnt basic things at school. I remember some of them and I learnt some other things from friends, in group work or when somebody knows more shows me....'

ph-s-b-2o

'113: I do not know many of programs that I can work with. We had a module at school last year but'

ph-s-g-2o

'50: At home when I was young kid...I had heard of Windows, keyword, and so on...at school there was not a module, so I learnt in the university.'

ph-s-g-3o

'51: We had an IT skills module at the school, which was mostly theoretical. The computers were very few so it was very hard to practise on them, with three or four of us sharing one PC.'

post-student girl philology2

'48: I can use computer and search in the network. I learned by myself.'

Students seem that they obtain IT skill in the university and because they need them to complete their studies.

Librarians say about the students' ways of obtaining IT skills:

ph-l-w-4η

'40: At secondary school they take some IT skills module. Usually they do certain homework in the 'Word-processing' Very few because as far as I know, usually the children leave school during the computer lesson class...'

ph-l-w-7η

'88: ...I have seen those who come to the seminars; the majority does not know what the buttons of the keyboard are. There are other students of course, who are familiar enough but ... there are many who are not...'

According to their opinion students are not qualified to use computer when they come in the university. Students learn in the university how to use the computer. In the researcher's conversation with a user in the card catalog area, it is said that:

ph-obs 52: *A student (female) say to me that she learned computer skills at school but she cannot use anything that the Word. She is self-taught'*

5.4.3.3 Summary

Users in Architecture obtain their skills either by personal practice or by attending specific private seminars. There are students who were taught in secondary school, but their skills remain at a basic level. In this library the catalog is electronic so there are users who had no other choice than to learn how to use computers. Also the courses in the department require computer skills.

Although students participate in computer modules in the secondary school they do not trust their skills they feel insecure and they ask for more. One participant attended classes in a private school in the past and a postgraduate declared that she is self-taught.

Students in philology support that in the secondary school students take courses on computers use but this is not enough or the level they reach is not enough to give them the ability and skills to use EIS. Some of them obtain IT skills on their own at the university. Some students participated in IT skills modules in the secondary schools but they did not learn many things and others attended a private school. Most of them learnt them in the university. The data summary is presented in Table 5.12.

Developing IT skills		
	Architecture	Philology
Academics	<ul style="list-style-type: none"> • Educated through seminars and self taught 	<ul style="list-style-type: none"> •
Students	<ul style="list-style-type: none"> • They are self-taught on the use of computer usage • They learn in the university • Few have learned in the secondary school at basic level. 	<ul style="list-style-type: none"> • Students had a course in the secondary education but learnt just the basics. • They are self- or had private lessons
Librarians	<ul style="list-style-type: none"> • seminars and self-taught 	<ul style="list-style-type: none"> • They believe that students do not have particular skills when they come to the university

Table 5.12 IT skills-Developing IT skills

5.4.4 Comments

5.4.4.1. Architecture

Users are doubtful about their skills. Academics observe problems that are due to their age. They say that they do not possess the skills and knowledge they should have in order to use computers. Speaking about EIS, it was inevitable that they would report feelings of distressed or even fear of the computers and they claim that they prefer

printed sources of information. On the other hand there is a number of academics who ask for IT courses or use e - learning to support their classes and who believe that they cannot work without computers and EIS. They believe that it is easier for students to learn, communicate and work with the computer. They believe that students can and have the skills to use them. More specially, one reports that computer is ‘in their way of thinking’.

Students claim that they know how to use a computer. Some of them do not feel familiar enough and even speak of intimidation fear. However their attitude does not appear to be the same as that of the academics. Students know that they should have the skills to use computers in order to get a higher grade. They acquire skills on their own or in the university. Some participants report that they learned certain elementary knowledge at school (secondary education) or that they have attended courses in private schools.

Librarians say that the students have the ability to use computers. They use the catalog because they have no other choice in order to locate the library material. They report that in the beginning when students come, they face certain problems because they have not used a computer before. Quickly afterwards, the librarians support that students very fast learn how to use computers and EIS. The faculty forces them to learn because students have to use them in designing programs in labs. About academics they believe that some of them face serious problems to use them.

5.4.4.2 Philology

Academics believe that younger people use and learn how to use computers more easily. It is obvious also in this part of the sample. Services that require complicated processes in their installation or their use, cannot be adopted by users who have limited skills. Ultimately they cannot do it and they abandon the effort. Some have the skills to use computers. They seem to be skeptical with regard to the skills they possess but also their sentiments about computers are negative. There were a few participants who claimed that they cannot work without a computer.

Some students argue that they could use computers while others not. Even if they are not perfect users they say that they can use some programs or EIS while a few of them have computers at home. Even if students were taught computer skills at school, they are confident about their skills. This concerns mainly first year students of the

university. They believe that they have to use computers every day in order to reach the right level of skills. They learn by themselves. The students do not have particular skills, although some students are capable to handle several tasks performed with a computer. Most of them do not use the catalog but when they do it they know how. Even if they cannot, when somebody shows them they manage to do it. In the schools of secondary education they attend classes dealing with the use of computers but it is not enough in order to give them the knowledge they need.

6. Analysis and findings second phase

6.1 Introduction in Education system

The term ‘Education system’ is defined specifically by this research and it includes the student assessment and teaching and learning conditions as part of participants’ studying experience in the university. This chapter is originally defined by aims but the data collection technique and the depth is going to be directly connected with the previous data collection stages. Then it arises in order to identify the reasons why users use the EIs and it is used to answer the question ‘why do they do it in this way?’ The answer in this question is that the education system and its demands define the role of the library.

The data which are presented here are mainly from the telephone interviews. This chapter includes few data from personal interviews and observations but the majority is covered by the last stage of the data collection. The sample which provides the data is mainly the academics. The researcher considers to interview academics directly and especially on this subject it is quite important in order to understand why they users and mainly the students use the EIS in the way they do it.

This research has been linked with the education system and its dimensions in everyday life via the data characteristic and information. Themes identified by this research are: the general demands of the faculty, the teaching process, the role of assignments and the role of bibliography in the learning process. This part of data supports the objective which concerns the users’ needs in relation to their academic studies. This relation is fundamental in order to understand what is happening in the research sites and how the EIS are used.

The general demands of the faculty define the obligations and requirements, which are prerequisites for students’ graduation. The nature of the curriculum as well as the teaching process, have an effect upon the students’ real needs and, as a consequence the level of EIS use. The role of the assignment and the role of bibliography in the learning process define the real need for students to use EIS and the frequency they use them.

6.2 University demands—Role of exams

6.2.1 Architecture

Participants describe the assessment process in the Greek university. The researcher finds out that the role of the exam during their studies is considerable important. Students have to do some assignments but their role in the assessment process is supplementary or covers half the average of their mark. Theoretical modules require different assignments from the practical modules. Then participants' testimonies support:

ar-a-m-1^o

'123: In a few modules we have assignments. Usually they supplement the final mark. But it can be 50% and the other 50% is the written examinations.'

ar-at-m-1o

'118: In theoretical modules they have to write few assignments. They also have to pass a special module in their 5th year. Students have to do research project. ... and they have to submit an extended essay.'

ar-at-w-3o

'42: ... these assignments are not enough to pass the module.' And:

'94: They do some assignments. They have to attend lectures, seminars and do a few assignments.' ***ar-at-w-1o***

'46: We would not say assignments are optional. There is a percentage of the grade that comes from their assignment... The examinations can be 60% and assignments 40%.'

Even if students have to do assessments, these are not enough to pass a module. The assessment process includes assignments and exams. But there are modules which require writing an assignment and presenting it in the class. These assignments are enough to pass the module.

ar-at-w-2o

'42: In some modules students pass their module only by an assignment and in others they have to go under exams. In the first case they have to present it to the class and answer questions.'

ar-at-m-2o

'86: They have to write a paper, a thousand words and have to use bibliography at the end. They have to search and find it in the library or anywhere else. Still, the written exam is the way to pass the module. And, to get their marks.'

Students have to use the library in order to complete their assignments.

ar-at-m-5^o

'74: We give them a subject which is the only way to pass the module. The same assignment is the way to assess the student.'

ar-at-m-4o

'24: O.K some modules require both assignments and exams on the subject of the module and some others only exams.'

And he concludes:

'88-90: We ask them to write assignments, they attend lectures, they have a subject as assignment and take exams.'

Then, their studies require writing an assignment and designing assignments which are compulsory.

ar-at-w-5o

'38: Sometimes yes, they do the assignment and they get the marks. Some other times not. Students have to use the library or to write an essay or make a design and then they have to take exams.'

Then students have the motivation to use EIS and in this research site they have the IT skills as well or they obtain them during their studies.

6.2.2 Philology

Exams and assignments can be used as supplement to the assessment process in this site as well. But students in the philology department do not have many assignments and their access in EIS is difficult. This department has some special needs as well. The subject which covers is language and literature. There are many essays in Greek language and they are not available in electronic form. There is some digitized material but there are many printed sources in the library.

ph-at-w-1o

'42: Certainly there are modules in which they should (also give examinations). There are others do assignments. They need to present their subject.'

ph-at-m-1

'62: Assignments could not be optional. They could be... but they would have to give exams.'

ph-at-w-2

About the university requirements, lecturers say:

'18: The requirements depend on the module. In some module students have written exams or oral exams. Students may have assignments or a combination of the above.'

About the role of examinations, students say:

ph-s-g-3o

'191: we have to give exams to pass the module anyway.'

About the role of these assignments librarians says:

ph-l-w-7η

'110: They have to pass exams so the assignments role is not very important. I do not know if they have assignments and pass the module only with them.'

The role of the assignments is more or less the same in this research field as it way in the Architecture. Students have few assignments which are compulsory or not.

Students mainly have to pass exams and they can do assignments as supplementary.

6.2.3 Summary

According to academics, students have to do assignments although these assignments are not enough to pass a module in Architecture. They have to read notes from their classes and read further information to pass exams. The role of exams is a major issue even when they ask for a written assignment complementary to the practical exercises in labs. This confirms the literature which supports that the learning system is based on one text/book. Usually assignments are part of the final mark. There are few modules which do not require exams. But in most of the modules, assessment is based on both. All the theoretical modules demand exams. When students can pass the modules only by assignments, these assignments can be one or more drawing s or writing. There is a final project which has more demands and motivates students to use EIS. Participants' testimonies add a piece on the objectives by informing about the real studying conditions and learning process. When students do not need to use the EIS in order to complete their modules they have no real reason to use them.

Exams with assignments are the assessment means but the latter are not many in Philology. The role of an assignment is not important. The exams are the dominant means of assessment. The picture, in this research site, is more traditional. Students have almost no assignments and they do not have final project as well. So they have to pass their module by exams. The academics provide them the one text as the literature says. There is no motivation to use EIS. Summary of the data is presented in Table 6.1.

University demands		
	Architecture	Philology
Academics	<ul style="list-style-type: none"> • Exams are compulsory and students have to pass them in most modules • Assignments are not enough to pass the modules • Their studies include lectures, seminars and a few assignments • Students have to read further than just attending classes and submit a final project 	<ul style="list-style-type: none"> • Exams are compulsory and students have to pass them • Assignments are not enough to pass the modules • Their studies include lectures, seminars and a few assignments
Students	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Exams are necessary to pass the module

Table 6.1 Education system- University demands

6.3 Postgraduates specific needs

In this case participants' testimonies present a different picture between the undergraduate students' and postgraduate students' demands and needs. Participants talked about postgraduates and their requirements:

ph-ps-g

'59: Students in post level need to search and find more information. ... It is not feasible. It is not possible to ask for assignments at this level. There are too many students. Only at post level.'

Post-graduates have more requirements and look for more in depth information sources.

'391: The undergraduate does not learn to do research. In the English department students have courses where they learn to do research. We do this work when we are postgraduates. Undergraduates gain a lot of knowledge if they take them.'

Librarians confirm that students in postgraduate-level need more information sources thus more electronic services. The difference between the two levels is clear:

ph-l-m-1η

'73: in undergraduates there is no need but in post-graduates there is a need.'

ph-l-w-2η

'518: postgraduates find themselves 'in deep waters'. Many times they write their first assignment at the postgraduate level.. They do assignments for each module, and the large one at the end. They search in every way. They come to the library and search everything.'

ph-obs 44: *'Every day the researcher meets a postgraduate (female) who is struggling to find the information she needs in the library.'*

ph-obs 59: *'For many times, the researcher talks with this girl informally and the comments are relevant to their qualifications in using EIS and IT skills.'*

6.4 Summary

University has more demands from the postgraduate level students. They have more requirements and need more information. They have assignments while undergraduates do not. Students at the postgraduate level need more information and they search more. At final year things are different. There are not many assignments and they are complementary to the final mark. Some students do assignments at the undergraduate level but most attend the classes, read the module's notes and the academic's text book and finally pass the exams. Librarians confirm the picture that academics and students support. At postgraduate level needs are more complicated. Students face problems because for many of them the assignment at this level is their first assignment. So they search everything and ask for everything. Thus, an exception on this research site is the postgraduate level. Postgraduates have to use EIS in order to complete their studies. So the conditions in this level push them to ask and learn about them. The gap in the undergraduate level creates frustration in these students. Education demands are increasing while their skills are not. Table 6.2 summarises the data taken and analysed in this section.

University demands	
Philology	Postgraduates
Academics	<ul style="list-style-type: none">Postgraduates have to look for more information
Students	<ul style="list-style-type: none">Requirements at this level are differentLearn to search
Librarians	<ul style="list-style-type: none">They need the EIS

	<ul style="list-style-type: none"> • They have projects to complete • They search for everything
--	--

Table 6.2 Education system-University demands Philology

6.4 Teaching process

The teaching and learning process is difficult to be defined. It was not part of this research in the first stage and it is searched in terms of its relationship with EIS. This research is data driven and data led the researcher to discover this area. Participants described the process through their eyes. Their testimonies are contradictory. In this part there is information about the way participants work in the class and the role of assignments and bibliography.

6.4.1. Architecture

About the teaching methods and the learning process, participants say that the teaching process includes lectures and presentation without any specific student participation during them. This process is more relevant to the traditional teacher-centered methods:

ar-at-w-1o

'30:.. I use the blackboard and present the theory, which depends on the curriculum context at the time. We use the rest of the time to practice the theory. We apply what we said in theory.'

ar-a-w-2o

'211: The learning process includes lectures, seminars and labs. During the first year students do not have many assignments and what they do get is more supplementary.'

About the learning process participants say:

ar-at-w-3o

'86: We have many modules particularly in the subject division. Students cannot work in depth in the theoretical subject area because there are so many modules...'

About the teaching process she says:

'94: ... As you can understand the module is not integrated in a seminar or lecture and we could say this process is passive.'

At the same time she says that:

'112: Students search on a subject in the library and write essays. They learn independently.'

ar-at-w-5o

'30: ..These assignments demand the use of the library and sources in printed and electronic format'

About the learning and teaching process students say:

ar-s-g-2o

'112: The teaching process includes mainly lectures. This happens in 'core' modules in the first and second year and a little in the third. Lectures are the main teaching way and participation is minimal. In specialization things are different. Lecturers require more participation even though lectures are again the teaching process'

ar-s-g-3o

'114: Modules concerning theory include lectures. The labs are a different story.'

The teaching and learning model is traditional. Seminars and passive students participation in the process is the main way to complete the modules. Students do assignments during their studies especially in the end.

6.4.2 Philology

In Philology things are different. The department covers a more theoretical area and as a result the teaching and learning process is different. Participants link the teaching process with their personal weakness in using technology and the academics' age:

ph-a-w-3

'177: I believe that we still have the traditional teaching process. This happens because there are many academics that are old. They do not feel very comfortable with technology so they do not use it. They can not reform the teaching and learning process.'

These are the participants 'opinion about academics' attitudes in an old age.

Education process is not innovative because of their negative attitude on the new technological means. Other participants argue that they use passive and active practices in teaching and learning but still they are not positive to changes.

ph-at-m-1

'66: we could say that sometimes the education process is active and other times it is passive.'

ph-at-w-1o

'94: A student attends lectures and seminars. They do some assignments. They read many things that are not included in the lectures. The module is not completed in the lectures.'

ph-at-m-2

'34: Modules are lectures... but I encourage them to participate and have their opinion. There is a discussion upon the class content but it includes me and them and it is not between them. We cannot go into it too much because afterwards it would be impossible to teach.'

This is a dialectic approach in the class. He continues:

'38: My module is not a seminar but a lecture in a classroom. It is an open lecture and we could discuss a subject. Sometimes I have some questions and students have to answer them so I can check how they react.'

Students' comments about the way of teaching and learning are without hesitation, that it is passive:

ph-ps-m

'216: Passive learning and teacher-centered'

A postgraduate in philology says that although he graduated in '98' he believes that the situation is not different now.

ph-ps-g

'367: Usually classes include lectures. The process is the academic coming and presenting a subject. In some courses we could present an assignment but we still have exams.'

The teaching process includes lectures without student participation in the process.

ph-s-b-1o

'83: Other courses are based on a more dialectic process. During this process we talk or academics assign us to do exercises. Also there are courses in which nothing happens. Simply the academic presents his own notes, you keep notes during the lectures and you take exams afterwards.'

The participant illustrates the education demands from his side. He continues:

'91: In 'ancient Greek'(title of a module) we take the text, the professor tells us the comments and translates the text and this is the module. However there are other modules during which we sit together, analyze, we say our opinion about other books, together... there is a dialogue with the professor.'

He describes the dialectic and the more active modules process.

ph-s-b-2o

'150: The teaching and learning process depends on the module. History for example...the academic gives lectures and that is all. There are other courses, which demand assignments, or we discuss things during the lecture.'

ph-s-g-3o

'179: Most of the modules are lectures. Some courses were in this style of work presentation. We used multimedia in one course only, projector, and computer. It is a course we had for technology. Students attend and participate with coursework etc. Yes this is all. There is not anything different.'

ph-s-g-4o

'75: Depends on the module. In some modules we have notes to read in some books. Few of the modules are seminars.'

Modules require seminar participation. Students have to participate in a dialectic process but they do not have the opportunity to learn independently. The model of teaching and learning is more or less traditional and students have to passively attend the course. The assignment is part of the process but is not widely applied and still its role is supplementary.

6.4.3 Summary

The teaching and learning process includes lectures seminars and labs in Architecture. At the beginning of a student's course the assignments are few and their role is supplementary. There are many modules and students could not tackle a subject in depth particularly in theoretical modules according to participants' opinion. The course demands include that students reproduce the theory and they have to do it. These results confirm the literature although participants declare that they learn independently. In practice they offer few opportunities to their students to develop their learning skills off the class. The learning process could be characterized as passive although participant say that students learn independently. Students argue that they have lectures in the first two years and less in the rest. They agree with the academics on this point. Participation is not great while in specialization (in the fifth year) things are different because academics have more requirements. More requirements mean more students' involvement. There is a different policy and different demands in practical and theoretical modules but still the most demanding is the final project which require more research so more EIS usage. Then academics ask for more participation which is directly linked with EIS usage. And this is the pivot. This point will be more obvious in the data analysis part, which concerns the assignments role.

Philology department offer lectures or seminars to their students. The teaching process is teacher-centered and students have very few opportunities to participate actively in the class, lectures and seminars. Lecturers work in classes and try to attract students to participate actively via dialogue and conversation. Participants support that the teaching process is more traditional because of the age of academics and they could not change their way of teaching. Students have to keep notes during the classes, read them and pass the exams. Academics have to face a large audience so they could not assign assignments because they could not check them properly. The modules are introductory. All this happens in the first years of studies. Later, the audience is smaller but the old habits remain. Lectures and seminars cover the content of studies. The teaching and learning process is sometimes passive when they have only to attend lecturers and sometimes active as participants characterise them.

There are lectures where the academics simply present a subject. Very few modules give students the possibility to do assignment; during some modules the teaching is based on a dialectic process and in doing exercises. Student still have to pass exams. In other modules students have only to attend the lecture and pass exams. So lectures and few seminars are the way of teaching and learning in the class of the Philology department. Students participate as the audience and few times participate actively when the module is practical. There are no compulsory assignments which require research so students are not motivated to search about information in EIS. Table 6.3 presents the data of this section.

Teaching process		
	Architecture	
	Teaching and learning	
Academics	<ul style="list-style-type: none"> • Lectures, labs and seminars are part of the teaching and learning process • There are theoretical and practical modules • There are many modules • Assignments are part of their studies after 	<ul style="list-style-type: none"> • Traditional teaching and learning process • Lectures and seminars are part of the teaching and learning process • There are theoretical and practical modules • There are many modules • Passive and active process

		the first two years	
Students	<ul style="list-style-type: none"> • They attend mainly lectures • They are not active • Labs are a different ‘story’ • In the specialization they participate more 	<ul style="list-style-type: none"> • Passive learning and teacher centered • Dialogue is the mean in some modules and in others they attend lectures • The teaching and learning process depends on the modules nature 	

Table 6.3 Education system-Teaching process

6.5 Assignments

6.5.1 Architecture

Assignments are considered important in this research, something that determines the EIS usage to be or not, part of the student participants’ everyday life. Academics have the experience and have their way to find what they need to do their job. They have personal subscriptions and they are members in scientific international communities. They have been doing it for a long time before the EIS’s existence. Participants say about the assignments:

ar-a-m-1º

‘75: They have as assignments small essays. Specifically, ‘in the specialization’ we do enough work. They can find articles by searching by themselves. I mean that they can not find them via computer; they can find them in print..’

The academic are used to use the printed version of sources but this picture is changing. They require students to search and write small essays as they argue, especially in their final year:

‘103: it happens mainly in the final year, in the specialization. I said that is from the third year and afterwards.’

ar-a-m-3o

‘203: Students do assignments which includes literature review, reading and writing notes 5-10 pages, depending on the module...’

‘205: They write literature review assignments, they do. They read and they write certain notes 5-10 pages depending on the course. They also do a large one, the ‘diplomatic’ project. The last is more extensive. They do it in the final year.’

ar-a-m-4o

‘24: O.k. some modules require students to do assignments and take part in exams, oral or written upon the subject of the module.’

ar-at-w-1o

'34: They have assignments and they submit them after the course.'

There are different types of assignments, some of them are more theoretical and some are more practical. Although the participant argues that students have to submit assignments later, she said that students do not write essays. Moreover, participants explain about the type of assignments that:

ar-at-m-1o

'18: Students are required to do drawing course-work, small building models and such things.'

Lab modules require assignments and this is enough to pass the module. Students have no exams when they produce a model during the class in lab. About theoretical modules they confirm that:

'54: In theoretical modules, which includes lectures, students have assignments which have to be presented in the classroom.'

The different characteristics of a module present, as a result, certain requirements in theoretic modules and others in practical modules. So the participant says:

ar-at-w-2o

'50: In my module, students have to search the literature. They have to write assignments sometimes. Not so often as they did in the past. Now they write an assignment but it is not very demanding. They still have a lot to do for the lab. They do architectural subjects thus, they draw. Not only in the theoretical module they write some assignments but also we encourage them mainly to search in the library and particularly in the architectural journals.'

ar-at-m-2o

'54: Students do not have assignments. They have to produce drawings so we ask for those designs and planning. Only in some theoretic modules do they write essays but we encourage them to use the library. Particularly the printed information.'

ar-at-w-3o

'30: They have assignments. We ask them to work in the 'spoudastirio' (library). They have to do it. They have to work with books and electronic sources.'

ar-at-m-3o

'18: Students are required to do drawing and planning work, and such things.'

The following participant makes it clear that assignments are sometimes compulsory and sometimes not but mainly they are not enough to pass the module. They confirm that students have to do assignments during their studies although assignments are not always extensive or even literature research assignments.

Participant says about assignments:

ar-at-m-4o

'40: They have assignments and they are not very complicated and are supplementary. Students have to do a small research project for example 'the archeological site of Knosos'. They have to find information and produce a small presentation with a small design.'

ar-at-w-5o

'69: Question: If I understand correctly students do not have the kind of assignment that requires using electronic sources and having references at the end?'

'70: Answer: Of course there are these kinds of assignments but not many. Students need to do assignments and use literature in any form printed or electronic.'

Students do assignments particularly after the first three years. The course duration is five years and in the final year students have to submit a large project (specialization or 'diplomatic'). The role of the last project named 'diplomatic', is quite important and compulsory.

ar-a-w-2^o

'30: Students work on a subject as an assignment. They cooperate and they submit it at the end of the semester.'

And:

'215: Students have no assignments, at undergraduate level, particularly in the first three years. They have mainly exams and some assignments. At the end of their studies, students have to do a project and research a subject area. This project requires that students use the library. At postgraduate level, students do assignments and need the library more.'

ar-a-m-3o

'203: ...They have the final 'diplomatic' as well. It is a more extensive task for graduates.'

Students' testimonies support the given information by academics. As academics support and students said, the assignments are not part of the first year course.

ar-s-b-1o

'97: We have assignments. It is impossible to graduate without assignments. Till now nobody has asked for essays. Of course it depends on the person.'

And he makes it clear:

'105: we are assessed by exams and design models.'

ar-s-g-2o

'92: We have assignments. We have to write small tasks particularly in the last years of studies.'

About the nature of the assignments he says:

'120: In all modules assignments are not optional. Just in a few. Many assignments play their role in the final mark. It could be half the assignment and half the written exams.'

Many lecturers ask for assignments but not all:

ar-s-g-2o

'104: Many lecturers ask for assignments, not all, but enough.'

Students confirm the role of the final project as well:

ar-s-g-2o

'72: We have assignments, especially in the graduate year and in the 'specialisation'.'

In more detail he says:

'76: we can find articles and search by ourselves. It is not necessary via computer. We can find them anywhere. We can find the sources, which they prompt us to search, without the help of computer.'...

Librarians' testimonies describe their picture of assignments. About the assignments, the participant from the library said:

ar-l-w-I"

'232 Very few lecturers ask students to come to the library and find some information on a subject. Students have few assignments. Not so many but they have few. Normally they need to review the literature in their last year when they have a 'diplomatic'... Usually they do assignments when they reach the graduation year and then they need to do literature reviews. There are a few modules where lecturers promote them to come to the library and find information by themselves. This is all.'

Academics attitude about EIS usefulness affects on the students choices during their final project completion. Students need to use EIS but academics can force them to find the needed information in the EIS but if academic are not positive or do not even know the EIS could not propose them as a resource to their students. It is obvious that these final project at least requires to use EIS and students have to use them in their final year. Probably librarians should provide special user education for the final year and have more free access points in the library in order to cover their needs.

6.5.2 Philology

The picture is different in the Philology department. In this department there is a defined problem by participants which concerns the big audience in the classes. Especially academics find it difficult to apply active learning methods in their classes

and they consider the students' number quite a discouraged parameter. Actually, participants say about their experience:

ph-a-m-1

'63: Only when the audience is small and we control the assignments do we ask for them. In the last few years we have had too many students so that is impossible. We used to have 20 students in a seminar class but now even in seminars there are many students.'

ph-a-m-3

'108: We have big and small audiences. Many lecturers have large and small classes. In the large class it is not feasible to cover the number of the students ... Modules of the last year of studies which are 'at choice obligatory', the audience is small but the mentality (habits) remains. And students are used to this way and so are we.'

ph-at-w-1o

'30: We demand from them to do assignments and work in the lab. They have to work in the library with any source. These assignments are not the only way to pass the module.'

A participant adds more details about the nature of the assignments:

'50: Of course, the assignment requires searching literature. They do not write essays. Not always. Usually, in the old days they wrote more but now, they write something but nothing too exigent. The module is practicing in a lab.'

It is obvious that modules based in a lab have a more practical character. In this department lecturers ask students to write simple things during the class but there is still the need to go to the library and get information.

'86: The University does not require them to do many assignments because students have many modules particularly in my department. In theory subjects students have many modules so it is not easy to search a subject in depth.'

ph-at-m-1

'22: Look, we have lectures and seminars. Now students work in the lab, do some reading there, sometimes borrow books for a day or two but we are not very willing to lend books.'

The library does not borrow books at the time of the research. Now this practice has changed and users can borrow books from the library. It is one of librarians' intentions to achieve this service for their users.

He continues:

'46-50: In seminars, students have to submit assignments... My module is oral and theoretic just like a lecture. There are seminars. Students have to submit assignments.'

Students support that in the first year they do not have assignments at all. They describe their experience as:

ph-s-b-1o

'59: We do not have any assignment in the first year as far as I know. After the second year we have some compulsory I think. In the first year we do not.'

ph-s-g-1o

'48: we have no assignments. I have not heard of any modules in having them in my year. (first year).'

ph-s-g-2o

'150: In some other modules we have to search in the library, we do assignments, discuss with the lecturer.'

The picture is changing during the rest of their studying years. They are not compulsory so they have no reason to do them:

ph-s-b-2o

'125: Till now we do not need those (EIS). I have no reason to learn how to use computers or to search information in electronic forms for my modules'

ph-s-g-3o

'75: We do not have obligatory assignments, up to now at least. Now those who have written assignment as I have seen, yes, it can be in such form. And of course, they also use these services and others via computers. I have not had to do any at least in this form.'

Librarians get the feel of students' needs. They support that there are not many assignments and that is why students have no reason to use EIS:

ph-l-w-2η

'510: Our own 'children' do not do assignments. They do not do assignments. Our own 'children' read. They read the material that the teacher gives them, the bibliography that the teacher gives them and they go and give examinations, written.'

In the question if they have even some assignments, she says:

'514: Very few, very few. There are few students who seek for extensive things. But it is a small amount. 10% of students with us deliver a small assignment.'

ph-l-w-4"

'80: They have some assignments. There are very few students who really do assignments... They do not use electronic services. They do not have motivation to do it. They care only about doing something quickly. They repeat the same assignments every year.'

ph-l-w-7η

'102-110: Students do assignments. They do assignments but I do not think they use electronic services. They ask for printed sources, books and journals.'

ph-l-w-8"

'146: Students have assignments but I do not know the content and what they really need to use. They do not ask for database or electronic services except the catalog. They do assignments in some modules.'

The academic believes this situation affects on students attitudes again. Students prefer to use printed sources than electronic and academics prompt them to use the printed form because they use this form.

6.5.3 Summary

In the beginning of their studies students do not have many assignments but later there are more in Architecture. Students have assignments of 5 to 10 pages depending on the module. Some modules require assignments and exams. The assignments, which they have, are practical, particularly in the labs and they are compulsory. The specific nature of the lab modules and lectures defines the role which an assignment has. They pass the module and they do not need to use anything else but the practice and design skills. Students could use the library. They have a look at designs but they do not have to write many essays and do research in the literature. In theoretical modules students used to write assignments in the past but now they do not write so many. The 'diplomatic' they have to do at the end of their studies is very important and has a literature review character. Postgraduates need to use EIS more.

The important in this part of data analysis is that academics link assignments and searching to printed sources. This library has computers available to users and provides the catalog in electronic form. Users have to reach the information via electronic services anyway. They are used to use the printed version of journals and information sources so they encourage students to do the same. Another point has to be mentioned here is that participants believe that in the past things were different and they asked for more assignments than now.

Students in Philology confirm that they do not have assignments in the beginning. Students' obligations include small-scale assignments mainly drawing and designing. They have to do the 'diplomatic' later. The assignments are not compulsory but

optional. Not all academics ask for assignments. Students in the architecture department confirm that they have to do a big project in their later studies.

Librarians say that students do not have many assignments, just a few. Librarians get the feeling that students use the library extensively in their last years of studies. The researcher got that same feeling because she faced the difficulty of meeting and talking with students in their early stage of studies.

During the research field students usually do not have to do assignments. The number of them in the classes is high and this has an impact on the learning and teaching process. As a result academics avoid asking for assignments because they could not check students' work properly. Usually these assignments are practical and not essays. The difference between theoretical and practical modules is obvious in this department. The practical modules require doing a practical assignment while in theoretical ones they do not require assignments. The university requires many modules and they do not go into them in depth. Students work in groups and they present their work at the end of the semester.

Students say that they do not have to do assignments particularly in the first years of their studies. They have to do some assignments later in specific modules. Not all of the academics are asking for assignments. The university requirements are not likely to demand the EIS usage frequently. Students' needs could be covered without using EIS.

Librarians argue that students do not really have assignments and they do not need EIS. The only assessment mean is the exams. They have few assignments, which are simple and short. They share them in groups and there is no need to use EIS to complete them. Students do not ask for databases and EIS and they do not have many requirements.

In this research site there are problems with accessing EIS, including the electronic catalog. Even if academics ask for assignments students could not use EIS. They do not know them and they do not need them. The section data are presented in Table 6.4.

Assignments		
	Architecture	Philology
Academics	<ul style="list-style-type: none">They have small assignments	<ul style="list-style-type: none">They give small assignments when they have

	<ul style="list-style-type: none"> After the first two or three years Students have to submit a final big project Students in the lab have to draw as assignments 	<ul style="list-style-type: none"> small audience Students have few assignments They have many modules Seminars require small exercises
Students	<ul style="list-style-type: none"> There are few written assignments They have drawing assignments There is a final project at the end of their studies Assignments are not always enough to pass the module. Sometimes they are. 	<ul style="list-style-type: none"> There are few written assignments Assignments are not always enough to pass the module. They are enough very few times
Librarians	<ul style="list-style-type: none"> Students have few assignments when they reach the final year They have to search for their final project 	<ul style="list-style-type: none"> Students have no assignments They have few small exercises

Table 6.4 Education system-Assignments

6.6. The role of Bibliographies

6.6.1. Architecture

Students do not have a bibliography list to support the catalog searching. They have to find it by themselves and they start from doing a subject searching. The lecturers and their demands define the students' actions. Their attitude has an effect on students and their choices. About the role of bibliography, participants say:

ar-a-m-3o

'195: ... the students ask for bibliography, they do not understand that it is enormous.'

ar-a-m-5o

'127: Students usually search, they search ... they are looking in volumes which have all the bibliography. We give them the relative subject and they search the bibliography in the relative subject alone. And they search alone.'

ar-at-w-2o

'50: Students have to search the bibliography. They have to do it alone. They are compelled to find it alone. Therefore they are compelled to go to the library and to search.'

ar-at-w-3o

'24: Of course. I give them a bibliography list many times in order to make it easier.'

Students say that they rarely have a bibliography but usually they have to search alone in the library and find what they need. They use the catalog to support their needs in assignments and their studies. About the bibliography list students say:

ar-s-g-1o

'37: Question: I can see you have a bibliography list and when you need something you come here and search?

'39: Answer: Yes that is it, when I have a relevant assignment I come here and look for them in the catalog.'

The nature of the bibliography list is:

'59: No, (they do not give us concrete bibliography) always, simply I do subject searching when I do not have a bibliography list. My search is depended on writers or something similar. We do not (have a bibliography list) all the time. Simply we search by subject or author or anything relevant.'

ar-s-g-2o

'124: We usually search, we search ... there are volumes which have all the bibliography of every year, they give us the relative subject we search the bibliography in the relative subject. And search alone.'

ar-s-g-3o

'86: It depends. However, I usually use the subject search straightforward. I know the subject and anyway I do not come with a concrete bibliography. After a subject is assigned, I have to search by this subject...'

ar-s-g-5o-additional

'101: I do not have a bibliography list. I have a specific subject and I have to search the catalog for finding information on it. I use specific words in the quick searching option and I obtain a catalog with all the information I need.'

ar-s-g-5o

'125: Look...in this specific case I have a bibliography list but normally we do not have any....'

When the academics provide a bibliography list students have no reason to search the catalog more than going through the general searching choice. When students, do not have the lists, have to develop a personal way to search the catalog. Then they start by the keyword search which is effective in English language but totally inappropriate for searching in Greek language.

6.6.2. Philology

This case covers a more theoretical subject area. The teaching and learning process include more lectures and fewer labs with applications based on practicing. The participants talks about the bibliography list:

ph-a-w-3

'148: I do not ask them to search the library in my module. I give them the bibliography list and ask them to read it. It is in printed form and we stop there. I used to tell them that they could find more things and read but they are not used to do it. They do not need to do it.'

According to participants testimonies there are no electronic sources to support the assignments so students have to use the printed form.

ph-at-w-1o

'96: We give them bibliography list and in a tutorial I help them to write an assignment.'

Participant presents his opinion:

ph-at-m-2

'50: The assignment has to have a bibliography list in order to be completed. I give them a bibliography list which they can find in our library, I have a file there in a box. It has the course name and I photocopy the contents on behalf of them....in order to avoid searching...etc. I collect it from different texts...and in case they lose them I replace them in the file again. So they do not have to search.'

And:

'90: Personally I do not encourage them and... the subject.... As postgraduates, they do it but not at the undergraduate or graduate level... and afterwards they should read part of the bibliography list that I give them...so there is not a real reason ... a bibliography that includes five, ten, twenty sources ... that is enough to get an idea.'

ph-at-m-3

'47: Students have bibliographic assignments and mainly they use printed sources.'

The students consider that the bibliography list is quite useful. They talk about it:

ph-s-b-1o

'93: The bibliography list they give to us aims to inform us about books. It is quite important I think.'

ph-s-g-1o

'105: They give us a bibliography list and try to make us familiar with books. It is quite important and unfortunately only one lecturer does it.'

ph-s-g-3o

'131: All the lecturers give bibliography lists. I know that other lecturers ask the students to find the bibliography list, to search and find. Of course afterwards students will discuss the list with the lecturer; they will agree which books will be used etc. But most times they give a bibliography list for the examinations.'

ph-s-g-4o

'151: When I have an assignment I have the bibliography list based on it. I have it from the lecturers. In the class, lecturers give the bibliography list on their subject and based on it you go and find the information in the library.'

ph-ps-g

'335: I work with a bibliography list that is given by the lecturer, although I prefer to go to the libraries without a concrete bibliography...'

A librarian testimony supports the idea that students do not need to search the literature during their studies:

ph-l-w-2η

'502-508: Usually they come with a bibliography list. They do not have the chance to enter the catalog to see, lets say ... this or that... this subject ...they would if they had certain assignments.'

6.6.3 Summary

Apart from one participant, the picture is that students do not have a bibliography list. They have the motivation to use and search in the catalog. One participant who has a bibliography list supports that usually academics do not provide students with bibliography. They choose a subject and they have to search alone to find information and support their assignment. Subjects are simple. And academics do not demand it. They use the catalog to cover their needs and this is in electronic form. They have to find it by themselves. Academics do not give them a bibliography list although students ask for it. A participant supports that students cannot understand that the literature is huge and that personal choice is important. There is a tool in printed form available in the library with all the published articles about architectural subjects and there they search and find the information they need. They have to find it by themselves as students and academics agree. Furthermore, the department policy has an effect on students' behavior. They are motivated to use EIS in order to complete their assignments and gradually being familiar with the various electronic library services.

In Philology academics provide students with a bibliography list and they do not ask them to find it by themselves. This list mainly covers information in printed form so students have to read and work with it. One academic participant has a separate file with all the articles and information concerning the subject of his module, thus, students have to read it. The EIS in this case are almost invisible so this practice is normal. Students cannot approach the huge library material effectively via a card catalog. This happens because the librarians try to abandon it and they do not update it. Therefore, the bibliography list is a solution. This is the old way of working and this site supports the traditional model of teaching and learning. The library does not have modern equipment yet and students are not accustomed to the new ways of accomplishing tasks using EIS. Postgraduates have more information needs while undergraduates need to read the bibliographic list. Students have the bibliography when they have an assignment to do or to read about a subject. Academics try to encourage them to use the library as a ‘work’ area. Only one academic of the participants asks for a literature review and when the students find the information, they bring the material and then both decide what is important. Another participant says that students can find the bibliography list- including articles etc- in a separate file, and read and write assignments from it. In this department students have few assignments and the bibliography list is provided to support them. This list is like a reading list and supports their effort to pass the exams. Librarians believe that students have a bibliography and they are looking in the library to find books and journals. However, they do not use even the catalog. (Table 6.5)

The role of Bibliographies		
	Architecture	
	Bibliography	
Academics	<ul style="list-style-type: none"> • They give students bibliography for just few assignments 	<ul style="list-style-type: none"> • They give them the bibliography • They supply a file with all the appropriate information on their subject
Students	<ul style="list-style-type: none"> • Few lecturers supply students with bibliography • They search by subject 	<ul style="list-style-type: none"> • Lecturers supply them with bibliography list
Librarians	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Students come with a

		bibliography list and look for this particular information.
--	--	---

Table 6.5 Education system- The role of Bibliographies

6.7 Comments

This part of the data analysis illustrates the university demands as well as the teaching and learning process. The evidence of this section supports the objectives of this research which concern the education system in the research sites and make clear the conditions of the EIS usage there. It is infeasible to understand the EIS in both sites without this information. So the picture which they build is presented in the following paragraphs.

6.7.1 Architecture

The Architecture is a school which covers a practical and theoretical area. They have labs and lecture classes. In labs, students must submit designs and drawings in order to complete their studies. Academics recommend them to go to the library. There are indices and journals in printed-form with all the appropriate information there. The academics are accustomed to using these sources so they prompt them to use this printed version of the information source. This means students have no reason to search the EIS extensively in order to complete their assignments. They go to the library, check the catalog for finding books or journals which could help them to complete the task. They are not used to use electronic sources extensively. The catalog is the only electronic service they use. It is not available in printed-form and they have to learn how to use it. Printed sources are friendlier than electronic sources because academics do not know them and do not feel quite familiar with them.

Academics' opinion has an effect on students' choices and attitudes, a fact that makes academics aware about any available EIS and their characteristics.

Students have different obligations regarding the lectures. In a theoretical module students used to write assignments in the past but now they do not write so many. They can not check them properly so they avoid asking for them. Students have to do assignments which are not enough to pass the module. They are supplementary to the

exams. They have to read the class notes and the information which the academics give and take part in the exams. The main way to succeed in the exams is to read and memorize the information. The students have to read the one text book or their class notes and after that have the exams. Usually assignments are only part of the final mark. Thus, there is no serious motivation to achieve a good quality in these tasks. There are few modules which do not require exams. But in most of the modules assessment is based on both. All the theoretical modules demand exams. In their first years of studies students have no assignments at all. Testimonies support this and the researcher fieldwork proves it. The first time the researcher went to the research field she could not find students in the early studying years. This makes up one of the main reasons which forced the researcher to leave the field and go back later in the academic year. And again, even later it was not easy to meet first years students. This probably means that students do not visit the library.

The students in their later studying period need the library and its services, as participants say. There is a final project which has more demands. The ‘diplomatic’, which must do it at the end of their studies, requires an extensive literature review. Librarians get the feeling that students use the library extensively in their last years of studies. The researcher got that same feeling because she faced the difficulty of trying to meet and talk with student in their early stage of studies. Postgraduates need to use EIS more in order to do the tasks related to their course. The researcher spent many hours waiting to meet them because they do not spend much time there. They have afternoon and evening classes and they also have a separate place for studying.

The assignments cultivate the students’ critical thinking and develop their skills for a life-long learning. The research for the needs of the literature review gives them the opportunity to develop skills which will be important during their whole life.

Academics do not provide students with a bibliography list in order to complete their assignments. The researcher saw only one student who had a bibliography list and checked the catalog according to that list. In this school a list is not generally used to support students in their assignments. They have to find out the bibliography in a subject by themselves. This could be very motivating for EIS usage if the students knew what they could find on it. The bibliography list drives students to search the catalog only by name and they do not have the opportunity to do many things but the subject search requires critical thinking and to gradually develop skill which will be

important for the rest of their life. The EIS usage is the mean to construct their knowledge and learning in depth.

This school presents more or less an active students' participation in the learning process. Although students cannot easily access and use all the available EIS, they have to search by themselves, using the catalog regularly. Although students cannot understand that the literature is huge and that personal choice is important in the researching process, they do it. The education demands include that students reproduce the theory and they have to do it. In this research site users are forced to use EIS.

6.7.2 Philology

The Philology school presents a specific picture. It is a theoretical department without much technological equipment. There is no computer lab available for students. Students could volunteer to complete assignments at this level but few do, mainly because they are complementary to the final mark. According to students, later in their studies they have more opportunities to do assignments. The librarians and academics testimonies do not support this idea. There are no easy access points; this is a negative parameter. The academics have big audiences and they can not manage to check assignments appropriately. So they do not encourage them. For such reasons, students do not have many assignments and they have to complete their studies by taking part in exams. They have to read the bibliographic list (the reading list) which the academics provide. Very few students do assignments at the undergraduate level but most attend the classes, read the lecturers' notes and the books and finally pass the exams.

The university has more demands on the postgraduate level students. Students on postgraduate level have to do searching and writing essays. They have to do assignments and at this level it is not unusual for them to be their first in their studying life. The conditions and demands are quite stressful. The university has more requirements in terms of their obligations. Postgraduate level needs are more complicated.

Lecturers work in classes and try to attract students to participate in the teaching process by doing exercises, discussions and sometimes by giving assignments.

Participants argue that the teaching process is more traditional meaning that students are sitting while the academic gives a lecture. The modules regarding EIS are usually introductory and it is not possible to cover them in depth because of the number of students. Teaching and learning process is sometimes passive and sometimes active. The important point here is that the EIS usage is not necessary in order to complete their modules and finally their studies. The university requirements are not likely to demand EIS usage frequently. Students' needs could be covered without EIS.

In Philology academics provide students with a bibliography list with all the appropriate information they have to read. Students have nothing to find by themselves. This list mainly covers information in printed-form, so students have to go to the library, read and work with the bibliographic list. There are academics that provide them with a specific file with all the information ready. Thus, students have only to read it in the library. This happens because there is not much information in electronic-form to cover the module area and it is difficult to gather the information upon a subject. So the academics support their students with all the appropriate information because it is not easily accessible. Academics try to encourage them to use the library. They ask them to go there and work with these files but still they do not push them to use even the catalog. Librarians support that students have a bibliographic list and they are looking in the library to find books and journals.

7. Research findings

7.1 Research findings

This chapter focuses on the research findings, presenting the empirical evidence and an interpretation of these findings followed by a discussion of this evidence within the context of the theoretical framework identified within the published literature. The literature review along with an investigation of the university libraries' web sites, have shown a plethora of EIS are available now; their number is increasing rapidly. The data collection process and the analysis stage reveal how EIS are used in order to address a core objective of this research. The background theory was based on the literature review helping to build the proposed research framework. The empirical findings are presented in Table 7.1, showing the four major themes identified by the fieldwork, including the emerged factor of education demands.

Education demands	<p>Where the educational system and the department require assignments, students use EIS but this is only evident in their last years of study and at postgraduate level</p> <p>Academics encourage students to do research using the EIS</p> <p>Exams are still the most common assessment type on the majority of modules</p>
EIS	<p>Academics use EIS more than undergraduate students. The motivation for their use is actually the assignments and the projects</p> <p>User education is an area which needs to be reviewed</p> <p>Promotion plays an essential role in the students' awareness and usage</p>
IT skills	Users have IT skills at some level

	Academics obtain them on a self-instruction basis while students get instructions mainly during their studies.
	Some of the students and academics feel afraid of the new services and prefer to work in the old way.
	Age seems to be a variable which affects users' attitude on EIS usage.
Access	Users have access to the website of the library from their office, home and computer labs.
	There is a gap in technical support.
	The services instability affects the library reputation and confidence on the quality of services.

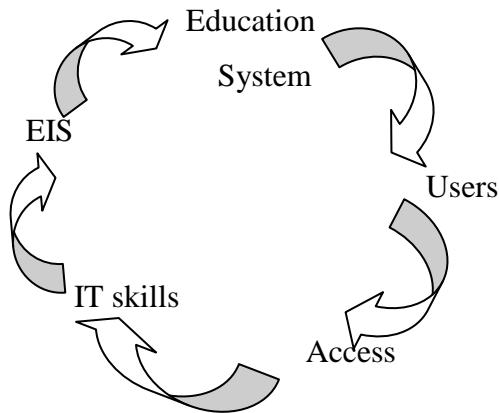
Table 7.1 Synopsis of major research findings

The major findings in Table 7.1 are the result of the iterative process followed during the data collection, the data analysis process and the literature review. The focus in the beginning of this research was EIS and their use in the library or in any other place that could be approachable in Aristotle's University. The literature review drove the researcher to be focused on some other issues such as the accessibility, users skills and users needs. Users have access to EIS- in relation to their IT skills- in order to fulfill the educational system requirements. The needs of the users were the initial starting point for this qualitative investigation. Thus, this research strongly supports the idea that the educational system has an impact on users and their needs and as a consequence on the use of EIS. This relationship between the educational demands and the use of EIS was evident in the participants' testimonies. Any education system has specific requirements which affect the users' attitude and behaviour.

Figure 7.1 represents the interdependence of all factors operating within the educational system and the impact they have on each other. When planning and

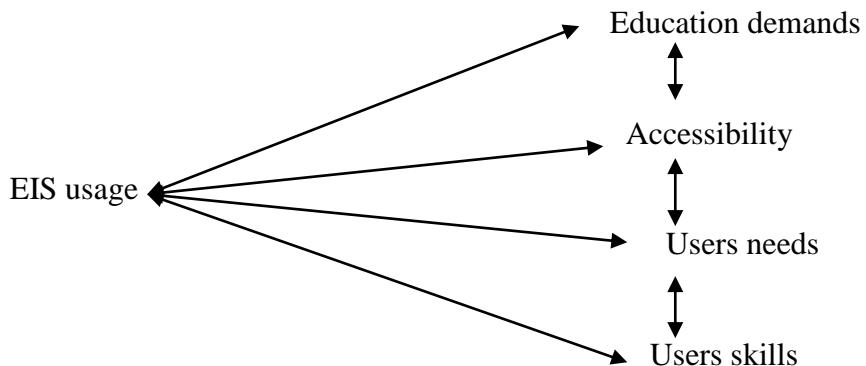
developing new and expensive support services, all aspects have to be considered and all stakeholders have a role to play in the successful implementation of those services.

Figure 7.1 The data findings circle



The direct relationship demonstrated in Figure 7.1 focuses on EIS usage and Figure 7.2 demonstrates the direct relationship this has to: education demands, users' needs, users' skills and accessibility.

Figure 7.2 The interrelated themes



It is evident from this investigation that library management should consider carefully the structure of the underlying educational system and its requirements, i.e. accessibility, user needs and skills, in order to achieve a high level of quality services. The provision of EIS is a high stake investment which needs to be carefully and strategically implemented in order to ensure both efficiency and effectiveness. Moreover librarians need to support the value of these services by initiating performance measures that can provide evidence of value and usefulness. Reactivity is necessary in order to achieve the best conditions for EIS provision and use. They have to carefully consider the above parameters in all proposed changes.

7.2 Discussion

The discussion that follows covers the basic themes which emerged as a result of the research and sheds light on the research sites. The first theme is EIS; it covers also their application in the context of the research site. The use of EIS was directly associated with the access of EIS as well as the IT skills of the users, in order to approach the available information. Issues coming up during the observation process, along with the participants testimonies, reveal that there is a direct link between the EIS usage and education in Greece.

7.2.1 EIS

Libraries have to find a way to play an important role in the current technological environment. The information explosion creates a complex information environment. Users can not always manage to approach them. Their operation is linked with the effective service provision. There is a remarkable growth of electronic services in academic collections worldwide (Tenopir, 2003, TQMU, 200-2008) including Greece. In this framework, libraries have an overwhelming task to cope with and support their users (Kichuk, 2010). The mission of education has changed dramatically and the users struggle to survive in the new reality (Dunn & Menchaca, 2009).

This challenge is huge and involves academics, librarians, students and the whole of universities' community in general. There is not only information proliferation in the libraries but also there are many digital organizations offering a huge amount of information available through the libraries pages. They offer a variety of searching environments, a diversity which is confusing for users (Carlson and Yatcilla, 2010). All these conditions affect research and the way of learning, particularly in Greece where all this accessible information is available quite recently.

The most usable service in the architecture library is the catalog. This is quite common during the first stage of the introduction of EIS into the libraries' daily life and it is not a coincidence. On the contrary, this is their only choice in the Architecture library, where all users have to use the catalog as there is no other way to find out what is in the library (Pantouli & Nikserlidou, 2002). As a result, all the users have developed the appropriate skills to approach this service. On the other hand, in the Philology library, the card catalog offers to users the alternative and the

opportunity to avoid this task. In this case, library's administrators and university managers should ensure that technological equipment for these services and access points are proper to be used, as it has been found that in the Philology library, participants do not even use the catalog. The department and the scientific area are more conservative. Users have access to the card catalog through a limited number of access points or computers that not meet the minimum requirements. Thus, users had no reason to insist on looking for EIS which are entirely unavailable. As a result even the on-line catalog is useless.

Information seeking behavior is an area under on-going investigation as was shown by Urquhart and Yeoman (2010). The literature review emphasizes on the different attitudes and information seeking behaviour between the different disciplines (Sheeja, 2010). There are different usage patterns between different parts of the academic community. Kulthau (2004) and Nicholas et al (2009) have shown that students constitute the biggest number of users. Undergraduates and postgraduates are the most likely users of the library. Users are not very familiar with all these services. They do not either have any relevant experience or are fully aware of the advantages of using them. Therefore, users are not accustomed to use them in order to develop a specific information searching behavior.

Uncertainty is a significant parameter in the searching process. Users face problems in the information seeking process; this is an obstacle in use of EIS. The library managers have to check and decrease the amount of this uncertainty in order to offer a service of quality. Chowdbury and Gibb (2009) argue that there is correlation between information-seeking activities and factors such as the age, information and communication technology (ICT) skills and user categories, a fact that is in compliance with the findings of this research. In addition, information-seeking activities and information-seeking problems, causing uncertainty, have a significant correlation with disciplines as well as users' gender, supporting in this way the results of the current research.

Timmers and Glas (2010) have developed a tool in order to measure the information seeking behavior process, during the assignments period. This tool has four scales and 46 items which can shed light during this process. Fainburg (2009), in a theoretical article about Kuhlthau's ISP-model and Dewey's problem solving model, concludes

that both are focusing on the close relationship between thinking and action and they consider the process as learning.

Students use the EIS when they need them, for example if they have assignments to do or projects etc. The profile of EIS usage is defined as a direct relation between assignments and the level of this usage. In the past, the access to literature sources was a very time-consuming and expensive task. It was not easy to ask from students to do a literature review on a subject or ask them to write an essay. Libraries should have all the printed information in the physical library. Today, things are different, as we have EIS and all the international literature, whereby a single ‘click’ may create a more demanding use (Staurou, 2001).

This is the cornerstone of the EIS usage. If academics ask from student to complete an assignment, then EIS usage is more or less inevitable. The level of complexity and the actual task are important in terms of their feasibility and productivity. The role of the library here is going to be important if the assignments become part of the studying process. Nobody can say that this will secure a better knowledge but, it can offer a diversity of learning ways which in the past was impossible to be applied.

This research shows that the use of the EIS is strongly depended on users and their special needs something which has been already identified by relevant researches. According to Deng (2010), ‘...the awareness and the quality of the available electronic resources are the two important factors for the effective and efficient use of electronic resources’.

The participants’ attitude concerning the use of EIS is positive. All of them recognise that EIS could be only for good in the university community. Their opinions agree on that computers are quite helpful and EIS could save them time, providing them with the chance to develop their knowledge. Academics are aware of these EIS possibilities. They do not consider them as the only way to obtain knowledge. They have access to the facilities which EIS could offer and they know their usefulness. Academics believe that they are useful because EIS support them to complete their job easy and quickly. Swan and Panda (2009) argue that academics increase the level of using EIS. Students consider EIS as a useful tool during their studies, although their role seems to be complementary in their early studies because it is directly linked

with their task. At the end of their studies, when they really need them, they recognize their usefulness. The physical result of this is that any service is useful.

Although user education and user support are part of EIS provision, the fact that are based on the central library it does not seem to be enough. Researches in the field advocate the importance of user instruction assessment programmes (Resnis et al., 2010, Hsieh and Holden, 2010). It has been shown that the provided services are not enough when the users have not been educated on how to use them. For this purpose, each individual library has applied its special user support programme while the central library offers a general one. This policy makes things more complicated. The users argue that the offered programme in their library is enough for their needs, although they admit that they do not have the appropriate information about the basic user support programmes offered by the central library. Practically, it is a remote service offered by the department and users are busy fulfilling their tasks. Therefore, information about the provision of a user education service, which could empower the use of EIS, is not visible.

The current promotion campaign does not encourage users to go and find out more about EIS education. This dual nature in the user education programme is confusing and not tangible. A solution to this would be the establishment of a more effective communication channel between the libraries as well as the existence of a better organised programme.

The promotion of the services is necessary and has to have a way to be evaluated as well as to measure its effectiveness (Kiran, 2009). This picture is vivid in both libraries, although the Philology library provides formal and, on-request user education even at a very basic and general level. A number of students participate in these user education programmes whilst they could participate in the central library user education class as well.

The provided support, as part of the general induction session, does not seem to be very useful. Support in an individual basis could not cover the formal and continuous user education services. It is practically impossible to cover all the users' needs. It is time consuming and really expensive. In the end, there is a wonderful service which is useless as it is unknown. Students should be supported at the time they need it. Most of the libraries in Greece do not deliver information literacy programs but rather some

kind of library instructions. The lack of funding seems to be the main obstacle (Korobili, et al 2008). A better organized information literacy programme could be more helpful.

The literature reports the importance of library marketing. Promotion of the library can play an essential role in the organization effectiveness. It does not have to be expensive. Cronin and O'Brien (2009) support this idea proposing some low cost marketing initiatives in order to make their library visible and effective. There are many ways to promote the library and its services; Web is one of them. Usually, libraries lack of any services for promotion policies (Kiran and O'Brien, 2009). For example, promotion policies can be enough in such extent as to attract users making a service successful in Nigerian university libraries (Nwezeh, 2010), a practice which should be used also in Greece (Makori, 2010). For this purpose, Germano (2010) proposes a narrative-based marketing plan for libraries.

The role of the academics is another important parameter that should take into account. This research has shown that academics could promote EIS to students but they do not do it. They do not know the EIS very well and they do not feel comfortable with them so they do not encourage students to use them. They are the first ones who should be educated and then promote the EIS to the students. But academics are too busy to participate in user education and this affects their knowledge about the content of the EIS and their promotion to students. The libraries have to find a way to approach the academics, to promote the service and to convince them about their usefulness. And that is the challenge.

The literature reports the collaboration with faculty and recognises its importance. According to Yu the library can introduce a model of 'Faculty member as a library specialist of the library' (Yu, 2009). The importance of collaboration is not something new in the libraries field (Bennett and Gilbert, 2009). Successful collaboration between the faculty and university in building students curriculum, is essential according to Riehle (2008).

7.2.2 Accessibility

In the Architecture department, academics have access on EIS in their offices while students have access in a lab and in the library. All can use EIS at home. In every case, authorized access is based on using a valid username and password. After login

into the system, they can use the Internet. The facility is obviously useful for all of them. There are some obstacles to this procedure. Academics may more easily have a computer at home, something that is not always feasible for students. The cost of the equipment is not affordable for all students. Moreover, students who attend classes have no time to work at home. They rather prefer searching on the Web, while they are in the library.

As a result, the quality of the provided services affects the way a user uses them. Moreover, the number of computers and access points in the library affects the use of the EIS. Users want the service when they need it and if they have to wait for it they are not satisfied.

There is a considerable amount of research in the field which supports the idea that easy access on a service, affects the usage of that service (Hachett, & Parmanto, 2005; Oduwole, & Akpati, 2003). If the process of login to the network off-campus is difficult and time consuming, then it is not easily usable. But still the possibility of using the university network remotely is important for them because they can complete a task away of the campus.

Participants report frequently problems regarding connection to the university network. The system is ‘crashed’ at certain times, for example due to technical problems with electricity. The lack of availability of a service could affect the user perception about its quality. Stability of a service is necessary in order to preserve libraries’ reputation and ensure the use of services. These conditions form prejudices and users’ negative feelings about the stability of services. As a consequence users may not trust the library as the place they can rely on to find the information they need. Moreover, their searching experience with the only usable EIS is not always easy because the catalog is considered as insufficient. The system has a problem with the Greek characters; Greek is the language of the majority of users. This is another drawback for EIS in the university (Melgoza et al, 2002). Participants struggle sometimes to reach the information they want just because of system’s limitations.

Computers in the library are few and not all of them have access on the Internet. Access to the EIS requires a password in order to save time and protect the machines, something that discourages new users to visit EIS. Every time a student needs to use the catalog he/she cannot see the rest of EIS and has to ask for help. This is

considered as a disadvantage. On the contrary, EIS have to be approachable and straight forward. Any limitations to the access on-campus make them not user-friendly and practically useless. Although services are there, computer facilities and access points are tech-poor and need to be renewed and updated. Libraries have to provide users with the appropriate equipment in order to fulfill their mission.

Nowadays, libraries in Greece face problems to support even the journals subscription and things seem to get worst but still there is space to improve the services.

7.2.3 IT skills

Participants' age and their skills define the way they use the available services. It is only a human habit to be less positive to changes and challenges at a later working age. People know and are accustomed to work in a particular way and they are not very positive in changes even when the new proposed way is better and easier. It should be mentioned that technophobia is a phenomenon which has been recognized by researchers and considers all ages with an emphasis in elder people (Chowdhury and Gibb, 2009).

In contrast, they believe that the younger users are positive in new technologies. This is not what happens all the time, but people still believe it. The academics consider that students learn new things more easily and can adopt new ways. It is easier for the academics to keep going with what they already know and got used to for a long time. On the other side, students are facing, in a lesser degree, a dilemma whether using the new technology or not. They do not have a particular way of working. Actually now, it is the time that they are learning and one of their areas is the IT skills.

Users do not have much experience on using IT services and EIS. The aggravation happens when users face technical problems frequently. It is quite disappointing and discourages them from using EIS. EIS proliferate while provided services are complex, requiring a good level of IT skills. Users 'struggle' to handle them. They feel uncomfortable. Academics seem to be more circumspect about their dexterities while students seem to be more confident.

Libraries have to concern very carefully the offered services and provide users with the appropriate skills in order to use them. This means that university has to be more proactive and supply the academic community with the appropriate skills in order to

be able to use these services. The university policy in this field and the library's aims, have to be in full compliance as the emergence of these service should be considered in depth.

Users' attitudes and skills are relevant to their personal way of obtaining IT skills. Few of the academics participate in formal seminars. Most of them are self-educated in IT skills. Academics consider themselves to be always very busy. They have their own way of completing their work and they do not feel that the IT skills could improve or determine the quality of their job, essentially. The students are learning IT skills mainly in the university when they need them and they use them during their studies. Moreover, users rely on others to learn information about sources, collecting information or obtaining IT skills. Especially PhD students, when they have to use EIS and the library (Vezzosi, 2009, Kumar, 2010). Although secondary education includes IT skills subjects as part of the main curriculum, the reformation of the Educational system in Greece has to collaborate and create this part of curriculum in a sound and well-formed basis.

7.2.4 Education demands

Assignments play a specific role in the use of EIS. The level of their quality defines the depth of this use. Learning methods are now linked with methodologies such as the independent learning, learning in groups and problem-based learning. Worldwide learning styles are linked with critical thinking skills. The behaviorism and cognitive theories are part of the teaching and learning process in Greece. The universities' policy in Greece, but also worldwide, is associated with more independent learning methods making it easier to work in groups and adopt modern educational practices, concentrating thus in student-centered methods. This way of learning can be exploited by libraries by offering possibilities which previously were unapproachable. While most of the students search independently in EIS, the aforementioned approach will lead them developing the desired skills, which is an objective of the proposed 'New School' in Greece, nowadays (2010).

Exams are the basic tool of assessment during students' studies. The use of exams as the only way of assessment supports traditional learning methods (Papazoglou & Semertzaki, 2001). Students have to read lecturers' handouts as well as any other information given by the academics. The main way to succeed is to read and

memorize the information. This is a characteristic of the traditional learning method which demands from students to be passive during the learning process. And it acts as a proof of the way that students learn and how academics teach. The new educational practice, which is based on independent learning and a student-centered environment, is appropriate for them, something that cannot be found in the research sites.

In order to complete their modules and ultimately their studies students have to pass the exams. The important point is that both research sites have just a few computers and especially in Philology library where the use of EIS is not necessary for students. As a result, users there, ignore these services as they do not have them available in the library. It is a question why the university and the government spend a lot of money for a service that is not used. Having classes with many students is another reason that discourages academics from giving assignments because they could not check their quality. University should reconsider its policy based on the results of this evaluation and make sure that the new learning practice can be applied. The large number of students, generally, seems to be an obstacle to this way of teaching and learning. The cost of a service should be reflected on the use of this service otherwise it is useless particularly in a period with many financial problems in Greece. This means that the university policy is not linked with the library's policy and the current teaching and learning practice. This is oxymoron. The university requirements are not likely to demand EIS usage frequently as a necessity. Students' needs could be covered without EIS.

Education system and its reformation should reconsider this practice in order to improve its operation and increase students' outcomes. Students need more motivation than a supplementary mark in order to be actively involved in the assignments process. Libraries worldwide have been recognized for their important role in the process of structuring effective assignments. They provide relevant information on their websites for supporting academics to prepare an effective assignment and to help students to find their way to complete them effectively.¹ They have already developed 'learning commons' in order to encourage users to use their services (Somerville and Brar, 2010).

¹ Some examples are: <http://www.lib.utexas.edu/services/instruction/faculty/creatassignment.html>
http://www.bsu.edu/library/article/0_24478--00.html <http://library.csueastbay.edu/using-the-libraries/services/services-for-faculty/designing-effective-library-assignments/>
<http://www.lib.berkeley.edu/instruct/assignments.html>
http://www.oxfordpubliclibrary.org/assignment_form.htm
<http://www.brookes.ac.uk/library/guides/studyskillsguide.pdf>

In Greece, the Ministry of Lifelong Learning Education and Religious affairs (2010) is trying to promote educational system reformation in terms of the proposed ‘New School’. This reformation can be helped by a library and its EIS. Students can be creative, developing critical thinking skills. Information literacy skills are already libraries’ task in other countries. Greece can be part of the global community and adopt their practices and their programmes in order to achieve their aim and support university, the academic community as well as the knowledge and the learning process.

Another issue which can be identified in this research is the language obstacle. Although the impact of language/culture communication barriers and technology barriers on the international students’ access to libraries has decreased in America (Liao et al, 2007) students in Greece can more or less read English (Pantouli & Nikserlidou, 2002). Nevertheless it is not their mother-tongue and it takes lot of time to read and fully understand an article. Many of EIS are in a full-text database while their written language is either English, German etc. Greek EIS are very few and usually linked to other libraries’ material. But the reality is that students do not know the context of the rest of EIS, apart from the catalog, so they do not even consider talking about these problems. The problem which they face is huge because they cannot understand the language while there is a lot of information in EIS. In advance, there are lots of procedures which they have to learn in order to use them. Users face problems regarding the use of such huge amount of information and the way that all these services work. Librarians and academics should consider this parameter very carefully in order to achieve a better service quality and usage. The literature in this area presents libraries, for example in the English-spoken countries which have many immigrants, offering parts of their services in other languages in order to achieve better usage.

There is a plethora of tools which can support students to improve their English. There are many websites and on-line tools which are built to serve people who speak English as foreign language, something quite helpful for the English libraries because of the number of immigrant students. Probably Greek libraries could include some of these links in their sites and exploit their services (Hickok, 2005).

There is a significant difference between the two different disciplines. The school of Architecture is more technological involved. Students are accustomed in using the catalog, at least. Traditionally this department is more modernized, supplying students

with more equipment than the theoretical school of Philology. That was the reason of choosing these two sites as the domain of research. In the literature has been already identified the difference in EIS usage and users' IT skills in different disciplines. The Philology School presents a different picture, more traditional and less adaptive to new technologies than the one in the Architecture School.

Current researches in the field support this conclusion. Humanists are still stuck to the printed information sources in Greece. Tahir et al. (2010) present the same picture in Pakistan University libraries. Graduates of the Humanity studies use and cite more printed material than electronic resources, according to Wu and Chen (2010). In the case of material in electronic form, students prefer e-journals than e-books.

8. Conclusions and recommendations

8.1 Presenting the relation between the aims and objectives to findings

Conclusions and recommendations are based on the integration of the themes and issues identified within the literature and the rich and detailed empirical data harvested and analysed from the two research sites. Participants' attitude and testimonies demonstrate the direct link between the use of EIS and the department's demands. The level of EIS usage can affect the quality, engagement and output of both education and the learning process as it can be related to the individual and to a group. This research has attempted to identify the links between the use of EIS and the learning process, in particular how this impacts upon active-, as opposed to passive-learning and the level of independence required from the learner in the tasks they are given and the learning outcomes of their study.

Libraries are under increasing pressure to become learning organizations, supporting a culture of continuous, lifelong learning. They have to react in the current circumstances and be more creative (Jain and Mutula, 2008). The growth of technology in libraries and universities and the increased potential for the creation and publication of education materials 'offer great promise for supporting continual improvements in academia' (Ranjan, 2008).

In order to ensure the continued success of their services and ensure they are 'fit for purpose' libraries need to evaluate their services and try to keep in touch with their users and the evolving needs of those users (Park, 2010, Noorman et al, 2010 and Malliari et al, 2010). In order to maintain a high quality of service delivery, librarians continue to investigate on user satisfaction and service quality (Kiran, 2010, Asemi et al, 2010, Bergman and Holden, 2010), something which needs to become an integral part of the Greek libraries operation. Greek libraries need to develop ways to assess the service provision in order to establish the service as a de-facto in the academic community.

This research aimed to '*critically explore the use of EIS in Greek Higher Education libraries in relation to the educational needs of users*'.

This was achieved by focusing on 4 specific objectives:

1. Explore the provision and use of EIS in the Greek Higher Education.
2. Identify the needs of users in relation to their academic studies and demands of the educational model in Greek universities.

3. Create profiles of the user population based on the use of EIS in the case study sites.
4. Identify the relationship between librarians and users in terms of delivery of EIS in the case study sites.

The literature review and a tangible longitude research investigation of the Greek university libraries' websites confirm that there are many EIS offered; their number is increasing rapidly. The data collection and data analysis revealed the EIS use and the effectiveness of those services. The nature of users' need was illuminated by the literature review in terms of the more general aspects and conditions but the local detail and depth of use was discovered and mapped by the empirical data collection. The next objective concerns the profiling of users in the case study sites and exploring their patterns of use and how it is integrated into their educational context. The final objective was to identify the relationship between librarians and users; this investigation has revealed the relationships between librarians and users in the delivery of EIS. They both have been covered by the data analysis, emerged information and this research finding.

The main intention of this research was to investigate use of EIS but it has emerged that a significant factor in the use of these resources is the pedagogical philosophy which underpins the role of these resources in the educational process. This discovery is the result of the iterative process followed during the data collection, the data analysis and the literature review.

The focus in the beginning of this research was EIS and their usage in the library or in any other place that could be approachable. Literature review drove the researcher to be focused on some points such as accessibility, user skills, user needs. The data analysis drove the researcher to expand the investigation to the wider context. Thus, while users' need was the first focus in this qualitative research, later on a new issue came up concerning the education system and the educational demands in relation with EIS. This research highlighted how the use of EIS is intrinsically linked to the educational philosophy of the university as well as to the needs and skills of users.

8.2 EIS

The most frequently used and usable service in the library is the catalogue. Users access the library via the catalogue. For them this is the most overt representation of the library and sources available to them. The library should provide a high quality, robust and reliable online catalogue that is accessible to all potential users, as a cohesive and efficient service. In advance, there should be robust and reliable access to the wider range of EIS that have now become an intrinsic part of academic life.

Use of EIS is linked directly to user needs. As users are exposed to an increasing variety of sources and become increasingly more aware of the information available outside of the library environment, they will become increasingly more discerning in their demands and requirements. Library services need to be cognizant of these developments and be continually reviewing their services in light of changing user requirements.

In this investigation it was evident that users were satisfied with the services offered but this was directly linked to the nature of the pedagogical paradigm prevalent during the investigation. Two predominant parameters, which affect users and use of EIS are, the supporting systems available to user as well as user education. The library needs to offer induction sessions and user education in order to introduce its facilities and services to users, and to provide continuous provision of support in order to enhance the use of them. This should be regularly reviewed. A user support service has to be available to all users but be sufficiently varied to allow for the wide range of abilities and experience individual users may have.

The intentions and aims of any support system need to take into account local conditions and context as well as the more generic information literacy education. In order to achieve the best possible results, service providers must have a detailed understanding of their own context and the nature, demands and abilities of their own users. EIS offer users a great opportunity to improve their learning outcomes and increase their knowledge base but in order for these services to maximize their potential, they need to be visible, user-friendly, with easy-access providing state-of-the-art facilities. The library has to promote their services and create the environment which maximises its potentiality.

8.3 IT skills

The IT skill of users is an essential component of access. Providing services, which are visible and available, does not necessarily equate to access, if the individuals do not have the skills necessary to make use of these services. IT users need the relevant IT skills and service providers need to be aware of the level of IT skills within their user groups. Library services need to take a central role in the provision of IT skills to the wider community across the university. Although this may encounter some resistance, it is vital that the library must be seen as a central provider of support. In this way it will not ensure that users are empowered to make the best use of services but it also has the potentiality to reach out, the wider university population, encouraging increased take-up of services.

IT skills sessions need to be planned and organized in detail, taking into consideration both the pedagogical design of the interventions and the diverse needs of user population, offering a range of support services to meet the requirements. In order to accomplish this goal, librarians themselves need the necessary skills which will enable them to provide sessions and support the unskilled users. The traditional role of librarians has not been that of being IT teachers; this would require a change in culture and attitude of both the librarians and the faculty as a whole.

The use of EIS is obviously directly linked with the teaching and learning process. Logically the data analysis identifies the relationship between the requirements as derived by the students' assignments and the use of EIS. Active learning is one of the basic components of education within the university context. The library has to be involved more directly and overtly in the new challenges in education and learning process.

8.4 Education demands

Libraries should carefully consider the content of their EIS and link them directly with the users' needs on all levels. This means that user's needs research must be reviewed carefully in order to define the library's mission. The library needs to develop communication and cooperation processes across university. The curriculum, its demands and the university goals, should be reflected, if not the major driver for, in any library policy. The library, therefore, should obviously know the content of the

university's intended goals. These goals will be the pivot on which the library policy is constructed. The more the library policy is linked with the university's intention, the more useful and usable its services will be. Of course the education structure and the subject requirements define the role of the library, however individual libraries should not be separated or operating in isolation. It has to be part of the university and intrinsically linked to the mission and central educational policy of the university. The educational structure and the students could be changed. The library today has the opportunity to play a central role in any development in educational practise and in the approach to students' learning. This research produced rich data and information on the field of EIS usage. The analysis of them led to identify important parameters which should be checked by library managers.

Defining written policies regarding the provision of EIS is part of the current library management axiom. These policies could clarify the process and the content of these services as well as the library's intention, regarding this provision and the clearly defined goals and aims of these services. At this stage, librarians have the opportunity to check the suitability of a service and therefore provide the most effective one.

Crucially, accessibility is important in providing a service at all, especially an electronic service. EIS demand a high proportion of any library budget and it is not enough to provide limited access points based in the current library spaces.

Accessibility at all the possible access points means that users can easily and quickly access a service across the university. The library staff have control over the provision of access to services within their own designated spaces but, in order to extent this access, the responsibility falls to the wider university, taken on as a central function and included in both the educational and philosophical policies of the university.

The library should ensure that users have a high quality of access in order to achieve a usable service and ensuring the cost effectiveness of EIS. Librarians are in a position to champion the increased provision of access ranging from library access points, open access spaces across the university, individual offices and ultimately home access.

Users should have the opportunity to access computers at any time they need to and want to. Restriction policies should be very carefully laid out. Any unwanted

restriction could be a barrier and make the EIS less user-friendly. The most important aspect of EIS is not the quantity but the usefulness, accessibility and quality.

This research finding concludes that the relationship between educational demands and the EIS provision is both complex and important. If the libraries want to participate actively in the university community, they have to transform students-users to independent users. Such users can face the future technological challenges and can be successful in a life-long learning environment. They can find the information they want and they will have the relevant technical skills and knowledge to achieve this. This will be the role of the library in the changing education environment.

In this research, library users are defined as they appear in the research sample. It is necessary to transform library users by creating the independent learners. The library gives this opportunity to all parts of the academic community; they have to exploit this possibility. First of all, librarians have to understand their possibilities of affecting the academic community process and then they have to persuade academics to use them. The second part of this process will be to make the EIS part of the everyday learning process of students in all stages of their studies.

8.5. Recommendation to each stakeholder

Libraries encounter an array of problems, one of which is financial, for example the cost of e-journal subscription may be more difficult to defend in the current economic crisis. The European Union is no longer supporting the libraries renovation in Greece; the responsibility now falls to the government alone. Because of the crisis this is impossible and the libraries have no money to support the subscriptions.

The application of a regular service assessment project could probably help the library administrators to pay more attention on achieving more funding for their libraries.

According to Okojie (2010), libraries should not rely on one source of funding but in practice they do not have any policy to cope with funding reduction during economic crisis periods such as that which is now faced by Greek libraries. The current situation in Greece reflects this picture with a lack of relevant, well-defined written policies and long term strategic goals.

Academics have to reconsider the role of the library within the Greek university context. Libraries have to be reformed substantially. They can offer more than

information, they can also provide academics with an effective environment in order to support and improve the teaching and learning quality in their context.

Communication between academics and librarians has to be developed in order to achieve an improved student experience and knowledge. The cooperation between them could affect positively both sides by developing common ways to measure the results of this cooperation in students' achievements.

Librarians face a big challenge in this technological and information explosion but they have to develop their library operation and services in an effective way.

Information specialists have to pay attention not only in the services provision but also in the user's needs in order to improve the operation level in the libraries.

Promotion has to be supported. Users have to be aware about the EIS. Particularly librarians have to affect positive the academic opinion about EIS. Academics attitude is quite important in terms of the EIS promotion. User education has also to be part of the libraries, supporting their operation in a substantial way.

Finally, researchers, in LIS and education, have to consider the findings of this research which show that communication between the different stakeholders can prompt a better provisional service in both fields than an isolate way of operation. A further investigation in this area could help of building the complete picture in the university reality and lead not only to better understanding about students and users needs but also to realize new possibilities in their cooperation.

8.6 Contribution to knowledge

Greek libraries have seen a great change over the past two decades in the provision of EIS to their users. This research makes clear that users need motivation to use the EIS otherwise they do not make any use of them. The link between the library operation and the teaching and learning process has never been investigated before.

There is no research in this area while this particular methodology has not been applied before in the Greek context. This study focussed in depth on two very particular contexts to develop an understanding of the phenomena. The participants' testimonies built up their own view and provide an opportunity for the research community to understand their world. In this way, qualitative research case-study, as an in-depth approach, makes clear what really happens in both sites under

examination. It is holistic as it includes participants from three different groups in the university community, students, academics and librarians. At the same time the data collection techniques and the consequent data triangulation ensure the in-depth and holistic character of this research. Afzal (2006) argues on the use of qualitative research approach, supporting their effectiveness in the Information Studies field. He recommends their use in order to gain more depth and sense in the libraries context.

8.7 Future work

This research produces rich data in the field of the EIS in a Greek academic library defining also the relation between educational demands and the role of the library. It presents some limitations, as every research study does. It is qualitative research study, designed to explore multiple realities which are time and context bound and therefore not intended to be generalised to the wider context. The research sample was small; it could be extended to more sites and participants in order to support the relevance of this investigation to the general situation in Greek university libraries. Furthermore, this research could not lead into generalisations or to support a new theory. During the research process the objectives were affected by the data collection and the real conditions in the research. More research in this area covering different contexts is needed in order to offer insight into the multiple realities that exist and develop a theory making clearer the applicability of the current results in any context. In the specific context of the Aristotle University, other departmental libraries could be investigated and the findings could enhance actual EIS provision and support in the context of this university and offer some insight and signposts for further investigation across the more general context of Greek Universities.

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Appendices

Appendix 1: Questions research instrument

Academics

Personal details about

Gender

Subject

Job description

1. Are you aware about the Electronic Information Services available on the library's web site and how?
2. When you use EIS due to which reasons do you use them?
3. Which EIS do you use?
4. Where do you use EIS?
5. What kind of problems do you face in relation to EIS usage? (access-IT skills-obtain useful information-unfriendly interface etc)
6. Have you got any support- instruction to use EIS? Their opinion about the support's effectiveness
7. What is your personal opinion about EIS? Which is the EIS usage affection on students and their learning outcomes? How do you encourage students to use EIS?
8. How do you use EIS?
 1. How do you start searching?
 - Who do you ask for help?
 - How do you feel about the results

Questions research instrument for Students

Personal details about

Gender

Subject

Year

- Are you aware about the Electronic Information Services available on the library's web site and how?
- When you use EIS due to which reasons do you use them?

- Which EIS do you use?
 - Where do you use EIS?
 - What kind of problems do you face in relation to EIS usage? (access-IT skills-obtain useful information-unfriendly interface etc)
 - Have you got any support- instruction to use EIS? Their opinion about the support's effectiveness
 - What is your personal opinion about EIS? Which is the EIS usage affection on students and their learning outcomes? How do academics and librarians encourage you to use EIS?
 - How do you use EIS?
2. How do you start searching?
 - Who do you ask for help?
 1. How do you feel about the results

Questions research instrument for Librarians

Personal details about

Gender

Job description

1. Who are the EIS users? How could they identify them?
2. How do they make users aware about EIS available on the web site?
3. Why do users use EIS? When you use EIS due to which reasons do you use them?
4. Which EIS do users use?
5. Where do users use EIS?
6. What kind of problems do users face in relation to EIS usage? (access-IT skills-obtain useful information-unfriendly interface etc)
7. How do librarians "qualify" users to use EIS? Their opinion about the support's effectiveness
8. What is your personal opinion about EIS? What is their users' opinion about EIS? Which is the EIS usage affection on students and their learning outcomes? How do you encourage users to use EIS?
9. How do users use EIS?
1. How do they start searching?

2. Who do they ask for help?
3. How do they feel about the results?

Appendix 2: Observation protocol

Observation research instrument

1. Who are the users? (In library or in local labs)
2. Which EIS do users use?
3. (Where do they use them?)
4. (Why do they use them?)
5. What kind of problems do users face in relation to EIS usage?
6. What kind of support do librarians provide to users in order to use them effectively?
7. (What is their personal opinion about EIS?)
8. How are they encouraged and from whom to use EIS?
9. How do users use EIS?
 1. What ways of searching do they use?
 2. Which are the question are coming up during searching?
 3. How do users feel during searching?

Appendix 3:Form librarians fill with users questions

Questions file

Form with questions relevant to EIS which users ask during the observation period in the enquiry desk

Real time:

Gender

Male

Female

Type of user

Academics

Students

Query timing

Pre log on

Post log on

Question 1

Question 2

Question 3

Appendix 4: Terms definitions

TERMS DETERMINATION: ELECTRONIC INFORMATION SERVICES

Information Service:

A service provided by, or for, a special library which draws attention to information possessed in the library or information department in anticipation of demand.²

Information resource:

.... some confusion over the concept of the Information Resources, mainly as a result of the inclusion of the technological resources in the concept. However most commentators regard the following as constituting information resources in organization: data, text, records, multimedia, and information technology.³

Source:

1. Any document which provides the users of libraries or of information services with the information sought.
2. Any document which provides information reproduced in another document.
3. The data or records providing the basis for information search.⁴

As the result the term Electronic Information Services, enclosed any resource and source, includes any service available in an electronic form in the library web page or in the local intranet available only in the library building.

² Harrod's Librarians' Glossary. Ed Eight. Compiled by Ray Prytherch. Gower, 1995.(p 322)

³ International Encyclopedia of Information and Library Science. Ed John Feather and Paul Sturges London:Routledge,1997
. (p190-191)

⁴ Harrod's Librarians' Glossary: 9,000 terms used in information management, library science, publishing, the book trades, and archive management . 8th ed. Compiled by Ray Prytherch. Aldershot: Gower, 1995. (p 599)

Appendix 5: List with EIS provided to user

LIST OF ELECTRONIC SERVICES

Services

- **In the intranet**
 - OPAC [□](#)
 - Cd-Roms [□](#)
 - Other [□](#)
- **In the web page**
(The followings are links on the web page)
 - General Information in the web
 - Project of modernization [□](#)
 - History [□](#)
 - Libraries and European Commission [□](#)
 - Aristoteles University and other university sites [□](#)
 - News [□](#)
 - Main Library and its regulations, operation, location Inter-library Loan etc. [□](#)
 - Departmental Libraries [□](#)
 - User education [□](#)
 - Location [□](#)
 - Web pages [□](#)
 - Operation [□](#)
 - Mapping [□](#)
 - Heal-Link [□](#)
 - Database Search Services [□](#)
 - Heal Link Quick Search Engine in the service [□](#)
 - Heal Link Subject Search [□](#)
 - Information [□](#)
 - Some tutorials [□](#)
 - Links [□](#)
 - Contact [□](#)
 - JSTOR [□](#)
 - REF-Work [□](#)
 - SwetsnetNavigator [□](#)
 - Ulrich'International Periodicals (Local) [□](#)
 - Wiley InterScience [□](#)
 - On-line university periodicals [□](#)
 - Dissertation Abstracts Databases [□](#)
 - Cooperative periodical Catalog (EKT) [□](#)
 - Cambridge Scientific Abstracts-Internet Database Service (CSA-IDS) [□](#)
 - Bibliographic Databases on CD-ROM's (ULTRA-NET) [□](#)
 - Information [□](#)
 - Tutorials [□](#)
 - FAQ [□](#)
 - Online access to Citation Index [□](#)
 - Internet [□](#)
 - Search engines [□](#)

- ILC Glossary of Internet Terms □
- User Guides □
- OPAC □
- Links other OPAC □
- Links other libraries □
- Links Internet □
- Other services □

Appendix 6: List with used information sources

Which of the following information resources do you use?

	Frequently	Sometimes	Rarely	Never
Own books	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Own journals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Printed library books	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Printed library journals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electronic books	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electronic journals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Printed dissertation file	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electronic dissertation file	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Library web pages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Journal article databases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Specialist databases (reports, designs etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internet search engines (Google, Altavista etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD-ROMS (Ultranet)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Resources from other libraries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Please state)				

Appendix 7:Participants characteristics in summary

First research site

1 Academics

Lastly the academic sample includes as many academics as was possible at that period of time in order to reach information redundancy. The researcher asked for an appointment only with academics that use the library and have contact with librarians. This decision was made because the first admittedly very willing academic the researcher tried to interview did not have any contact with the library and the interview was unsuccessful so after that experience it was considered useful to interview people who use the library. Librarians supplied the researcher with the list of academics. The final sample consists of two participants- one man and one woman- from each subject area. The same policy was applied in telephone-interviews as well.

ar-a-m-1^o

He is an academic in the first subject area in Architecture. The researcher decided to include this interview although the participant was not very positive and did not give much information. He can use EIS but he does not do so very often. He has other sources to support his work. His opinion about library and its role is not very good and that is the reason why he believes that the library does not fulfil its role.

ar-a-w-1o

She is an academic in the first subject area in Architecture. She has been working in this position for a long time. She is a member of the permanent staff and very close to retirement. She cannot adopt the new technological means in her work. She prefers to do her job as she did in the past. She feels afraid of this entire means. As a result she has no IT skills and does not know or work with EIS. She is library user but prefers the printed sources.

ar-a-w-1o

She is an academic in the first subject area in Architecture as well. The researcher decided to do this interview because although the first participant uses the library she is not familiar with the EIS so could not provide any information concerning her opinion on them. She has been working in this position for a long time. She has difficulty in using all the new technologies but she persists and manages to

approach some of them. She has IT skills but she does not feel very confident about them.

ar-a-m-2o

He is an academic in second subject area in Architecture. He has IT skill but he does not feel so confident. He has been permanent staff for a long time. He knows EIS and uses some of them.

ar-a-w-2^o

She is an academic in the second subject area in Architecture as well. She is responsible for a post-graduate course and has many responsibilities as a result of this position. She gives lectures but her main job at present is more relevant to organising the course. She has IT skills but she does not have much confidence in them. Her assistances do most of her work. She has been permanent staff for a long time. She is familiar with EIS and uses some of them.

ar-a-m-3^o

He is an academic in the third subject area in Architecture. He uses and knows the electronic services but he has not received training in them. He does not consider it essential for him to be informed on them. He works with them daily he is therefore instantly aware of any new service, which comes out. He is very skilled in IT and could not work without EIS. He uses them to complete his tasks on an everyday basis thus being a very active user. He considers that nobody could be good enough to inform him on them because he checkes them so frequently himself.

ar-a-w-3o

She is an academic in the third subject area in Architecture as well. She has some IT skills but she does not feel so confident about them. She has been permanent staff for a long time. She knows EIS and uses some of them.

2ar-a-m-3o

Additional interview. He is an academic in the third subject area in Architecture as well. He knows and uses the electronic services. He works with them and considers himself to be IT skilled. He participates in e-learning and promotes students' use of the EIS and of computers.

ar-a-m-4o

He is an academic in the forth subject area in Architecture. He uses and knows some of the electronic services. He considers himself to be IT skilled. He has been working in this department as permanent staff for a few years.

ar-a-w-4o

She is an academic in the forth subject area in Architecture as well. She has some IT skills but she does not feel much confident about them. He has been permanent staff for a few years. She knows some EIS and uses some of them.

ar-a-m-5o

He is an academic in the fifth subject area in Architecture. He knows and uses the electronic services but he has not been informed by anyone on them. He works with them but faces many problems in organising the information. He is very IT skilled. He has been permanent staff for a long time.

ar-a-w-5o

She is an academic in the fifth subject area in Architecture as well. She is the chairman of the faculty and she has a lot of duties concerning the operation of the department. She gives lectures but her main job at present is more relevant to operation of the department. She has IT skills but she does not feel very confident about them. She has been permanent staff for a long time. She knows EIS and uses some of them.

Telephone-interview:

ar-at-m-1o

He is an academic in the first subject area in Architecture. He teaches theoretical modules or labs. He has IT skills. He is permanent staff.

ar-at-w-1o

She is an academic in the first subject area in Architecture as well. She is a lab lecturer. She has IT skills and is close to retirement.

ar-at-m-2^o

He is an academic in the second subject area in Architecture. He is in charge of theoretical and practical modules. He is not an EIS user.

ar-at-w-2^o

She is an academic in the second subject area in Architecture as well. She is lab a lecturer.

ar-at-m-3^o

He is an academic in the third subject area in Architecture. He is responsible for theoretical and practical modules. He has been in the department for a long time and uses computers and some EIS.

ar-at-w-3o

She is an academic in the third subject area in Architecture as well. She teaches theoretical and practical modules. She is an EIS user and has IT skills.

ar-at-m-4o

He is an academic in the forth subject area in Architecture. He teaches theoretical modules and he is not very positive about this technological information. He is confused about EIS and the internet.

ar-at-w-4o

She is an academic in the forth subject area in Architecture as well. Her module includes labs and practice. She has been permanent staff for a long time and does not feel very comfortable with computers and EIS.

ar-at-m-5^o

He is an academic in the fifth subject area in Architecture. He is a lab lecturers and he is not an EIS user. He is permanent staff and his subject area is practical.

ar-at-w-5o

She is an academic in the fifth subject area in Architecture as well. She was not very helpful and did not want to talk whatsoever. She demands students to be aware of everything. She is permanent staff.

2 Students

The students' sample covers students with various backgrounds but it does not include students from the first and second year at the first stage of the fieldwork because the researcher could not meet any of them. This gap had to be filled during the next stage of the research so the sample includes 2 participants from each year-1 boy and 1 girl. As far as the postgraduate level is concerned one student was interviewed only (a boy) because the researcher did not meet a girl during the field period.

ar-ps-b

He is a postgraduate student in PhD course. He used to work in research programs and now he is working on his project. He is IT skilled and he can read foreign language bibliography.

ar-s-b-1o

He is a first year student. He could use a computer before he came to the university and he is proficient in the English language.

ar-s-g-1o

She is a first year student. She could not use a computer before she came to the university and she is proficient in the English language.

ar-s-b-2o

He is a second year student. He could use a computer before he came to the university and can read in the English language.

ar-s-g-2o

She is a second year student. She was not competent in computer use at first, but now she can use word and some basic PC operations. She can read English language literature.

ar-s-b-3o

He is a third year student. He could use a computer before he came to the university and he can read in the English language.

ar-s-g-3o

She is a third year student. She could not use a computer before she came to the university and she could not read in English language.

ar-s-b-4o

He is a forth year student. He could not use a computer before he came to the university and can read in the English language.

ar-s-g-4o

She is a forth year student. She could not use computer before she came in the university and can read English language.

ar-s-b-5o

He is a fifth year student. He cannot use a computer before he came to the university but he can read in the English language.

ar-s-g-5o

She is a fifth year student. She could not use a computer before she came to the university but she can read in the English language.

ar-s-g-5-1o

She is a fifth year student. She could not use a computer before she came to the university and she can read English.

ar-s-g-5-2o

She is a fifth year student. She could not use a computer before she came to the university and she can read English.

3. Librarians

Two of the librarians are permanent staff and one librarian is temporary while the rest are students in placement. One librarian from the permanent staff and the temporary one have a degree in LIS. All the staff have been interviewed.

ar-l-w-1ⁿ

She is permanent staff. She has 11 years experience in academic libraries. Her duties are various, mainly cataloguing. There is a kind of duties distribution but as a rule they all do miscellaneous in this library.

ar-l-w-2ⁿ

She is permanent staff in the library without a degree in information studies or librarianship. She has been working since from 1981. She has a degree in English Literature. She has always worked in this department. Mainly her job involves the bureaucratic procedures of the library. Her duties are various, depending on the arising needs

ar-l-w-3η

She is a student in placement. Her duties are various, but mainly her job includes providing information, lending books and working with users.

ar-l-w-4ⁿ

She is part time staff. Her duties are various, but mainly her job involves providing information, lending books and working with users.

ar-l-m-5ⁿ

He is full time staff but he is not on a permanent basis. He has been working for two years in this library and his duties are various.

Second research site

1 Academics

Academics in this faculty can use any of the three libraries that are available. The sample includes two participants-one man and one woman- from each subject area. There is a special consideration in this faculty the academics use Macintosh computers because they need a ‘polytonic’ system and Macintosh technology was more user friendly. Now they have problems getting into the library web pages.

ph-a-m-1

He is an academic in the first subject area in Philology. He can use EIS but he does not very much. He is permanent staff He is accustomed to using printed sources but he is eager to use EIS if they are easily available.

ph-a-m-1.2

He is an academic in the first subject area in Philology. The researcher decided to include this interview although the participant is blind and cannot use the EIS by himself. He is permanent staff. He can use EIS with his wife’s help.

ph-a-w-2

She is an academic in the first subject area in Philology. She has been working in this position for a long time. She is permanent staff. She uses the new technology.

ph-a-m-2

He is an academic in the second subject area in Philology. He has IT skills. He has been permanent staff for a long time. He knows EIS and uses some of them.

ph-a-w-2

She is an academic in the second subject area in Philology. She has IT skills but she does not feel so confident about them. She has been permanent staff for a long time. She knows EIS and uses some of them.

ph-a-m-3

He is an academic in the third subject area in Philology. He is permanent staff. He uses and knows the electronic services.

ph-a-w-3

She is an academic in the third subject area in Philology as well. She has some IT skills but she does not feel much confident in them. She has been permanent staff for a long time.

Telephone-interviews:

ph-at-m-1

He is an academic in the first subject area in Philology. He is permanent staff. He has some IT skills but he is not used to working in electronic form.

ph-at-w-1

She is an academic in the first subject area in Philology as well. She is permanent staff. She has some IT skills and she uses EIS.

ph-at-m-2

He is an academic in the second subject area in Philology. He is permanent staff and he does not use EIS so much.

ph-at-w-2

She is an academic in the second subject area in Philology as well. She is permanent staff. She has some IT skills and she uses some EIS.

ph-at-m-3

He is an academic in the third subject area in Philology. He has been in the department for a long time and uses computers and some EIS.

ph-at-w-3

She is an academic in the third subject area in Philology as well. She is permanent staff and does not use EIS.

2 Students

The students' sample includes two participants from every year-one boy and one girl. The postgraduates' level includes one boy and one girl.

ph-ps-m

He is a postgraduate student in a Master's course. He is IT skilled and he can read foreign language bibliography.

ph-ps-g

She is a postgraduate student in a Master's course. She is IT skilled and she can read foreign language bibliography.

ph-s-b-1o

He is a first year student. He can use a computer at a basic level and is proficient in the English language.

ph-s-g-1o

She is a first year student. She can not use computer and but she can read English language.

ph-s-b-2o

He is a second year student. He can use a computer before he came to the university and can read in the English language. He uses some EIS. He participates in user education programme.

ph-s-g-2o

She is a second year student. She can use word and perform some basic operations in computers. She can read English language literature.

ph-s-b-3o

He is a third year student. He could not use a computer before he came to the university and can read in the English language.

ph-s-g-3o

She is a third year student. She can use a computer, has basic skills and reads in the English language.

ph-s-b-4o

He is a forth year student. He could not use a computer before he came to the university and he can read in the English language.

ph-s-g-4o

She is a third year student. She can use a computer and read in the English language. She participated in user education seminars.

3 Librarians

Permanent staff, temporary staff and placement students support the operation of the library. The researcher interviewed all the permanent and temporary staff but not the placement students because they had to work in the evening. This part of the day was not very busy and could not give any further information about the operation of the library. Four of the librarians are permanent staff and one is temporary who was moved to the library from elsewhere. Two of the librarians are qualified.

This sample is enriched by interviews from the other three libraries in the faculty. So, 2 librarians from the new library have been interviewed. One librarian in the Classical library and one from the Modern Language library have been interviewed as well. All the additional interviewed participants are qualified.

ph-l-m-1ⁿ

He is permanent staff in the academic library. His duties are various, mainly cataloguing. There is a kind of duties distribution but as a rule they all do everything in this library depending on the needs.

ph-l-w-2η

She is permanent staff in the library without a degree in information studies or librarianship. She has been working in this library for a long time as part of the permanent staff. Mainly her work involves the bureaucratic procedures of the library but her duties are various depending on the needs.

ph-l-w-3ⁿ

She is permanent staff in the library without a degree in information studies or librarianship. She has been working in this library for a long time. Mainly her work involves dealing with the information desk but she is occupied with anything depending on the needs.

ph-l-w-4ⁿ

She is not permanent staff. She is a teacher who has been working in the library for a period of time. Her duties are various, mainly dealing with the information desk.

ph-l-m-5ⁿ

He is part of the permanent staff and a qualified librarian. His job is in the central library. His duties are various.

ph-l-w-6η

She is permanent staff and a qualified librarian. Her job is in the central library. Her duties are various.

ph-l-w-7ⁿ

She is permanent staff and a qualified librarian. She has been working in the academic library for a long time. Her duties are various, mainly cataloguing. There is a kind of duties distribution but as a rule everyone does anything in this library.

ph-l-w-8η

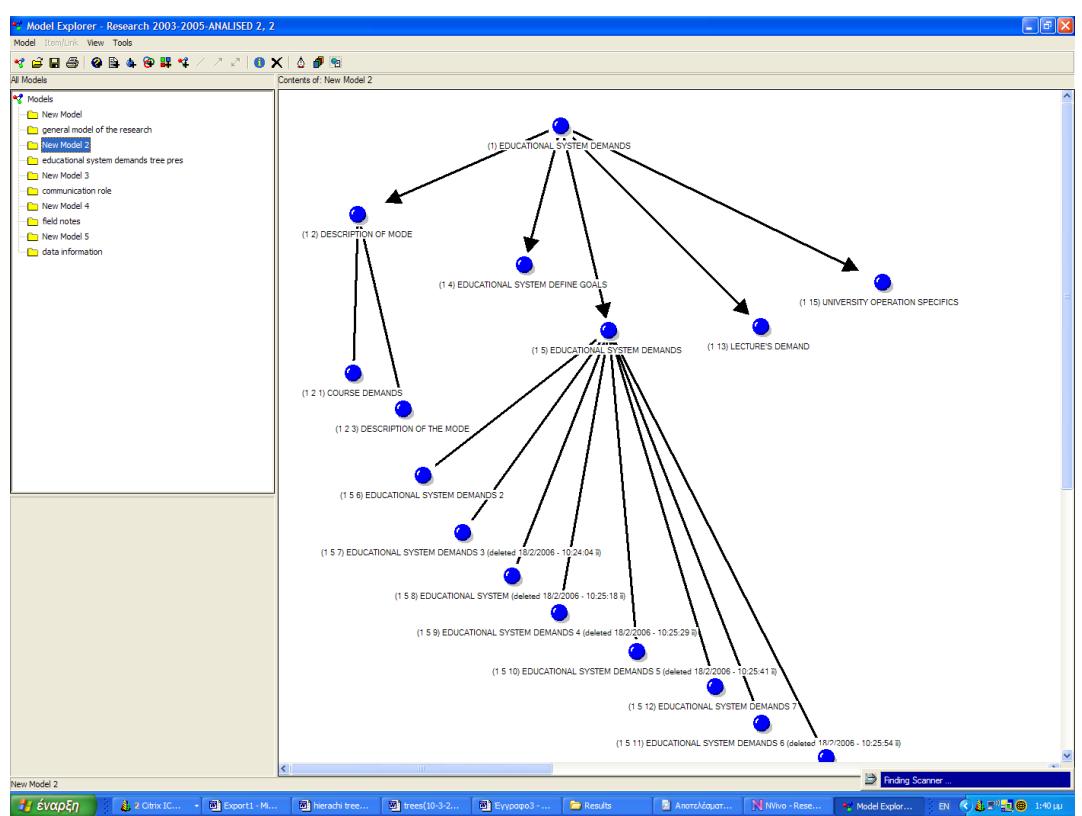
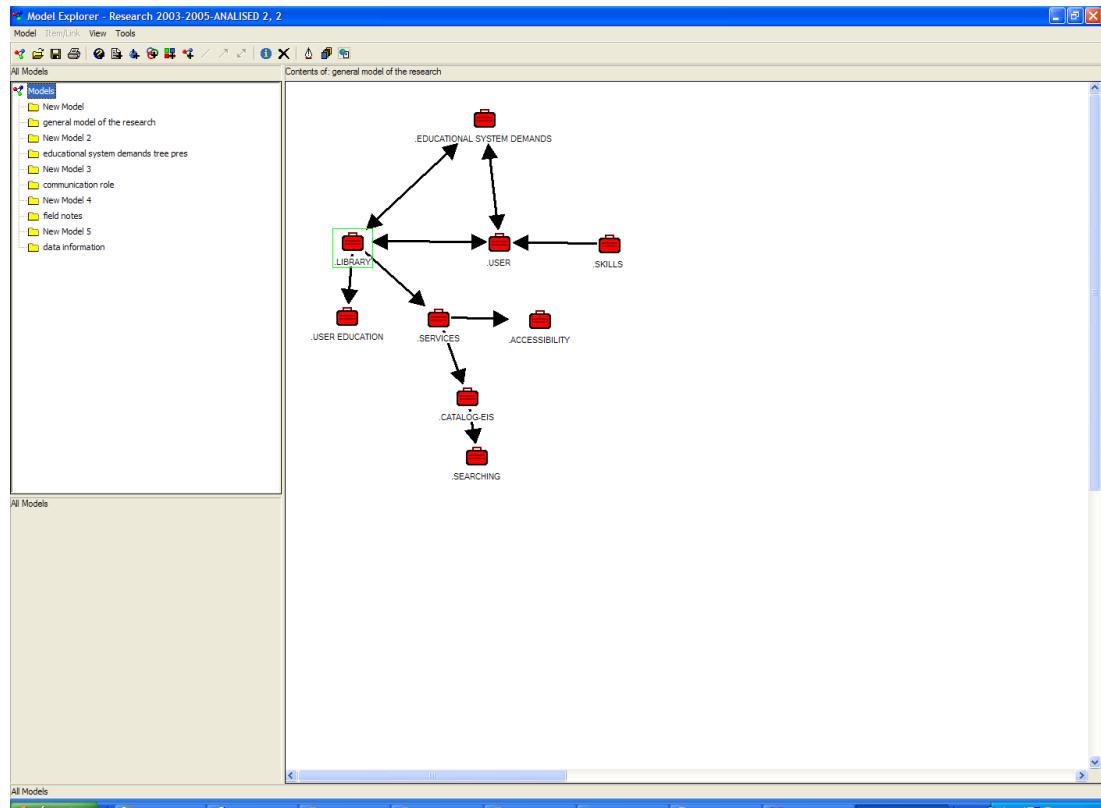
She is not permanent staff but she is a qualified librarian. She is working in the academic library on the basis of a contract. She occupied herself in two different libraries that of the Modern Language and that of the Classical studies. Her duties are various, including information giving or anything else that might arise.

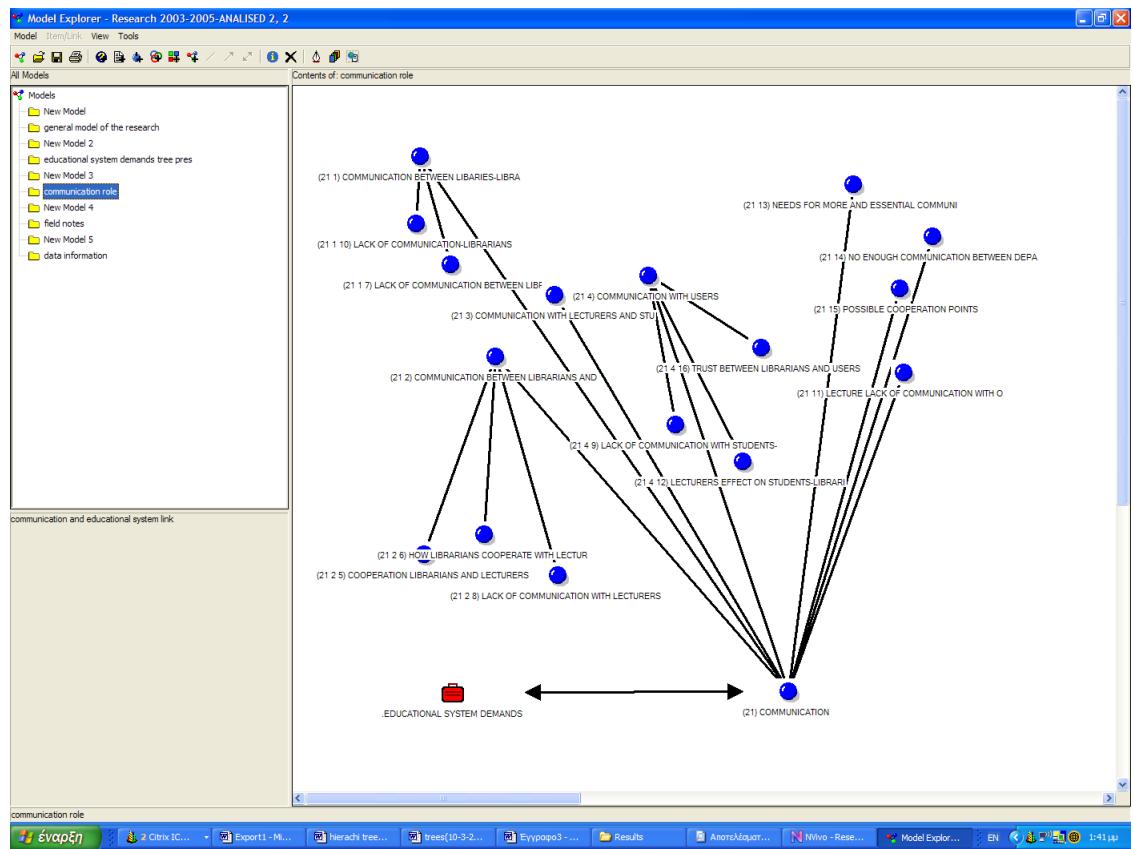
ph-l-w-9η

She is permanent staff and a qualified librarian. Her duties are various, such as cataloguing or promoting the library or anything else in a library.

Appendix 8: NVivo diagrams and subject tree

Nvivo diagrams





Hierarchi themes and subthemes tree example

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) USER EDUCATION (4 31) USER SUPPORT
::;GCE
::;GCR1|41|41
42= /USER EDUCATION/DO USER THINK LIBRARIANS SHOULD TEAC
43= /USER EDUCATION/EIS EDUCATION INCORPORATE IN COURSE
44= /USER EDUCATION/ESTIMATE USER EDUCATION
45= /USER EDUCATION/ESTIMATE USER EDUCATION/IMPORTANCE OF USER
EDUCATION
46= /USER EDUCATION/ESTIMATE USER EDUCATION/LECTURERS DO NOT
UNDERSTAND THE IMPO
47= /USER EDUCATION/ESTIMATE USER EDUCATION/PERSONAL CRITISM
ABOUT USER EDUCAT
48= /USER EDUCATION/ESTIMATE USER EDUCATION/UNDERESTIMATE THE
IMPORTANCE OF INFO
49= /USER EDUCATION/ESTIMATE USER EDUCATION/UNDERESTIMATE THE
IMPORTANCE OF USER
50= /USER EDUCATION/ESTIMATE USER EDUCATION/USER EDUCATION
ESTIMATE FROM LIBRARI
51= /USER EDUCATION/INDUCTION SESSION
52= /USER EDUCATION/INDUCTION SESSION/INDIVIDUALS SUPPORT
53= /USER EDUCATION/INDUCTION SESSION/INDUCTION SESSION
PARTICIPATION
54= /USER EDUCATION/INDUCTION SESSION/ORIENTATION QUESTIONS
55= /USER EDUCATION/INFORMATION ABOUT USER EDUCATION PRO
56= /USER EDUCATION/NEED FOR USER EDUCATION
57= /USER EDUCATION/NEED FOR USER EDUCATION/POST NEED USER
EDUCATION
58= /USER EDUCATION/PARTICIPATE IN USER EDUCATION SEMINA

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59= /USER EDUCATION/PARTICIPATE IN USER EDUCATION
SEMINA/PARTICIPATE IN SEMINARS AND IMPRESSI
60= /USER EDUCATION/PARTICIPATE IN USER EDUCATION SEMINA/SEMINARS
IN ARCHITECTURE
61= /USER EDUCATION/PARTICIPATE IN USER EDUCATION SEMINA/SEMINARS
RESULTS
62= /USER EDUCATION/PROMOTE USER EDUCATION
63= /USER EDUCATION/PROMOTE USER EDUCATION/LIBRARIANS PROPOSE USER
EDUCATION
64= /USER EDUCATION/PROMOTE USER EDUCATION/USER EDUCATION
PROMOTION
65= /USER EDUCATION/THE ROLE OF USER EDUCATION-LECTURER
66= /USER EDUCATION/THE ROLE OF USER EDUCATION-LIBRARIAN
67= /USER EDUCATION/USER EDUCATION
68= /USER EDUCATION/USER EDUCATION/USER EDUCATION- LIBRARIANS
RESPONSE
69= /USER EDUCATION/USER EDUCATION/USER EDUCATION SESSIONS CONTENT
70= /USER EDUCATION/USER SUPPORT
71= /USER EDUCATION/USER SUPPORT/LIBRARIAN SUPPORT USER
72= /USER EDUCATION/USER SUPPORT/USER SUPPORT-RESPONSE FROM
LIBRARIAN

Appendix 9:Papers

13th Panhellenic Academic Libraries Conference-Ionian university Corfu Greece October 13-15, 2004

"Μια έρευνα σχετικά με την αποτελεσματικότητα των ηλεκτρονικών υπηρεσιών πληροφορίας στην ελληνική τριτοβάθμια εκπαίδευση: Μελέτη περίπτωσης "

Σιδερά- Σιδέρη, Ιουλία υποψήφια Διδάκτωρ; Division of ICS; School of Informatics; Northumbria University.

Pickard, Alison Senior Lecturer; Division of ICS; School of Informatics; Northumbria University.

Banwell, Linda Research Director; Division of ICS; School of Informatics; Northumbria University.

Οι πανεπιστημιακές βιβλιοθήκες παγκοσμίως αντιμετωπίζουν πολλές αλλαγές από την άποψη της λειτουργίας τους, τις υπηρεσίες ακόμη και τους χρήστες τους. Οι πανεπιστημιακές βιβλιοθήκες στην Ελλάδα αντιμετωπίζουν τις ίδιες προκλήσεις. Οι βιβλιοθήκες αναπτύσσουν νέες υπηρεσίες, δημιουργούν ιστοσελίδες και προσφέρουν πλήθος υπηρεσιών. Οι υπηρεσίες αυξάνονται, ιδιαίτερα ηλεκτρονικά, αλλά καλύπτουν τις απαιτήσεις χρηστών; Οι ηλεκτρονικές υπηρεσίες πληροφοριών (EIS) προσφέρονται, αλλά, χρειάζονται στους χρήστες και πώς ο χρήστης τις χρησιμοποιούν; Αυτή η έρευνα έχει σχέση με ένα επίκαιρο θέμα, που νιοθετεί μια επικεντρωμένη στο χρήστη μέθοδο, στην τριτοβάθμια εκπαίδευση της Ελλάδας, η οποία δεν έχει ερευνηθεί κατ' αυτό τον τρόπο ποτέ πριν. Ο σκοπός αυτής της έρευνας είναι να ερευνηθεί η αποτελεσματική χρήση των ηλεκτρονικών υπηρεσιών πληροφορίας (EIS) στις ελληνικές βιβλιοθήκες τριτοβάθμιας εκπαίδευσης.

Σε αυτήν την έρευνα η χρήση του όρου 'αποτελεσματικότητα': συνδέεται με την αξία που οι άνθρωποι θεωρούν ότι οι EIS έχουν για τους ίδιους και είναι ένας όρος που θα καθοριστεί από τους συμμετέχοντες. Ο σκοπός της έρευνας θα επιτευχθεί μέσω των εξής επιμέρους στόχων:

1. Τη βιβλιογραφική ανασκόπηση της χρήσης και διάθεσης των EIS στην ελληνική τριτοβάθμια εκπαίδευση. Ένα μέρος της έχει ήδη πραγματοποιηθεί, το οποίο θα συνεχιστεί και θα ολοκληρωθεί με το τέλος της έρευνας. Επιπλέον έχει ολοκληρωθεί ένα μέρος της συλλογής δεδομένων καθώς και τα εμπειρικά στοιχεία που υποστηρίζουν αυτό τον στόχο.
2. Να ελεγχθεί η αποτελεσματικότητα της παράδοσης και της χρήσης των EIS. Μια εκτενής βιβλιογραφική ανασκόπηση στην αρχή της έρευνας έχει καλύψει ικανοποιητικά αυτόν τον στόχο. Η σημασία του όρου 'αποτελεσματικότητα' έχει ερευνηθεί και έχει καθοριστεί σύμφωνα με τις βιβλιογραφικές πληροφορίες. Αυτός ο στόχος έχει υποστηριχθεί και από τις δύο φάσεις συλλογής δεδομένων και επιπλέον θα εμπλουτιστεί με τις πληροφορίες τις τελικής φάσης συλλογής δεδομένων.
3. Να σχεδιαστεί περίγραμμα του πληθυσμού χρηστών σε σχέση με τη χρήση των EIS στις περιοχές μελέτης. Αυτός ο στόχος έχει υποστηριχθεί από τις φάσεις

συλλογής δεδομένων. Θα ερευνηθεί και θα ολοκληρωθεί στην τελευταία φάση συλλογής δεδομένων. Ο στόχος αυτός επικεντρώνεται στο δείγμα.

4. Να προσδιοριστούν οι ανάγκες του χρήστη σε σχέση με την ακαδημαϊκή τους μελέτη. Οι πληροφορίες προέρχονται από τέσσερις διαφορετικές πηγές τη βιβλιογραφική ανασκόπηση, τους βιβλιοθηκονόμους, τους φοιτητές, και τους ακαδημαϊκούς. Τα προκαταρκτικά αποτελέσματα από τις φάσεις συλλογής δεδομένων επαναπροσδιορίζουν και τροποποιούν αυτόν τον στόχο ως εξής:

"Να προσδιοριστεί η εκπαιδευτική διαδικασία στα ελληνικά πανεπιστήμια και οι απαιτήσεις που έχει σε σχέση με τη χρήση των EIS." Αυτή η τροποποίηση είναι αποτέλεσμα των εμπειρικών στοιχείων και θα έχει ως συνέπεια μια πρόσθετη φάση συλλογής δεδομένων: τηλεφωνικές συνεντεύξεις με τόσους ακαδημαϊκούς όσοι απαιτούνται ώστε να φωτιστεί η εκπαιδευτική διαδικασία.

5. Να αναπτυχθεί και να εφαρμοστεί ένα πρόγραμμα έρευνας ώστε να φωτιστεί η σχέση μεταξύ των βιβλιοθηκονόμων, των χρηστών και των EIS στις περιοχές μελέτης. Αυτός ο στόχος έχει υποστηριχθεί θεωρητικά με το σχεδιασμό της ερευνητικής διαδικασίας. Στην πράξη υποστηρίζεται από τη συλλογή των δεδομένων και την ανάλυση των στοιχείων.

6. Να παραχθεί ένα πλαίσιο για τη χρήση των EIS από τους φοιτητές και τους ακαδημαϊκούς στην ελληνική τριτοβάθμια εκπαίδευση. Ο στόχος αυτός θα ολοκληρωθεί μετά την συλλογή δεδομένων και τη λεπτομερή εμπειρική ανάλυση των στοιχείων.

Βιβλιογραφική ανασκόπηση

Οι πανεπιστημιακές βιβλιοθήκες αντιμετωπίζουν πολλές αλλαγές από την άποψη της λειτουργίας τους, τις υπηρεσίες και τους χρήστες ενώ οι υπηρεσίες και οι πηγές τους γίνονται σύνθετες λόγω της τεχνολογικής επανάστασης. Σήμερα, περισσότεροι φοιτητές μελετούν στα πανεπιστήμια σε σχέση με μερικές δεκαετίες πριν και παρουσιάζουν σίγουρα μια μεγάλη ποικιλία από την άποψη των δεξιοτήτων τους, την ηλικία τους κλπ. Ο Biddiscombe, (2002, p230) γράφει:

"Πολλά πανεπιστήμια έχουν αναδομήσει την οργάνωση των βιβλιοθηκών τους και προσπαθούν να ελέγξουν τις αλλαγές που πραγματοποιούνται." Οι βιβλιοθήκες πρέπει να αντιδράσουν όπως ο Lopez de Prado (2000, p202) λέει: "Η αλήθεια είναι ότι οι βιβλιοθηκονόμοι - εκτός από τις αναπόφευκτες εξαιρέσεις - με ενθουσιασμό έχουν χαιρετίσει τις πρόσφατες τεχνολογικές καινοτομίες."

Μέσα από τις τεχνολογικές εξελίξεις οι βιβλιοθήκες αναπτύσσουν και εμπλουτίζουν τις διάφορες υπηρεσίες τους (Tenopir, 2003) αλλά ταυτόχρονα αυτές οι υπηρεσίες γίνονται πιο σύνθετες. (Simmonds και Syed Saad, 2001) Ο ρόλος των βιβλιοθηκονόμων γίνεται πιο ουσιαστικός και έχει επιπτώσεις στο χρήστη. Ο Ashcroft (2000, p468) θεωρεί ότι οι βιβλιοθηκονόμοι πρέπει να εμπλακούν: "στη διαπραγμάτευση σύνθετων συμφωνιών χορήγησης αδειών, να αντιμετωπίσουν ζητήματα των πνευματικών δικαιωμάτων, οργάνωσης των μεθόδων πρόσβασης στις πληροφορίες μέσω των δικτυωμένων πόρων και επικοινωνίας με το ακαδημαϊκό προσωπικό για την αγορά του υλικού."

Η τεχνολογία βελτιώνει τις ηλεκτρονικές υπηρεσίες από την άποψη της δυνατότητας πρόσβασης και της διαθεσιμότητάς τους αν και οι άνθρωποι δεν είναι πάντα πρόθυμοι να υιοθετήσουν τις τεχνολογικές αλλαγές. Η Banwell (2001, p94) καταλήγει στο συμπέρασμα ότι οι online πληροφορίες και η σύγχρονη τεχνολογία ασκούν επίδραση στην κοινότητα των χρηστών: "Σαφώς έχουν

υπάρξει σημαντικές αλλαγές στη συμπεριφορά κατά την συλλογή των πληροφοριών ως αποτέλεσμα της εμφάνισης της ηλεκτρονικής εποχής..." Η συμπεριφορά των χρηστών κατά την αναζήτηση και απόκτηση πληροφοριών έχει αποτελέσει αντικείμενο έρευνας από πολλούς ερευνητές. (Kuhlthau, 1991 Ellis και Merete, 1997, και Wilson, 1994, 1999, 2000)

Οι EIS απαιτούν καταρτισμένους χρήστες προκειμένου να χρησιμοποιηθούν οι διαθέσιμες πληροφορίες. Υπάρχει έλλειψη των δεξιοτήτων τόσο στη χρήση της τεχνολογίας όσο και της ανάκτησης πληροφοριών ώστε οι χρήστες να αξιοποιήσουν πραγματικά τις EIS (Gannon-Leary και λοιποί, 2001 Pantouli και Nikserlidou, 2002). Οι βιβλιοθηκονόμοι παρέχουν οδηγίες και υποστηρίζουν τους χρήστες αλλά θα πρέπει επίσης να γίνεται αξιολόγηση της αποτελεσματικότητας αυτής της υπηρεσίας, (Bracke και Dickstein, 2002) και μελέτες γύρω από τον τρόπο με τον οποίο μαθαίνουν οι χρήστες (Smith, 2002). Η ικανοποίηση των χρηστών θεωρείται ουσιαστική προκειμένου να επιτευχθούν μια καλή υπηρεσία καθώς και η αποτελεσματική της χρήση. (Cullen, 2001 και – ARL-LibQUAL+TM, 1999) Η έρευνα που έχει ως επίκεντρο το χρήστη και της ανάγκες του κρίνεται απαραίτητη. (Jackson, 2001, Poll, 2003 eVALUEd, 2003 και Hartland και Thebridge, 2003) Αντήν την περίοδο οι στατιστικές των προμηθευτών για τη χρήση των EIS φαίνεται να είναι ανεπαρκείς. (Ashcroft, 2002 ροζηθ- Hristovski, et Al, 2002 Cheng, et Al, 2002 Liu και Cox, 2002, Frakou -Mpatsiou κλ, 2001)

Οι τεχνολογικές εξελίξεις αλλάζουν τη λειτουργία και τις υπηρεσίες βιβλιοθηκών στον κόσμο. Η Ελλάδα δεν αποτελεί εξαίρεση. Φραγκου-Μπάτσιου κα. (2001) συζητούν την αύξηση των EIS στην ελληνική τριτοβάθμια εκπαίδευση. Σύμφωνα με τις επίσημες στατιστικές από "Μονάδα ολικής ποιότητας"(MOD, στατιστικές ως 2003) αυτή η αύξηση είναι εντυπωσιακή στην τελευταία δεκαετία. Σχεδόν όλες οι πανεπιστημιακές βιβλιοθήκες έχουν ηλεκτρονικό κατάλογο (OPAC) και ιστοσελίδα στο Διαδίκτυο ώστε να παρέχουν την πρόσβαση στις διάφορες ηλεκτρονικές υπηρεσίες και πηγές όπως π.χ. οι συχνές ερωτήσεις (FAQ), οι οδηγοί χρηστών, οι βάσεις δεδομένων, τα ηλεκτρονικά περιοδικά, οι κανονισμοί βιβλιοθηκών και άλλες πληροφορίες για τη λειτουργία τους.(Χατζημάρη και Ζουπάνος, 2001) Οι Παπάζογλου και Σεμερτζάκη (2001, p160) υποστήριζαν: "Η ανάγκη για μια σύγχρονη, και καλά εξοπλισμένη πανεπιστημιακή βιβλιοθήκη που προσφέρει τις ποιοτικές υπηρεσίες, τις πλούσιες και ενημερωμένες συλλογές γίνεται απαραίτητη."

Το εκπαιδευτικό πρότυπο στην Ελλάδα είναι ακόμα παραδοσιακό και ο ρόλος των βιβλιοθηκών επίσης. Πράγματι, η εκμάθηση και η διαδικασία διδασκαλίας πραγματοποιούνται σε σεμινάρια και διαλέξεις και οι εξετάσεις είναι το βασικό εργαλείο αξιολόγησης. Οι Παπάζογλου και Σεμερτζάκη (2001, p160) περιγράφουν: "Το σύστημα (διαδικασία εκμάθησης και διδασκαλίας) δεν απαίτησε οποιαδήποτε ανάγνωση έξω από το εγχειρίδιο και η διδασκαλία των δεξιοτήτων ανάκτησης πληροφοριών δεν ήταν μέρος του προγράμματος σπουδών ή της φιλοσοφίας διδασκαλίας." Αυτές οι συνθήκες αρχίζουν να αλλάζουν όπως υποστηρίζει η Δουθεξούπολου (2001) με τη μετακίνηση από μια παθητική εκπαιδευτική διαδικασία σε μια ενεργητική με περισσότερες απαιτήσεις από τους φοιτητές στα ελληνικά πανεπιστήμια.

Οι υπηρεσίες υπάρχουν και η εκπαιδευτική διαδικασία κινείται προς μια πιο ενεργή μορφή, με τη βιβλιοθήκη να υποστηρίζει την εκμάθηση και διδασκαλία όμως τα ηλεκτρονικά συστήματα είναι σύνθετα και ο χρήστης πρέπει να γνωρίζει την πολυπλοκότητά τους και να έχει τη συγκεκριμένη ικανότητα για να ανακτήσει τις σωστές πληροφορίες. Οι Παντούλη και Νιξαρλίδου δείχνουν ότι: "οι φοιτητές στερούνται των δεξιοτήτων να χρησιμοποιήσουν τους υπολογιστές και αυτό έχει επιρροή στη συχνότητα που επισκέπτονται τη βιβλιοθήκη." (2002). Μέχρι πρόσφατα οι βιβλιοθηκονόμοι στο ελληνικό πανεπιστήμιο αν και αναγνώριζαν την σημασία της εκπαίδευσης χρηστών στην πράξη δεν την πρόσφεραν. (Ξενίδου, κλ. 2001) Οδηγοί χρηστών δημιουργήθηκαν για να υποστηρίζουν το χρήστη. Αυτό όμως δεν είναι αρκετό. Σήμερα η προσπάθεια των πανεπιστημιακών βιβλιοθηκών να καλυφθεί αυτή η περιοχή έχει ως αποτέλεσμα την οργανώση σεμιναρίων εκπαίδευσης χρηστών σε συνεχή βάση [Σελίδα της βιβλιοθήκης Αριστοτελείου: <http://www.lib.auth.gr/> (4/5/2004)]

Όλα τα παραπάνω αποτελούν γεγονότα αλλά στην πραγματικότητα οι EIS χρησιμοποιούνται αποτελεσματικά και αυτή η χρήση ανταποκρίνεται στις ανάγκες των χρηστών; Οι χρήστες πρέπει να είναι το κέντρο της λειτουργίας βιβλιοθηκών. Η άποψη του χρήστη καθορίζει την ποιότητα των υπηρεσιών και τον πραγματικό αντίκτυπο στις γνώσεις τους. Στη βιβλιογραφική ανασκόπηση φαίνεται ότι δεν υπάρχει έρευνα σ' αυτόν τον τομέα και αυτή η παρούσα έρευνα προσπαθεί να καλύψει αυτό το κενό.

Σχέδιο έρευνας

Η βασική φιλοσοφική ερώτηση σε αυτήν την έρευνα είναι: "ποια είναι η σχέση μεταξύ των εκπαιδευτικών συστημάτων (ιδιαίτερα στο ελληνικό πλαίσιο) και των υπηρεσιών ηλεκτρονικών πληροφοριών (EIS);" Η θεωρητική προσέγγιση είναι ερμηνευτική και: "μια μελέτη ερμηνευτικής κατανόησης, με ιδιαίτερη προσοχή στο πλαίσιο και αρχικό σκοπός της έρευνας."(Patton, το 1990 p84) Η ερευνητική προσέγγιση είναι επίσης ποιοτική, δεδομένου ότι "... είναι μια διαδικασία που σύρει τα στοιχεία από το πλαίσιο στο οποίο τα γεγονότα εμφανίζονται, σε μία προσπάθεια να περιγραφούν αυτά τα περιστατικά και οι συνθήκες μέσα στις οποίες τα γεγονότα ενσωματώνονται και με τον τρόπο που οι συμμετέχοντες ζουν το γεγονός." (Gorman και Clayton, 1997 p23) Οι Glazier (1992) και Westbrook (1994) υποστηρίζουν τη χρήση των ποιοτικών μεθόδων στην έρευνα και στις επιστήμες της επικοινωνίας και της πληροφορίας. Η ποιοτική μεθοδολογία θεωρείται ο καλύτερος τρόπος να γίνει μια σε βάθος, επικεντρωμένη στο χρήστη έρευνα. Αποσκοπεί στο να προσδιορίσει τους κόσμους των ατόμων και να ερευνήσει σε βάθος το εξεταζόμενο πλαίσιο προκειμένου να επιτευχθεί σε βάθος η κατανόηση του. Ο ποιοτικός ερευνητής πρέπει να καταλάβει 'τις σύνθετες αλληλεξαρτήσεις μεταξύ όλων αυτών συμβαίνουν και να μπορεί να φωτίσει την έρευνα με τη χρησιμοποίηση της λεπτομερής περιγραφής', 'της εμπειρικής κατανόησης', και 'των πολλαπλών πραγματικοτήτων'. Η επιστημολογία της ποιοτικής έρευνας είναι υπαρκτή και δομιστική και όπως ο Stake υποστηρίζει (p43): "τα φαινόμενα συσχετίζονται περίπλοκα μέσω πολλών ταυτόχρονων ενεργειών και το να τα καταλάβει κάποιος απαιτεί να εξεταστεί ένα ευρύ πλαίσιο: χρονικό και χωρικό, ιστορικό, πολιτικό, οικονομικό, πολιτιστικό, κοινωνικό και προσωπικό." Η ολιστική μέθοδος μελέτης περίπτωσης χρησιμοποιείται προκειμένου να υποστηριχθεί αυτή η έρευνα.

Δείγμα

Η ποιοτική έρευνα ερευνά την πραγματικότητα των ατόμων που συμμετέχουν και προσπαθεί να επιτύχει μια ποικιλία των συμμετεχόντων. Ως πεδίο έρευνας καθορίστηκαν οι βιβλιοθήκες: α) της Αρχιτεκτονικής και β) των Μεσαιωνικών και Νέων Ελληνικών Σπουδών της Φιλολογικής σχολής. Στόχος αυτής της έρευνας είναι να ερευνηθεί η αποτελεσματικότητα των EIS και στις δύο περιοχές έρευνας σε βάθος. Μια προσεκτική επιλογή και ένα ταξινομημένο δείγμα απαιτούνται προκειμένου να εξασφαλιστεί ότι όλες οι πιθανές απόψεις συμπεριλαμβάνονται. Οι Patton (1990) και Ruyter και Scholl (1998) και ο Perry (2001) υποστηρίζουν ότι η αντιροσωπευτικότητα σε συμφωνία με το θέμα της έρευνας και όχι το μέγεθος του δείγματος είναι αυτό που έχει σημασία.

Σκόπιμο δείγμα έχει επιλεχτεί επίσης ώστε να παραχθεί η πολύτιμη ευρύτητα. Οι βιβλιοθήκες και τα εργαστήρια αποτελούν τα σημεία έρευνας και ως χρόνος ορίστηκε το διάστημα μεταξύ Σεπτέμβρη μέχρι τις εξετάσεις του πρώτου εξαμήνου-τέλος Φεβρουαρίου. Κατά τη διάρκεια αυτής της περιόδου οι φοιτητές έχουν τις εργασίες τους και χρησιμοποιούν τη βιβλιοθήκη. Το δείγμα των συμμετεχόντων περιλαμβάνει:

φοιτητές, ένας άνδρας και μια γυναίκα από κάθε έτος ακαδημαϊκοί, ένας άνδρας και μια γυναίκα από την κάθε θεματική περιοχή έχουν χρησιμοποιηθεί από τον πληθυσμό που χρησιμοποιούν τη βιβλιοθήκη και έχουν διεύθυνση ηλεκτρονικού ταχυδρομείου και βιβλιοθηκονόμοι, όσο το δυνατόν περισσότερες συνεντεύξεις ώστε να επιτευχθεί ικανοποιητικός πλεονασμός πληροφοριών.

Τεχνικές συλλογής δεδομένων

Η συνέντευξη και η διακριτική παρατήρηση είναι οι τεχνικές συλλογής δεδομένων που χρησιμοποιήθηκαν προκειμένου να ερευνηθεί η σχέση μεταξύ των μερών του δείγματος και να παρέχουν τις περιγραφές των συμμετεχόντων. Η διαδικασία συλλογής περιλαμβάνει τρεις φάσεις με βάση τα μέχρι τώρα δεδομένα. Κατά συνέπεια, λεπτομερώς τα εργαλεία που χρησιμοποιούνται είναι τα ακόλουθα:

σε βάθος συνεντεύξεις με όλα τα μέρη του δείγματος όπου "... Μέσω μιας διαλογικής συνομιλίας το ερευνητικό ζήτημα ή η σειρά των ζητημάτων διερευνάται σε τέτοιο βάθος ανάλογα με τις ανάγκες..." (Gorman και Clayton, 1997, p23),

σημειώσεις παρατήρησης κατά την χρήση, στη βιβλιοθήκη ή όπου οι χρήστες έχουν πρόσβαση στις EIS. Το κενό (μεταξύ "του δείγματος των σπουδαστών και του δείγματος ακαδημαϊκού) σε σχέση με τη διαδικασία της παρατήρησης θα καλυφθεί με τη χρήση της μεθόδου του κρίσμου γεγονότος σημειώσεις παρατήρησης, του χώρου της βιβλιοθήκης ή όπου οι χρήστες έχουν πρόσβαση στις EIS.

το αρχείο ερωτήσεων που περιλαμβάνει σχετικές ερωτήσεις για τις EIS που κρατείται από τους βιβλιοθηκονόμους και τον ερευνητή και αποτελεί ένα ακόμη έγγραφο της διαδικασίας συλλογής δεδομένων
η τελική φάση συλλογής θα περιλαμβάνει τηλεφωνικές συνεντεύξεις με τους ακαδημαϊκούς.

Η διασταύρωση (triangulation) των μεθόδων συλλογής των δεδομένων έχει ως συνέπεια τον έλεγχο των συμπερασμάτων με τη χρησιμοποίηση των διαφορετικών

μεθόδων συλλογής των στοιχείων. Η διασταύρωση (triangulation) των πηγών επαληθεύει την ίδια πληροφορία μέσω διαφορετικών ανθρώπων. (Yin, 2003 και Williamson, 2000) Αυτή η μέθοδος έχει χρησιμοποιηθεί για να υποστηρίξει την συλλογή δεδομένων από ποικίλες πηγές και τη χρησιμοποίηση ποικίλων μεθόδων. Η διασταύρωση (triangulation) στην παρούσα έρευνα θα επιτευχθεί με την εφαρμογή διαφορετικών προσεγγίσεων για να εξεταστεί το πρόβλημα: σε βάθος συνεντεύξεις, διακριτική παρατήρηση και βιβλιογραφική ανασκόπηση ώστε οι ίδιες πληροφορίες να επιβεβαιωθούν από διαφορετικές πηγές.

Επιστημονική ποιότητα της έρευνας

Οποιαδήποτε έρευνα πρέπει να καθιερώνει την επιστημονική της ποιότητά. Οι Lincoln και Guba (1985) και ο Riege (2003) υποστηρίζουν ότι η ποιοτική έρευνα πρέπει να είναι αξιόπιστη, μεταβιβάσιμη, και να επιβεβαιώνεται. Σε αυτήν την έρευνα η αξιοπιστία επιτυγχάνεται με τη χρησιμοποίηση της διασταύρωσης (triangulation) των πηγών και μεθόδων, την επίμονη παρατήρηση (τέσσερις εβδομάδες σε κάθε περιοχή) στην κάθε βιβλιοθήκη μέχρι πλεονασμό πληροφοριών, ενημερώνοντας ομότιμους ερευνητές σε σταθερή βάση κατά τη διάρκεια του ερευνητικού σχεδιασμού και της πραγματοποίησης, και ελέγχοντας τα δεδομένα με τους συμμετέχοντες. (Lincoln και Guba, 1985) Οι παρουσιάσεις της ερευνητικής διαδικασίας, οι συμβουλές του επόπτη έρευνας και οι παρουσιάσεις σε επιστημονικά συνέδρια χρησιμοποιούνται για να ολοκληρώσουν το έλεγχο. Ο Riege συνδέει τη δυνατότητα μεταβίβασης της ερευνητικής μεθοδολογίας και των αποτελεσμάτων της έρευνας με την ανάπτυξη μιας βάσης δεδομένων κατά τη διάρκεια της φάσης συλλογής δεδομένων. Αυτή η βάση δεδομένων θα περιλάβει την λεπτομερή περιγραφή και θα χρησιμοποιήσει τις συγκεκριμένες διαδικασίες για την κωδικοποίηση και την ανάλυση όπως επίσης σύμβολα και σημάδια. Η σταθερή συγκριτική μέθοδος (Constant comparative method) είναι το εργαλείο για την ανάλυση των δεδομένων. Πρόκειται για μια συνεχόμενη διαδικασία που θα ολοκληρωθεί στο τελικό στάδιο της έρευνας. Η επιβεβαίωση συνδέεται με τον έλεγχο κατά τη διάρκεια της φάσης συλλογής δεδομένων και της ανάλυσης των στοιχείων. Οι συμμετέχοντες θα επιβεβαιώσουν το πλαίσιο συνεντεύξεων. Επιπλέον, ο Eisenhardt (1989) οι Ruyter και Scholl (1998) και ο Yin (2003) υποστηρίζουν τη σημασία της σταθερής οργάνωσης της διαδικασίας της έρευνας. Η έρευνα υιοθετεί μια σταθερή οργάνωση της ερευνητικής διαδικασίας και διατηρεί λεπτομερή αρχεία σε όλα τα στάδια της.

Μοναδικότητα

Οι EIS προσφέρονται αλλά οι χρήστες τις ‘χρειάζονται’ και που τους χρησιμεύουν; Λίγα έχουν γίνει μέσα στο πλαίσιο των ελληνικών βιβλιοθηκών σε αυτήν την ιδιαίτερη περιοχή. Η έρευνα αυτή διακρίνεται γιατί χρησιμοποιεί μια κριτική και αναλυτική προσέγγιση σε μια περιοχή που υπάρχουν πολύ λίγες έρευνες. Υιοθετεί μια ποιοτική μέθοδο που εφαρμόζει την ολιστική μέθοδο μελέτης περίπτωσης. Αυτή η μελέτη ερευνά τη χρήση των EIS στο ελληνικό πανεπιστημιακό πλαίσιο των βιβλιοθηκών. Πολλές έρευνες είναι διαθέσιμες στη βιβλιογραφία για τη χρήση των EIS, αλλά λίγα έχουν γίνει μέσα στο πλαίσιο των ελληνικών βιβλιοθηκών. Η συγκεκριμένη έρευνα θα συμβάλλει στην ανάπτυξη των EIS με έναν ουσιαστικό τρόπο μέσα στις πανεπιστημιακές βιβλιοθήκες τόσο του Αριστοτελείου πανεπιστημίου όσο και στον ευρύτερο τομέα της ελληνικής τριτοβάθμιας εκπαίδευσης. Συνέπεια των αποτελεσμάτων θα είναι η καλύτερη κατανόηση των αναγκών των χρηστών και η βελτίωση των υπηρεσιών. Τέλος, θα

προωθήσει μια σε βάθος κατανόηση των ζητημάτων με τη διάδοση των συμπερασμάτων σε τοπικό, εθνικό και διεθνές επίπεδο μέσα και πέρα από στην επιστήμη της Επικοινωνίας και των Πληροφοριών (LIS).

Πειραματική μελέτη

Πρώτα σχεδιάστηκε το πρωτόκολλο έρευνας. Σύμφωνα με τον Yin (2003) αυτό επιτρέπει στον ερευνητή να προσδιορίσει από πριν τις διαδικασίες και τις απαιτήσεις που ακολουθούνται στην περίοδο συλλογής των δεδομένων ενώ ταυτόχρονα ο ερευνητής παραμένει ανοικτός στις βελτιώσεις και τις τεχνικές που αναδύονται από δεδομένα και τις υπάρχοντες συνθήκες. Αυτό το πρωτόκολλο περιλαμβάνει τρία εργαλεία έρευνας με ερωτήσεις προς τους συμμετέχοντες και ένα εργαλείο έρευνας για την παρατήρηση που απεικονίζουν τον ερευνητικό σκοπό και τους επιμέρους στόχους της έρευνας. Έχει δημιουργηθεί μια φόρμα για να κρατήσει τις ερωτήσεις σχετικά με τις EIS κατά τη διάρκεια της περιόδου έρευνας. Ο ερευνητής εκμεταλλεύτηκε τις δυνατότητες που προσφέρει η επαγγελματική προσέγγιση του προβλήματος σε συνδυασμό με την ταυτόχρονη εισαγωγή της προηγούμενης θεωρίας που προϋπήρχε καθώς και την εισαγωγή των δεδομένων. Αυτό επιτεύχθηκε με την βιβλιογραφική ανασκόπηση και την πειραματική μελέτη, με τις οποίες εξετάστηκαν οι ερωτήσεις που χρησιμοποιήθηκαν κατά τη διάρκεια των συνεντεύξεων και της παρατήρησης. (Perry, 2001)

Όλη η ερευνητική διαδικασία ακολούθησε και ενημέρωσε το πρωτόκολλο ενώ ο ερευνητής παρέμενε δεκτικός, προσαρμοστικός και δημιουργικός σε ρυθμίσεις εκ νέου σε κάθε συνέντευξη. Η πειραματική μελέτη χρησιμοποιήθηκε για να επιβεβαιώσει την αποτελεσματικότητα του ερευνητικού σχεδίου και των εργαλείων. Ο Yin (2003) συστήνει τη χρήση της πειραματικής μελέτης και υποστηρίζει ότι εφοδιάζει τον ερευνητή με την ανατροφοδότηση στις ερωτήσεις και τις διαδικασίες. Η πειραματική μελέτη πραγματοποιήθηκε σε μια από τις βιβλιοθήκες της Φιλοσοφικής σχολής, το τμήμα Παιδαγωγικής. Περιέλαβε παρατήρηση του χώρου και τρεις συνεντεύξεις, μια με έναν σπουδαστή, μια με έναν βιβλιοθηκονόμο και έναν ακαδημαϊκό. Η βιβλιοθήκη έχει δύο προσωπικούς υπολογιστές (PC) με την πρόσβαση στον ηλεκτρονικό κατάλογο. Οι συνεντεύξεις απομαγνητοφωνήθηκαν και αναλύθηκαν. Οι ερωτήσεις αναθεωρήθηκαν και βελτιώθηκαν.

Πρώτα και δεύτερη φάση συλλογής δεδομένων

Η πολυτεχνική σχολή περιλαμβάνει πέντε σχολές και μια από αυτές είναι η Αρχιτεκτονική. Έχει πέντε (5) τομείς και μια (1) βιβλιοθήκη και εξυπηρετεί 1655 προπτυχιακούς φοιτητές, 112 μεταπτυχιακούς και 96 ακαδημαϊκούς. Η παρατήρηση έλαβε χώρα δύο (2) ώρες ανά ημέρα για τέσσερις (4) εβδομάδες. Ο ερευνητής πήρε συνέντευξη από πέντε (5) βιβλιοθηκονόμους, δώδεκα (12) φοιτητές και δέκα (10) ακαδημαϊκούς

Η σχολή της Φιλοσοφικής περιλαμβάνει οχτώ (8) τμήματα. Το τμήμα Φιλολογίας έχει 4 βιβλιοθήκες και καλύπτει τρεις (3) θεματικούς τομείς. Η Μεσαιωνική και Νέων Ελληνικών σπουδών βιβλιοθήκη είναι μια από αυτές και εξυπηρετεί 1854 προπτυχιακούς φοιτητές, 35 (125) λαμβάνοντες μεταπτυχιακή εκπαίδευση και 28 (76) ακαδημαϊκούς. Οι χρήστες θα μπορούσαν να χρησιμοποιήσουν οποιαδήποτε από τις βιβλιοθήκες. Η παρατήρηση περιέλαβε δύο (2) ώρες ανά ημέρα

παρατήρηση για τέσσερις (4) εβδομάδες. Ο ερευνητής πήρε συνέντευξη από πέντε (5) βιβλιοθηκονόμους και έξι (6) ακαδημαϊκούς και δέκα (10) φοιτητές. Επιπλέον έναν (1) βιβλιοθηκονόμο από τις άλλες βιβλιοθήκες και δύο (2) βιβλιοθηκονόμους από την θεματική βιβλιοθήκη προκειμένου να ολοκληρωθεί η εικόνα των χρηστών επειδή υπήρχε η δυνατότητα να τις χρησιμοποιούν.

Οι τηλεφωνικές συνεντεύξεις πρόκειται να είναι το τελευταίο μέρος της συλλογής δεδομένων με τους ακαδημαϊκούς και από τις δύο σχολές. Αυτή η φάση συλλογής δεδομένων θα προσπαθήσει να φωτίσει την εκπαιδευτική διαδικασία στην Ελλάδα και τη διαδικασία της διδασκαλίας και της εκμάθησης.

Προκαταρκτικά αποτελέσματα

Μέχρι σήμερα έχουν πραγματοποιήθηκαν δύο φάσεις συλλογής δεδομένων. Η μεν πρώτη, το Φθινόπωρο του 2003, με πίεση χρόνου λόγω της απεργίας των ακαδημαϊκών για δύο μήνες. Η απεργία είχε επίδραση στο κανονικό ακαδημαϊκό έτος όπως επίσης σε φοιτητές και ακαδημαϊκούς. Άσκησε επίδραση στη λειτουργία των βιβλιοθηκών και τον τρόπο που υποστηρίχθηκαν οι χρήστες. Η δε δεύτερη φάση πραγματοποιήθηκε την Άνοιξη του 2004. Τα προκαταρκτικά αποτελέσματα μέχρι τώρα μπορούν να συνοψιστούν στα εξής:

Οι EIS είναι διαθέσιμες στους φοιτητές της Αρχιτεκτονικής κυρίως στη βιβλιοθήκη και στα εργαστήρια αλλά τις χρησιμοποιούν σχεδόν αποκλειστικά στην βιβλιοθήκη. Μπορούν να τις χρησιμοποιήσουν επιπρόσθετα από το σπίτι τους αλλά δεν έχουν όλοι υπολογιστές ή τις γνώσεις να το κάνουν.

Οι EIS της Φιλολογικής σχολής είναι διαθέσιμες στους φοιτητές κυρίως στη βιβλιοθήκη. Μπορούν να τις χρησιμοποιήσουν επιπρόσθετα από το σπίτι τους αλλά δεν έχουν όλοι υπολογιστές ή και τις γνώσεις να το κάνουν.

Οι ακαδημαϊκοί έχουν πρόσβαση από τα γραφεία τους και το σπίτι τους. Οι μεν της Αρχιτεκτονικής έχουν όλοι ηλεκτρονικούς υπολογιστές ενώ στους καθηγητές της Φιλολογίας υπήρχαν κάποιοι που δεν διέθεταν στο γραφείο τους.

Οι φοιτητές τις χρησιμοποιούν για εργασίες.

Οι ακαδημαϊκοί χρησιμοποιούν τις EIS για να υποστηρίξουν ακαδημαϊκές εργασίες καθώς και τα μαθήματα τους.

Οι φοιτητές δεν είναι ιδιαίτερα εξοικειωμένοι με τις EIS με εξαίρεση τον κατάλογο στην Αρχιτεκτονική ενώ στη Φιλολογία προτιμούν να χρησιμοποιήσουν τον κατάλογο καρτών αντί του υπολογιστή.

Και οι φοιτητές και οι ακαδημαϊκοί φαίνονται να στερούνται τις δεξιότητες χρήσης τεχνολογίας και τις δεξιότητες αναζήτησης πληροφοριών.

Οι χρήστες φαίνονται να προτιμούν τη χρήση του Διαδικτύου αντί της ιστοσελίδας της βιβλιοθήκης για να βρουν τις πληροφορίες που χρειάζονται και να πετύχουν το στόχο τους.

Οι χρήστες στη βιβλιοθήκη της Αρχιτεκτονικής χρησιμοποιούν τις EIS περισσότερο από τους χρήστες στην βιβλιοθήκη της Φιλολογίας.

Τι έπεται;

Τα επόμενα βήματα περιλαμβάνουν:

Πραγματοποίηση τηλεφωνικών συνεντεύξεων

Απομαγνητοφόνηση νέων συνεντεύξεων

Ανάλυση νέων στοιχείων και ενσωμάτωση τους με τα ήδη υπάρχοντα δεδομένα

Συνέχιση της βιβλιογραφικής ανασκόπησης όσο αφορά την θεματική περιοχή καθώς και τις σύγχρονες μεθόδους έρευνας

Κατάρτιση μοντέλων συμπεριφοράς χρηστών κατά την ανάκτηση των πληροφοριών στις ελληνικές πανεπιστημιακές βιβλιοθήκες.

Δημιουργία ενός μοντέλου για τη χρήση των EIS από τους φοιτητές και τους ακαδημαϊκούς στην ελληνική τριτοβάθμια εκπαίδευση.

Σύνταξη και παρουσίαση των συμπερασμάτων.

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Ευχαριστώ το Ίδρυμα Κρατικών Υποτροφιών για την οικονομική υποστήριξη της έρευνας μου.

15th Panhellenic Academic Libraries Conference-Patra university Patra Greece October 1-3 November 2006

"Οι ηλεκτρονικές υπηρεσίες πληροφορίας στην ελληνική τριτοβάθμια εκπαίδευση."

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Οι τεχνολογικές εξελίξεις και οι δυνατότητες που προσφέρουν όπως είναι γνωστό έχουν επιφέρει σημαντικές αλλαγές στην λειτουργία και την δράση των βιβλιοθηκών. Ιδιαίτερα οι πανεπιστημιακές βιβλιοθήκες που εξυπηρετούν και υποστηρίζουν την ερευνητική και γενικά την πανεπιστημιακή κοινότητα. Ως αποτέλεσμα των διεθνών μα και τοπικών ελίξεων οι βιβλιοθήκες αναπτύσσουν νέες υπηρεσίες, δημιουργούν ιστοσελίδες και προσφέρουν πλήθος υπηρεσιών. Ο προβληματισμός της έρευνας αυτής ορίζεται στο κατά πόσο οι μέχρι τώρα προσφερόμενες ηλεκτρονικές υπηρεσίες επιτελούν τον στόχος.

Στόχος λοιπόν της έρευνας είναι: "να προσδιοριστεί η εκπαιδευτική διαδικασία στα ελληνικά πανεπιστήμια και οι απαιτήσεις που έχει σε σχέση με τη χρήση των EIS." Με βάση τα αποτελέσματα της θα επιδιωχθεί να παραχθεί ένα πλαίσιο για τη χρήση των EIS από τους φοιτητές και τους ακαδημαϊκούς στην ελληνική τριτοβάθμια εκπαίδευση. Ο στόχος αυτός θα αποτελέσει την τελική της φάση.

Φύση της έρευνας και δείγμα

Η έρευνα είναι ποιοτική και η θεωρητική προσέγγιση ερμηνευτική. Η ποιοτική μεθοδολογία θεωρείται ο καλύτερος τρόπος να γίνει μια σε βάθος, επικεντρωμένη στο χρήστη έρευνα. Αποσκοπεί στο να προσδιορίσει τους κόσμους των ατόμων και να ερευνήσει σε βάθος το εξεταζόμενο πλαίσιο προκειμένου να επιτευχθεί σε βάθος η κατανόηση του. Ο ποιοτικός ερευνητής πρέπει να καταλάβει 'τις σύνθετες αλληλεξαρτήσεις μεταξύ όλων όσων συμβαίνουν και να μπορεί να φωτίσει την έρευνα με τη χρησιμοποίηση της λεπτομερής περιγραφής', 'της εμπειρικής κατανόησης', και 'των πολλαπλών πραγματικοτήτων'. Η επιστημολογία της ποιοτικής έρευνας είναι υπαρκτή και δομιστική και όπως ο Stake υποστηρίζει (p43): "τα φαινόμενα συσχετίζονται περίπλοκα μέσω πολλών ταυτόχρονων ενεργειών και το να τα καταλάβει κάποιος απαιτεί να εξεταστεί ένα ευρύ πλαίσιο: χρονικό και χωρικό, ιστορικό, πολιτικό, οικονομικό, πολιτιστικό, κοινωνικό και προσωπικό." Η ολιστική μέθοδος μελέτης περίπτωσης χρησιμοποιείται προκειμένου να υποστηριχθεί αυτή η έρευνα.

Η διαδικασία συλλογής δεδομένων έχει ολοκληρωθεί και η ανάλυση στοιχείων έχει ολοκληρωθεί. Η έρευνα σχεδιάστηκε σε επτά στάδια: βιβλιογραφική επισκόπηση και σχεδιασμός έρευνας, συλλογή δεδομένων, πρώτος κύκλος της ανάλυσης, δεύτερη φάση συλλογής δεδομένων, δεύτερος κύκλος της ανάλυσης, τρίτη φάση συλλογής δεδομένων και τελική ανάλυση.

Η συνέντευξη και η διακριτική παρατήρηση είναι οι τεχνικές συλλογής δεδομένων που χρησιμοποιήθηκαν προκειμένου να ερευνηθεί η σχέση μεταξύ των μερών του δείγματος και να παρέχουν τις περιγραφές των συμμετεχόντων. Κατά συνέπεια, λεπτομερώς τα εργαλεία που χρησιμοποιούνται είναι τα ακόλουθα: σε βάθος συνεντεύξεις, σημειώσεις παρατήρησης κατά την χρήση EIS, σημειώσεις παρατήρησης, ένα αρχείο ερωτήσεων και τηλεφωνικές συνεντεύξεις.

Ως πεδίο έρευνας καθορίστηκαν οι βιβλιοθήκες: α) της Αρχιτεκτονικής και β) των Μεσαιωνικών και Νέων Ελληνικών Σπουδών της Φιλολογικής σχολής. Σκόπιμο δείγμα έχει επιλεχτεί επίσης ώστε να παραχθεί η πολύτιμη ευρύτητα. Το δείγμα των συμμετεχόντων περιλαμβάνονται: φοιτητές, βιβλιοθηκονόμοι και μόνιμους ακαδημαϊκούς.

Περιγραφή των δύο περιπτώσεων έρευνας

Η καθιέρωση του πανεπιστημίου Θεσσαλονίκης, όπως το δεύτερο ελληνικό πανεπιστήμιο, νομοθετήθηκε βάσει του νόμου 3341/1925. Στις 11 Ιουλίου 1927 δημοσιεύθηκε το Προεδρικό Διάταγμα "Περί συστάσεως της βιβλιοθήκης του Πανεπιστήμιου Θεσσαλονίκης". Η βιβλιοθήκη άρχισε τη λειτουργία της στα τέλη το 1927, στο ισόγειο του παλαιού κτιρίου της Φιλοσοφικής σχολής. Ταυτόχρονα πολλές άλλες υπηρεσιακές βιβλιοθήκες αναπτύσσουν δραστηριότητες στο πανεπιστήμιο Aristoteles. Σχεδόν κάθε τμήμα έχει τη βιβλιοθήκη του ενώ μερικές φορές υπάρχουν περισσότερες της μια σε κάθε ένα. Αυτές οι βιβλιοθήκες άρχισαν ως μικρά εργαστήρια με τα έγγραφα και συγγράμματα που θα μπορούσαν να υποστηρίζουν τα σεμινάρια. Σταδιακά οι απαιτήσεις των σχολών μεγάλωσαν και τα μετέτρεψαν σε βιβλιοθήκες. Όλες αυτές οι βιβλιοθήκες συνδέονται άμεσα με την κεντρική βιβλιοθήκη που πλέον στεγάζεται σε κτίριο στο κέντρο σχεδόν του πανεπιστημίου και λειτουργούν σχεδόν σύμφωνα με τους ίδιους κανόνες, έχουν την ίδια πολιτική.

Συγκεκριμένα, σήμερα το πανεπιστήμιο Aristoteles Θεσσαλονίκης έχει 10 σχολές σε λειτουργία, οι οποίες περιλαμβάνουν 44 τμήματα.⁵ Σε αυτό το πανεπιστήμιο υπάρχει η κεντρική βιβλιοθήκη και 38 υπηρεσιακές βιβλιοθήκες.

Συλλογή δεδομένων

Η πολυτεχνική σχολή περιλαμβάνει πέντε σχολές και μια από αυτές είναι η Αρχιτεκτονική. Έχει πέντε (5) τομείς και μια (1) βιβλιοθήκη και εξυπηρετεί 1655 προπτυχιακούς φοιτητές, 112 μεταπτυχιακούς και 96 ακαδημαϊκούς. Η παρατήρηση έλαβε χώρα δύο (2) ώρες ανά ημέρα για τέσσερις (4) εβδομάδες. Ο ερευνητής πήρε συνέντευξη από πέντε (5) βιβλιοθηκούμους, δώδεκα (11) φοιτητές και δέκα (20) ακαδημαϊκούς.

Η σχολή της Φιλοσοφικής περιλαμβάνει οχτώ (8) τμήματα. Το τμήμα Φιλολογίας έχει 4 βιβλιοθήκες και καλύπτει τρεις (3) θεματικούς τομείς. Η Μεσαιωνική και Νέων Ελληνικών σπουδών βιβλιοθήκη είναι μια από αυτές και εξυπηρετεί 1854 προπτυχιακούς φοιτητές, 35 (125) λαμβάνοντες μεταπτυχιακή εκπαίδευση και 28 (76) ακαδημαϊκούς. Οι χρήστες θα μπορούσαν να χρησιμοποιήσουν οποιαδήποτε από τις βιβλιοθήκες. Η παρατήρηση περιέλαβε δύο (2) ώρες ανά ημέρα παρατήρηση για τέσσερις (4) εβδομάδες. Ο ερευνητής πήρε συνέντευξη από πέντε (5) βιβλιοθηκούμους και έξι (12) ακαδημαϊκούς και δέκα (10) φοιτητές. Επιπλέον έναν (1) βιβλιοθηκόμο από τις άλλες βιβλιοθήκες και δύο (2) βιβλιοθηκούμους από την νέα 'θεματική βιβλιοθήκη' που φιλοξενεί τα περιοδικά της φιλοσοφικής προκειμένου να ολοκληρωθεί η εικόνα των χρηστών επειδή υπήρχε η δυνατότητα να τις χρησιμοποιούν. Ο ερευνητής παρατήρησε το χώρο αυτό δύο ώρες για 3 ημέρες.

1.1.1 Περίπτωση μια: 'Αρχιτεκτονική'

Η βιβλιοθήκη παρέχει στους χρήστες επτά (7) PC και δύο (2) από αυτούς έχουν πρόσβαση στην ιστοσελίδα της βιβλιοθήκης γενικά τους υπόλοιπους υπάρχει περιορισμός στην πρόσβαση και συνδέει το χρήστη απευθείας με τον κατάλογο. Υπάρχει εργαστήριο τμήματος με εικοσιτέσσερα (24) PC αλλά δώδεκα (12) έχουν πρόσβαση στο Διαδίκτυο ενώ το δωμάτιο δεσμεύεται για σεμινάρια πολλές ώρες καθημερινά. Αυτό το εργαστήριο παρατηρήθηκε 1 ώρα καθημερινά για μια

⁵ <HTTP:// www. auth. GR>

εβδομάδα και κανένας δεν χρησιμοποίησε ιστοσελίδας της βιβλιοθήκης. Η άτυπη συνομιλία με το υπεύθυνο προσωπικό σε αυτήν την περιοχή επιβεβαίωσε ότι οι χρήστες βιβλιοθηκών δεν χρησιμοποιούν αυτό το χώρο για να μπουν στην βιβλιοθήκη.

Ακαδημαϊκός

Το ακαδημαϊκό δείγμα καλύπτει τόσους ακαδημαϊκούς όσοι ήταν δυνατό σε εκείνη την χρονική περίοδο ώστε να επιτευχθεί ο πλεονασμός πληροφοριών. Ο ερευνητής ζήτησε από τους βιβλιοθηκονόμους να του πουν ποιοι από τους ακαδημαϊκούς χρησιμοποιούν τη βιβλιοθήκη και έχουν κάποια επαφή με τους βιβλιοθηκονόμους. Η παρούσα απόφαση λήφθηκε επειδή ο πρώτος πολύ πρόθυμος ακαδημαϊκός τον οποίο ο ερευνητής προσπάθησε να πάρει συνέντευξη δεν είχε οποιαδήποτε επαφή με τη βιβλιοθήκη και η συνέντευξη ήταν ανεπιτυχής. “Ετσι μετά από εκείνη την εμπειρία θεωρήθηκε χρήσιμο να πάρει συνέντευξη από ανθρώπους που χρησιμοποιούν τη βιβλιοθήκη. Οι βιβλιοθηκάριοι εφοδίασαν τον ερευνητή με τον κατάλογο ακαδημαϊκών. Το τελικό δείγμα αποτελείται από δύο συμμετέχοντες - ένας άνδρας και μια γυναίκα - από την κάθε θεματική περιοχή. Η ίδια πολιτική ίσχυσε στην τηλε-συνέντευξη επίσης.

Βιβλιοθηκάριοι

Όλο το προσωπικό της βιβλιοθήκης αυτής δέχτηκε και έδωσε συνέντευξη. Δύο από τους βιβλιοθηκονόμους είναι μόνιμο προσωπικό και ένας βιβλιοθηκονόμος με σύμβαση, μια σπουδάστρια σε πρακτική άσκηση και μια σπουδάστρια στο πτυχίο με σύμβαση περιορισμένων ωρών.

Σπουδαστές

Το δείγμα των φοιτητών καλύπτει τους σπουδαστές δύο συμμετέχοντες από κάθε έτος-ένα αγόρι και ένα κορίτσι. Όσον αφορά το μεταπτυχιακό επίπεδο μια συνέντευξη (αγόρι) επειδή ο ερευνητής δεν συνάντησε άτομο που να ανταποκρίνεται στα κριτήρια κατά τον χρόνο της έρευνας.

1.1.2 Περίπτωση δύο

Υπάρχουν δύο (2) διαθέσιμα PC στη βιβλιοθήκη χωρίς εγκαταστάσεις πρόσβασης στο Διαδικτύο. Δεν είναι εύκολοι σε χρήση επειδή είναι παλαιοί και οι χρήστες μπορούν μόνο να χρησιμοποιήσουν τον σε απευθείας σύνδεση κατάλογο. Στην ίδια περιοχή υπάρχει ένας κατάλογος καρτών και οι χρήστες μπορούν να έχουν πρόσβαση στις πληροφορίες μέσω του. Το τμήμα έχει ένα εργαστήριο ειδικά για τους μεταπτυχιακούς όπου υπάρχουν οκτώ (8) διαθέσιμα PC με την πρόσβαση στο διαδίκτυο. Οι χρήστες μπορούν να τους χρησιμοποιήσουν αφού κλείνουν ραντεβού. Η αίθουσα ήταν ελεύθερης πρόσβασης καθημερινά αλλά επειδή αντιμετωπίζουν τεχνικά προβλήματα την περιόρισαν. Υπάρχει ένα άλλο εργαστήριο για τους προπτυχιακούς φοιτητές με είκοσι πέντε (25) PC αλλά αυτή η αίθουσα χρησιμοποιείται για εκπαιδευτικούς λόγους.

Η κεντρική βιβλιοθήκη αποφάσισε την ανάπτυξη μιας νέας υπηρεσίας βιβλιοθηκών σε ένα χωριστό χώρο όπως ήδη αναφέρω με στόχο να φιλοξενηθούν τα περιοδικά όλων των τμημάτων της σχολής. Έχει δέκα (10) PC. Όλα έχουν πρόσβαση στο διαδίκτυο. Αυτές οι υπηρεσίες είναι διαθέσιμες σε όλους τους σπουδαστές και τους ακαδημαϊκούς του τμημάτων της φιλοσοφικής σχολής. Η βιβλιοθήκη κάτω από τις Κλασσικές σπουδές έχει έξι (6) PC και έναν κατάλογο καρτών διαθέσιμο στον ίδιο χώρο ενώ στην τελευταία βιβλιοθήκη - Γλωσσικές σπουδές υπάρχουν δύο (2) PC και ένας κατάλογος καρτών πάλι στον ίδιο χώρο. Ο ερευνητής αντιμετώπισε πραγματικά το πρόβλημα της με χρήσης των υπολογιστών ή την σπάνια σε όλες τις βιβλιοθήκες εκτός από τη νέα όπου οι σπουδαστές προέρχονται από διάφορα τμήματα της Φιλοσοφικής σχολής. Οι

χρήστες σε αυτήν περίπτωση μπορούν να χρησιμοποιήσουν οποιαδήποτε από τις τέσσερις βιβλιοθήκες που είναι διαθέσιμες.

Ακαδημαϊκοί

Το δείγμα περιλαμβάνει δύο συμμετέχων-έναν άνδρα και μια γυναίκα - από την κάθε θεματική περιοχή. Το ίδιο ισχύει και για το δείγμα των τηλεφωνικών συνεντεύξεων.

Βιβλιοθηκάριοι

Ο ερευνητής πήρε συνέντευξη από όλο το μόνιμο και συμβάσεων προσωπικό που εργάζονται το πρωί επειδή αυτοί που εργάζονται το βράδυ είναι κυρίως φοιτητές σε πρακτική. Το μέρος αυτό της ημέρας δεν έχει ιδιαίτερα χρήστες και δεν θα μπορούσαν να δώσουν περισσότερες πληροφορίες για τη λειτουργία της βιβλιοθήκης. Τέσσερις από τους βιβλιοθηκονόμους είναι μόνιμο προσωπικό και κάποιοι είναι προσωρινό προσωπικό που κινείται προς τη βιβλιοθήκη από μια άλλη θέση. Δύο από τους βιβλιοθηκονόμους είναι πτυχιούχοι σχολής Βιβλιοθηκονομίας.

Αυτό το δείγμα εμπλουτίζεται από τις συνεντεύξεις από τις άλλες τρεις βιβλιοθήκες όπου συμμετέχουν στο δείγμα πτυχιούχοι Βιβλιοθηκονομίας.

Σπουδαστές

Το δείγμα φοιτητών συμπεριλαμβάνει δύο συμμετέχοντες για κάθε έτος-ένα αγόρι και ένα κορίτσι. Το επίπεδο των μεταπτυχιακών συμμετέχουν ένα αγόρι και ένα κορίτσι.

ΑΝΑΛΥΣΗ

Αυτή η έρευνα παρουσιάζει τις δύο περιπτώσεις χωριστά επειδή δεν υπάρχει καμία πρόθεση σύγκρισης. Επεξηγεί το περιεχόμενο ερευνητικών τομέων μέσω των τριών κατηγοριών δειγμάτων. Αυτή η έρευνα είναι επικεντρωμένη στο χρήστη και η ανάλυση στοιχείων στρέφεται στο χρήστη και τις ανάγκες τους. Η διαδικασία ανάλυσης είναι βασισμένη στα στοιχεία των συμμετεχόντων. Οι τέσσερις θεματικές ενότητες που έχουν προκύψει από τα δεδομένα είναι: το εκπαιδευτικό σύστημα, η διαθεσιμότητα των υπηρεσιών και οι δεξιότητες των χρηστών.

Εκπαιδευτικό σύστημα

Αρχιτεκτονική

Ακαδημαϊκοί

Κατά μαρτυρία των ακαδημαϊκών οι φοιτητές στη σχολή της Αρχιτεκτονικής κατά τα πρώτα έτη φοίτησης τους δεν έχουν εργασίες. Σε μεγαλύτερα έτη κάνουν κάποιες εργασίες 5-10 σελίδων και πάντα εξαρτάται από το μάθημα. Υπάρχει διαφορά στις απαιτήσεις που έχουν από τους φοιτητές όσον αφορά τα θεωρητικά και τα πρακτικά μαθήματα όπου οι εργασίες έχουν πρακτικό χαρακτήρα δηλαδή είναι σχέδιο κτλ. Οι εργασίες σε θεωρητικά μαθήματα δεν είναι αρκετές για να κατοχυρώσουν το μάθημα. Θα πρέπει τα παιδιά να δώσουν εξετάσεις στο τέλος του εξαμήνου. Σημαντικό ρόλο κατέχει στις σπουδές τους η διπλωματική εργασία που υποχρεώνονται να κάνουν στο τέλος των σπουδών τους.

Τα μαθήματα είναι θεωρητικά και εργαστηριακά . Υπάρχουν πολλά μαθήματα και οι φοιτητές δεν μπορούν να προχωρήσουν σε μεγάλο βάθος ειδικά στα θεωρητικά. Οι φοιτητές παρακολουθούν διαλέξεις, σεμινάρια και έχουν εργαστήρια. Δεν παρέχουν λίστες βιβλιογραφίας στους φοιτητές όταν τους ζητούν να κάνουν εργασίες. Οι φοιτητές υποχρεώνονται να ψάξουν από μόνοι τους πού μπορούν να

βρουν πληροφορίες. Ένας συμμετέχοντας μόνον είπε ότι έδωσε βιβλιογραφία στους φοιτητές για να ολοκληρώσουν ένα μάθημα.

Φοιτητές

Επιβεβαιώνουν ότι δεν υπάρχουν εργασίες στα πρώτα χρόνια ενώ και αυτές που κάνουν εθελοντικά στα επόμενα έτη δεν είναι μεγάλης έκτασης. Οι εργασίες των εργαστηριακών μαθημάτων είναι πρακτικές και δεν απαιτούν την χρήση EIS της βιβλιοθήκης. Υπάρχει σαφείς διαχωρισμός στις απαιτήσεις των θεωρητικών και πρακτικών μαθημάτων. Τέλος επιβεβαιώνουν και τον ρόλο της διπλωματικής εργασίας που έχουν στο τέλος των σπουδών τους.

Μαρτυρούν ότι τα δύο πρώτα χρόνια παρακολουθούν κυρίως διαλέξεις. Η συμμετοχή στη διδασκαλία είναι λίγη. Στην ειδίκευση μετά στο τρίτο έτος τα πράγματα διαφοροποιούνται έχουν μεγαλύτερες απαιτήσεις από αυτούς και απαιτούν περισσότερη συμμετοχή. Φοιτητής με λίστα που έδωσε συνέντευξη στον ερευνητή υποστηρίζει ότι σχεδόν πάντα όταν έχει κάποια εργασία δεν έχει βιβλιογραφία παρά μόνο ένα θέμα με το οποίο ψάχνει στον κατάλογο να βρει πληροφορίες. Οι συμμετέχοντες επιβεβαιώνουν ότι δεν έχουν βιβλιογραφία και πρέπει να ψάξουν μόνοι τους.

Βιβλιοθηκονόμοι

Οι βιβλιοθηκονόμοι λένε πως από αυτά που τους ζητούν οι φοιτητές φαίνονται να κάνουν κάποιες εργασίες όχι μεγάλης έκτασης. Οι φοιτητές έρχονται για έρευνα στις EIS στα τελευταία χρόνια των σπουδών τους στην περίοδο που κάνουν την διπλωματική τους εργασία.

Διαθεσιμότητα

Ακαδημαϊκοί

Χρησιμοποιούν EIS στα γραφεία στους σπίτι της και κάποιες φορές στην βιβλιοθήκη. Κυρίως κάνουν τις έρευνες στους γραφείους τους ενώ κάποιοι τις χρησιμοποιούν σε έκταση και στο σπίτι. Το πανεπιστήμιο παρέχει για όλους σύνδεση δωρεάν στο διαδίκτυο από το σπίτι αρκεί να έχει τον ανάλογο εξοπλισμό και μπορεί να έχει πρόσβαση με κωδικό του πανεπιστημίου. Η πρόσβαση από το σπίτι είναι σχετικά εύκολη. Υπάρχει μεγάλος αριθμός γραμμών που είναι διαθέσιμες αλλά οι χρήστες είναι πολλοί και δεν μπορούν να μπουν μέσω του πανεπιστήμιου πάντα εύκολα. Ανάφεραν ότι τώρα το πανεπιστήμιο αυξάνει τις γραμμές του και τα πράγματα θα είναι καλύτερα. Κάποιοι συνέδεσαν την ευκολία πρόσβασης με την ποιότητα των μηχανημάτων ή της τηλεφωνικής γραμμής. Ο κατάλογος παρουσιάζει συχνά προβλήματα συστήματος. Έχουν παρατηρήσει και πρόβλημα στα αποτελέσματα ερευνών. Τέλος το σύστημα είναι πεσμένο κάποιες φορές.

Φοιτητές

Οι φοιτητές χρησιμοποιούν EIS στην βιβλιοθήκη και στο σπίτι κάποιο, ενώ ένας ανέφερε ότι στις χρησιμοποιεί και στο CAD. Ένας από τους συμμετέχοντες υποστηρίζει ότι τις χρησιμοποιεί το γραφείο του καθώς είναι φοιτητής σε διδακτορικό και εργάζεται στο πανεπιστήμιο. Επίσης συμμετέχοντας χωρίς υπολογιστή στο σπίτι αναφέρει ότι τις χρησιμοποιεί και από internet café. Η σύνδεση στο σπίτι δεν είναι και τόσο καλή και γρήγορη. Δεν έχουν άλλωστε όλοι υπολογιστή στο σπίτι και όταν έχουν δεν μπαίνουν με μεγάλη ευκολία σε στιγμές αιχμής. Συμμετέχοντας υποστηρίζει ότι δεν είναι και τόσο κακή η σύνδεση και ότι εξαρτάται από την ποιότητα του εξοπλισμού.

Βιβλιοθηκονόμοι

Πρόσβαση για όλους μέσω πανεπιστημίου και από το σπίτι. Υπάρχουν υπηρεσίες που είναι διαθέσιμες μόνον εντός πανεπιστήμιου και οι οποίες πρόκειται να διατεθούν και εκτός. Οι φοιτητές ζητούν πληροφορίες για πράγματα που έχουν βρει στο χώρο τις βιβλιοθήκης ή και καμία φορά έρχονται με φωτοτυπίες από το σπίτι ή άλλες βιβλιοθήκες. Αναζήτηση κάνουν μέσω βιβλιοθήκης και αυτοί που παρακολουθούν τα μαθήματα δεν έχουν χρόνο να ασχοληθούν από το σπίτι.

Υπάρχει ένα σύστημα ελέγχου πρόσβασης όσον αφορά τις EIS που προσεγγίζουν. Αμεσα μπορούν να χρησιμοποιήσουν μόνο τον κατάλογο. Τις υπόλοιπες EIS πρέπει να τους δοθεί ένας κωδικός. Αυτό έχει γίνει από τους βιβλιοθηκονόμους για να μην μπαίνουν ανεξέλεγκτα στο διαδικτύο από τους υπολογιστές της βιβλιοθήκης. Υπάρχουν κάποια τεχνικά προβλήματα που εμποδίζουν την ομαλή λειτουργία των υπηρεσιών όπως είναι προβλήματα του ίδιου του συστήματος ή προβλήματα που αφορούν και τα συμβόλαια που έχουν γίνει με τους προμηθευτές των EIS. Επίσης αναφέρθηκε ότι υπάρχει πρόβλημα ηλεκτροδότησης του κτιρίου το οποίο επιδρά στην ομαλή λειτουργία των υπηρεσιών. Τέλος οι βιβλιοθηκονόμοι ανέφεραν προβλήματα που αφορούν την δομή του ίδιου του καταλόγου. Υπάρχει αδυναμία χειρισμού της ελληνικής γλώσσας όπως και στην αγγλική κάποιες φορές. Δεν κάνει έρευνα σε ελληνικά λήμματα αλλά απλά τα έχει κάνει ευρετήρια γι' αυτό και δεν είναι πάντα λειτουργικός. Χρησιμοποιείται η εντολή Browse.

Δεξιότητες χρήσης ηλεκτρονικών υπολογιστών

Ακαδημαϊκοί

Οι χρήστες είναι επιφυλακτικοί στον προσδιορισμό των δεξιοτήτων τους. Οι ίδιοι παρατηρούν για τον εαυτό τους προβλήματα που οφείλονται στην ηλικία τους και δεν κατέχουν τις δεξιότητες που θα έπρεπε. Μιλώντας για EIS ήταν αναπόφευκτο να αναφέρουν αισθήματα δυσφορίας ή και φόβου για τους υπολογιστές και να υποστηρίζουν ότι προτιμούν τις έντυπες πηγές πληροφορίας. Βέβαια υπάρχουν και κάποιοι που χρησιμοποιούν υπολογιστές ή και EIS αλλά κάνοντας βασικές εργασίες. Από την άλλη υπάρχει και μια ομάδα ακαδημαϊκών που υποστηρίζουν ακόμη και ηλεκτρονικά μαθήματα και θεωρούν ότι δεν μπορούν να δουλέψουν χωρίς υπολογιστές και EIS. Για τους φοιτητές πιστεύουν ότι είναι ευκολότερο να μάθουν να επικοινωνούν και να δουλεύουν με υπολογιστή. Πιστεύουν πως μπορούν και έχουν τις δεξιότητες χρήσης ηλεκτρονικών υπολογιστών.

Χαρακτηριστικά ένας αναφέρει ότι ο υπολογιστής είναι μέσα στην λογική τους.

Φοιτητές

Υποστηρίζουν πολλοί από αυτούς ότι γνωρίζουν πώς να χειριστούν έναν υπολογιστή. Κάποιοι βέβαια δεν νιώθουν αρκετά εξοικειωμένοι και μάλιστα μιλούν για συναισθήματα φόβου. Η στάση τους όμως δεν πλησιάζει την στάση των ακαδημαϊκών. Οι φοιτητές γνωρίζουν ότι πρέπει να έχουν δεξιότητες χρήσης ηλεκτρονικών υπολογιστών για να πάρουν το πτυχίο τους. Ο τρόπος που μαθαίνουν είναι μόνοι τους ή μέσα στο πανεπιστήμιο. Κάποιοι αναφέρουν ότι έμαθαν κάποιες στοιχειώδεις δεξιότητες στο σχολείο ή έχουν πάει φροντιστήριο.

Βιβλιοθηκονόμοι

Και αυτοί κάνανε μνεία για το θέμα της ηλικίας των ακαδημαϊκών όσο και για τους ίδιους όσον αφορά τις δεξιότητες. Για τους χρήστες είπαν ότι έχουν αρκετές δεξιότητες ώστε να χρησιμοποιήσουν το κατάλογο γιατί δεν μπορούν και να κάνουν αλλιώς αφού δεν μπορούν να εντοπίσουν το υλικό της βιβλιοθήκης παρά μόνο μέσω αυτού. Υποστηρίζουν ότι στην αρχή όταν έρχονται οι φοιτητές

αντιμετωπίζουν κάποια προβλήματα γιατί δεν έχουν χρησιμοποιήσει πριν υπολογιστή αλλά με κάποια βοήθεια γρήγορα μαθαίνουν να τον χρησιμοποιούν. Η σχολή τους αναγκάζει να μάθουν γιατί χρησιμοποιούν προγράμματα σχεδιασμού κτλ στα εργαστήρια τους.

Ερμηνεία δεδουλέων

Στοιχείο το οποίο εμφανίζεται στην έρευνα είναι ο παράγοντας ηλικίας. Οι ακαδημαϊκοί που είναι μεγάλοι στην ηλικία έχουν δυσκολίες στην χρήση. Αν σκεφτεί κανείς όμως ότι πολλοί από τους μόνιμους ακαδημαϊκούς είναι μεγάλοι στην ηλικία το πρόβλημα είναι ιδιαίτερα έντονο. Το βάρος της προώθησης και χρήσης των ηλεκτρονικών υπηρεσιών που παρέχει το πανεπιστήμιο πέφτει σε έκτακτους και ωρομίσθιους που δεν είναι και πάντα νέοι. Στο σημείο αυτό φαίνεται πως οι υπηρεσίες αυτές δεν είναι δυνατόν να χρησιμοποιηθούν από το κύριο σώμα των ακαδημαϊκών τουλάχιστον στο σύνολο τους. Αυτό πιθανόν να δημιουργεί και ρεύμα αντίστασης στην απόκτηση ηλεκτρονικών υπηρεσιών όταν οι ίδιοι που θεωρητικά τους είναι απαραίτητες δεν τις χρησιμοποιούν. Οι νεότεροι αυτών βέβαια λίγο ή πολύ τις χρησιμοποιούν όμως με επιφυλακτικότητα παρόλο που η πρόσβαση είναι αρκετή εξακολουθούν να νιώθουν πιο οικεία με την έντυπη πληροφορία.

Ο τρόπος χρήσης τους εξαρτάται από τις ανάγκες των χρηστών. Οι χρήστες στην βιβλιοθήκη της Αρχιτεκτονικής σχολής δεν έχουν ανάγκη να χρησιμοποιήσουν EIS κατά τα πρώτα χρόνια των σπουδών τους όταν οι εργασίες τους είναι σε απλή μορφή. Οι υπηρεσίες αυτές καλούνται να καλύψουν πιο σύνθετες ανάγκες που αφορούν ερευνητικές εργασίες και προσέγγιση θεμάτων σε βάθος. Οι φοιτητές σταδιακά εξοικειώνονται με την χρήση υπολογιστών και όταν παραστεί ανάγκη τις προσεγγίζουν. Ο ρόλος της βιβλιοθήκης σε ενεργητικές μορφές μάθησης θα μπορούσε να είναι καθοριστικός και οι υπηρεσίες της να αποτελούν βασικό μέσο ολοκλήρωσης των σπουδών. Σημαντικό είναι και το γεγονός ότι οι μεταπτυχιακοί φοιτητές φαίνεται να χρειάζονται περισσότερο αυτές τις υπηρεσίες.

Τα σημεία πρόσβασης δεν μπορούν να θεωρηθούν επαρκή από την στιγμή που στη νησίδα τους γίνονται μαθήματα και στην βιβλιοθήκη η πρόσβαση είναι περιορισμένη εκτός του γεγονότος ότι είναι λίγα τα μηχανήματα για να καλύψουν τις ανάγκες τόσων φοιτητών.

Εκπαιδευτικό σύστημα

Φιλολογία

Ακαδημαϊκοί

Δεν είναι οι φοιτητές υποχρεωμένοι να κάνουν εργασίες κατά την διάρκεια των σπουδών τους. Οι φοιτητές είναι πολλοί οπότε είναι δύσκολο να ελεγχθούν. Ο χαρακτήρας των λίγων εργασιών δεν είναι τέτοιος που να απαιτείται να γράψουν δοκίμια. Διευκρινίζουν ότι το πανεπιστήμιο δεν απαιτεί εργασίες διότι υπάρχει τόσο μεγάλος φόρτος μαθημάτων που είναι δύσκολη η εμβάθυνση σε κάθε ένα από αυτά. Το είδος των μαθημάτων διαχωρίζεται σε θεωρητικά και σε πρακτικά μαθήματα και οι φοιτητές πρέπει να κάνουν πρακτικές ασκήσεις στο δεύτερο. Στα θεωρητικά η διαδικασία είναι διάλεξη και σημειώσεις τις οποίες διαβάζουν με κάποια βιβλιογραφία ή το βιβλίο του καθηγητή και δίνουν εξετάσεις. Οι εξετάσεις λοιπόν αποτελούν το βασικό μέσο αξιολόγησης της απόδοσης των φοιτητών.

Η σχολή είναι θεωρητικής κατεύθυνσης. Η διδακτική διαδικασία χαρακτηρίζεται από τους ίδιους ως παραδοσιακή. Τα μαθήματα είναι πολλά και τα ακροατήρια

μεγάλα στα πρώτα έτη με αποτέλεσμα να είναι πολύ δύσκολο να δοθεί ένας διαφορετικός χαρακτήρας στον τρόπο διδασκαλίας. Διαλέξεις και σεμινάρια είναι ο τρόπος διδασκαλίας. Κάποιες φορές η διαδικασία μάθησης είναι ενεργητική αλλά και κάποιες παθητική. Δίνουν την βιβλιογραφία έτοιμη στους φοιτητές και τους ζητούν να την διαβάσουν. Είναι έντυπη και με βάση αυτή γράφουν εξετάσεις. Κάποιοι τους ζητούν και εργασίες να κάνουν τις οποίες υποστηρίζουν προσωπικά. Οι φοιτητές δεν ψάχνουν για καινούργιο υλικό. Οι μεταπτυχιακοί έχουν διαφορετικές ανάγκες καθότι οι απαιτήσεις σε αυτό το επίπεδο είναι διαφορετικές.

Φοιτητές

Δεν έχουν εργασίες στα πρώτα έτη κυρίως και στα μεγαλύτερα υπάρχουν κάποιες που δεν είναι πάντα υποχρεωτικές. Οι ανάγκες τους δεν είναι τέτοιες που να τους υποχρεώνουν να χρησιμοποιούν EIS. Ο τρόπος για να αξιολογηθούν είναι οι εξετάσεις. Ο διαχωρισμός στις απαιτήσεις μεταξύ θεωρητικών και πρακτικών μαθημάτων είναι σαφείς.

Παθητική είναι η διαδικασία μάθησης κατά τους φοιτητές. Ο τρόπος διδασκαλίας είναι διαλέξεις ενώ σε λίγα μαθήματα κάνουν κάποιες εργασίες. Σε κάποια μαθήματα οι διαδικασία είναι περισσότερο διαλεκτική και πρέπει να κάνουν κάποιες ασκήσεις. Ο τρόπος που διδάσκεται ένα μάθημα εξαρτάται από το είδος του μαθήματος. Οι ακαδημαϊκοί τους εφοδιάζουν με βιβλιογραφία. Προσπαθούν να τους εξοικειώσουν με τα βιβλία. Αυτή χρησιμοποιούν για να καλύπτουν τις ανάγκες τους στην περίοδο των εξετάσεων. Μόνον έναν μάθημα αναφέρθηκε από συμμετέχοντα ότι δεν δόθηκε βιβλιογραφία από τον καθηγητή αλλά απαιτήθηκε να την βρουν μόνοι τους και μετά αποφασίστηκε στην εργασία που θα έκαναν ποια από αυτά που βρήκα θα συμπεριλαμβανόταν. Οι μεταπτυχιακοί χρειάζονται περισσότερες πληροφορίες για να κάνουν εργασίες ενώ οι προπτυχιακοί όχι.

Βιβλιοθηκονόμοι

Οι βιβλιοθηκονόμοι υποστηρίζουν ‘ότι δεν έχουν οι φοιτητές εργασίες και όταν έχουν είναι απλές και δεν έχουν ιδιαίτερες απαιτήσεις. Κάνουν κάποιες ομαδικές οι οποίες για την ολοκλήρωση τους δεν απαιτούν βιβλιογραφική έρευνα. Δεν φαίνονται να χρειάζονται ή να χρησιμοποιούν τις EIS. Η αξιολόγηση τους βασίζεται σε εξετάσεις. Οι φοιτητές έρχονται με βιβλιογραφία και ψάχνουν με βάση αυτή. Διαφοροποίηση στις απαιτήσεις των χρηστών παρουσιάζεται από την πλευρά των μεταπτυχιακών που έχουν εργασίες και υποχρεώνονται να ψάξουν τα πάντα. Οι απαιτήσεις τους στην βιβλιοθήκη είναι διαφορετικές. Στους προπτυχιακούς δεν φαίνεται να υπάρχει ανάγκη να ψάξουν στις υπηρεσίες της βιβλιοθήκης σε βάθος σε αντίθεση με τους μεταπτυχιακούς. Οι μεταπτυχιακοί βρίσκονται σε δύσκολη θέση γιατί πολλές φορές οι εργασίες που κάνουν στο μεταπτυχιακό επίπεδο είναι και οι πρώτες εργασίες που κάνουν. Ψάχνουν τα πάντα και ρωτούν για τα πάντα.

Διαθεσιμότητα

Ακαδημαϊκοί

Χρησιμοποιούν EIS στο γραφείο ή στο σπίτι. Στο γραφείο είναι το συνηθισμένο σημείο πρόσβασης όμως συμμετέχοντες βεβαίωσαν την χρήση για έρευνα ή και απλώς τσεκάρισμα των πηγών από το σπίτι. Στην ερώτηση του ερευνητή για άλλα σημεία πρόσβασης ανέφεραν την βιβλιοθήκη την οποία δεν χρησιμοποιούν οι ίδιοι και την νησίδα των μεταπτυχιακών οι οποίοι δεν είναι και πάλι διαθέσιμοι για όλους τους φοιτητές ούτε καν για τους μεταπτυχιακούς οι οποίοι θα πρέπει να πάρουν κλειδί για να μπουν μέσα στο χώρο.

Ο κατάλογος είναι εύχρηστος στην μορφή Horizon ενώ η τεχνολογία Macintosh δημιουργεί προβλήματα. Ως τεχνολογία είναι πολύ φιλική στο χρήστη και εξυπηρετεί ελληνικές γραμματοσειρές και πολυτονικό έτσι πολλοί έχουν τέτοιου είδους υπολογιστές. Πολλές από τις EIS δεν είναι εύκολο να χρησιμοποιηθούν σε τέτοιο περιβάλλον και δημιουργούνται προβλήματα. Υπάρχει δε ένας τεχνικός σε ολόκληρο το κτίριο που θα πρέπει να υποστηρίξει όλες τις ανάγκες που γεννιούνται από την χρήση των υπολογιστών. Η δε ποιότητα των μηχανημάτων στην βιβλιοθήκη είναι πολύ χαμηλή με αποτέλεσμα να υπάρχουν συνέχεια προβλήματα.

Φοιτητές

Πρόσβαση έχουν στο σπίτι ή στη βιβλιοθήκη. Δεν υπάρχουν εργαστήρια ελευθέρα για να έχουν πρόσβαση από εκεί. Μόνο οι μεταπτυχιακοί έχουν χωριστά χώρο που να μπορούν να χρησιμοποιήσουν EIS ή γενικά υπολογιστές. Χρήστες ανέφεραν την χρήση και από internet café αλλά μίλησαν και για τον οικονομικό παράγοντα που επηρεάζει. Επίσης αναφέρθηκε ο οικονομικός παράγοντας και για την απόκτηση υπολογιστή στο σπίτι. Οι πτυχιακοί δεν έχουν στην ουσία πουθενά άλλού πρόσβαση παρά στην βιβλιοθήκη ενώ οι μεταπτυχιακοί έχουν νησίδα χωριστά. Το σύστημα είναι πολλές φορές κολλημένο και δεν μπορεί κανείς να δει EIS ενώ οι υπολογιστές είναι αργοί. Στην ουσία δεν χρησιμοποιούν τον κατάλογο ηλεκτρονικά γιατί υπάρχει και δελτιοκατάλογος.

Βιβλιοθηκονόμοι

Όλοι οι χρήστες έχουν πρόσβαση από το σπίτι- φοιτητές και ακαδημαϊκοί. Υπάρχουν πολλά προβλήματα στο εξοπλισμό που υπάρχει στο χώρο της βιβλιοθήκης για την χρήση των EIS οι ακαδημαϊκοί μπορούν να τις χρησιμοποιήσουν από τα γραφεία ή τα σπίτια τους ενώ για τους φοιτητές δεν ξέρουν ακριβώς από πού μπορούν αν τους χρησιμοποιήσουν στο χώρο του πανεπιστημίου. Οι ακαδημαϊκοί αντιμετωπίζουν προβλήματα πρόσβασης γιατί έχουν Macintosh υπολογιστές. Ξεκίνησαν με αυτούς και ο εξοπλισμός τους ήταν ανάλογος πράγμα που σημαίνει ότι είναι πολύ πιο ακριβοί από τα PC και λιγότερος εύχρηστοι. Οι συμμετέχοντες υποστηρίζουν ότι οι καθηγητές έχουν όλοι υπολογιστές ή θα έχουν μέσα στον επόμενο χρόνο στα γραφεία τους ή τους παίρνουν και στο σπίτι τους. Οι μεταπτυχιακοί έχουν χωριστή νησίδα και εκεί μπορούν να χρησιμοποιήσουν την βιβλιοθήκη. Στο χώρο αυτό λόγω προβλημάτων που δημιουργήθηκαν μπορούν να μπουν μόνο με κλειδιά.

Τεχνικά υποστηρίζονται για κάποια προγράμματα από την κεντρική η οποία έρχεται και τα εγκαθιστά ή υποστηρίζει κάποια καινούργια υπηρεσία. Στην καθημερινή πράξη όμως δεν υπάρχει τεχνική υποστήριξη. Ένας τεχνικός καλύπτει όλο το κτίριο που είναι υπεύθυνος ταυτοχρόνως και για την ιστοσελίδα. Ο εξοπλισμός στην νέα βιβλιοθήκη είναι σε καλύτερη κατάσταση αλλά και πάλι το έχει προμηθευτεί από την κεντρική και είναι παλιοί υπολογιστές. Στις άλλες δύο βιβλιοθήκες οι υπολογιστές στο μεν μια είναι εκτός λειτουργίας εδώ και καιρό ενώ στην άλλη είναι παλιοί αλλά διατηρούνται σε καλή κατάσταση με προσωπική πρωτοβουλία των βιβλιοθηκονόμων.

Δεξιότητες χρήσης ηλεκτρονικών υπολογιστών Ακαδημαϊκοί

Η αντίληψη και η νοοτροπία ότι οι νεότεροι χρησιμοποιούν και μαθαίνουν ευκολότερα ηλεκτρονικούς υπολογιστές είναι φανερή και σε αυτή την ομάδα του δείγματος. Υπηρεσίες που απαιτούν πολύπλοκες διαδικασίες στην εγκατάσταση ή

την χρήση τους δεν μπορούν να υιοθετηθούν από τους ανθρώπους που έχουν περιορισμένες δεξιότητες γιατί κουράζονται και τις εγκαταλείπουν. Κάποιοι έχουν την δυνατότητα να χρησιμοποιούν υπολογιστές. Παρουσιάζονται και εδώ επιφυλακτικοί όσον αφορά τις δεξιότητες που κατέχουν αλλά και τα συναισθήματα τους απέναντι στους υπολογιστές. Παρουσιάστηκαν και εδώ συμμετέχοντες που υποστήριξαν ότι δεν μπορούν να δουλέψουν χωρίς υπολογιστή.

Φοιτητές

Κάποιοι είπαν πως μπορούν να χρησιμοποιήσουν ηλεκτρονικούς υπολογιστές ενώ κάποιοι άλλοι όχι. Ακόμη και αν δεν είναι τέλειοι χρήστες λένε ότι μπορούν να χρησιμοποιήσουν κάποια προγράμματα ή EIS ενώ κάποιοι έχουν υπολογιστές στο σπίτι. Παρόλο που έκαναν υπολογιστές στο σχολείο κάποιοι που είναι σε μικρότερα έτη κυρίως δεν έχουν εμπιστοσύνη στις δεξιότητες τους αλλά πιστεύουν στην σημασία της χρήσης καθημερινά. Μαθαίνουν μόνοι τους.

Βιβλιοθηκονόμοι

Οι φοιτητές δεν έχουν δεξιότητες αν και κάποιοι τα καταφέρνουν όταν χρειαστεί. Δεν χρησιμοποιούν τον κατάλογο μα όταν το κάνουν σίγουρα ξέρουν να χρησιμοποιούν υπολογιστές. Ακόμη και αν δεν μπορούν όταν τους δείξεις τα καταφέρνουν. Στα σχολεία στην δευτεροβάθμια κάνουν χρήση ηλεκτρονικών υπολογιστών αλλά δεν είναι αρκετή για να τους δώσει τις γνώσεις που χρειάζονται ώστε να μπορέσουν να χρησιμοποιήσουν κάποιες EIS .

Ερμηνεία

Και σε αυτή την περίπτωση είναι φανερή μια προκατάληψη και μια στάση εκ των προτέρων επιφυλακτική με κύρια ιδέα: ‘ αυτά δεν είναι για μας αλλά για τους νεότερους’. Η ηλικία των ακαδημαϊκών επηρεάζει την στάση τους απέναντι στις EIS.

Οι νεότεροι αυτών βέβαια λίγο ή πολύ τις χρησιμοποιούν όμως με επιφυλακτικότητα ή και δυσκολία. Τα προβλήματα που γεννιούνται από το λειτουργικό σύστημα θα μπορούσαν να αποφευχθούν και αντιμετωπιστούν.

Ο βαθμός χρήσης των υπηρεσιών εξαρτάται από των ρόλο των εργασιών και στη συγκεκριμένη σχολή είναι πολύ μικρός. Οι φοιτητές δεν είναι εξοικειωμένοι με την χρήση υπολογιστών παρόλο που όταν παραστεί ανάγκη τις προσεγγίζουν. Η διδακτική πράξη είναι παραδοσιακή και όπως έχει ήδη ειπωθεί παραπάνω για να χρησιμοποιηθούν αυτές οι υπηρεσίες θα πρέπει να είναι περισσότερο ενεργητική. Οι μεταπτυχιακοί φοιτητές φαίνεται να χρειάζονται περισσότερο αυτές τις υπηρεσίες και να τις χρησιμοποιούν όπως μπορούν και όπου μπορούν.

Τα σημεία πρόσβασης δεν μπορούν να θεωρηθούν επαρκή από την στιγμή που στη νησίδα τους γίνονται μαθήματα σχεδόν αποκλειστικά. Στην βιβλιοθήκη η πρόσβαση είναι περιορισμένη εκτός του γεγονότος ότι είναι λίγα τα μηχανήματα για να καλύψουν τις ανάγκες τόσων φοιτητών είναι και παλιά και αργά πράγμα που στην ουσία τα καθιστά δυσλειτουργικά.

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"A research about the effectiveness of electronic information services in the Greek third degree education: case study "

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Summary

The effectiveness of electronic information services (EIS) in the Greek academic libraries is the subject of this in-depth qualitative research. The sample, so that is supported the research, includes: *students, academics and librarians*. The process of data collection has been completed and the analysis has been completed. The research was designed in seven stages: literature review and planning of research, data collection, first circle of analysis, second phase of data collection, second circle of analysis, third phase of collection data and final analysis. The research realises the important role that plays the communication between the parts of sample and the role of educational system in the use or no the EIS.

Words keys: *Electronic information services, Greek third degree education, Greek system of third degree education, Greek academic libraries, evaluation of services, qualitative research, study of case.*

Introduction

The technological developments and the possibilities that offer, as we know have involved important changes in the operation and the action of libraries.

Particularly they have influenced the academic libraries that serve and support the inquiring and academic community. As a result of the international and local developments the libraries develop new services, create web pages. The reflection of this research is fixed in how much the up to now offered electronic services carry out their objective.

Therefore the aim of the research is: "to inform the development of Electronic Information Services (EIS) and their effective use in Greek Higher Education libraries." Based on the findings researcher will produce a frame for the use of EIS for the students and the academics in the Greek third degree education. This objective will constitute the final phase.

Nature of research and sample

The research is qualitative and the theoretical approach hermeneutics. Qualitative methodology is considered to be the best way to do in-depth user-centred research. It looks to identify individuals' worlds and to investigate in-depth the examined context in order to achieve in depth understanding. Qualitative researcher should 'understand the complex interrelationships among all that exists' and can illuminate the researched area by using 'thick description', 'experiential understanding', and 'multiple realities'. Stake (1995, p 40) says that: "to sharpen

the search for understanding, qualitative researchers perceive what is happening in key episodes or testimonies, represent happenings with their own direct interpretation and stories (narratives). Qualitative research uses these narratives to optimise the opportunity of the reader to gain an experiential understanding of the case.” The epistemology of the qualitative research is existential and constructivist and as Stake says (p43): “phenomena are intricately related through many coincidental actions and that understanding them requires looking at a wide sweep of contexts: temporal and spatial, historical, political, economic, cultural, social and personal.” Holistic Case Study method is used in order to support this research.

The process of data collection and the analysis of data have been completed. The research includes *seven stages*: literature review and planning of research, data collection, first circle of analysis, second phase of data collection, second circle of analysis, third phase of data collection and final analysis. The tools that were used for the data collection are following: in-depth interviews, *notes of observation at use EIS, notes of observation, a file of questions and telephone interviews*. As field of research were: a) of Architecture library and b) Medieval and New Greek Study library. A purposive sample has been selected to provide valuable insight and to ensure the precious broadness in the research. The sample includes: *students, librarians and permanent academics*.

The libraries in the Aristotelian university

The establishment of university Thessalonica was legislated by law 3341/1925. On 11 July 1927 was published the Presidential Decree "About constitution of library in the University of Thessalonica". The library began her operation in 1927, in the ground floor of the current old building of Philosophical faculty. Simultaneously a lot of other departmental libraries develop activities in the Aristotelian university. Almost each department has his library while sometimes there are more than one in each of them. These libraries began as small laboratories with the documents and books that could support the seminars. Progressively the requirements of faculties grew also they changed in libraries. All these libraries are connected immediately with the central library that is henceforth accommodated in separate building in the centre of the university. They operate almost according to the same rules they have the same policy. Concretely, today the Aristotelian university of Thessalonica has 10 faculties in operation, what includes 44 departments.⁶ One central and 38 partial libraries serve its needs.

Data collection

The polytechnic faculty includes five faculties and one from them is the Architecture. It has five (5) sectors and (1) library serves 1655 under-and graduate students, 112 postgraduate and 96 academics. The observation took place two (2) hours per day for four (4) weeks. The researcher took interview from five (5) librarians, twelve (11) students and ten (20) academics. In the students the sample was selected in regard of the year of study and the sex while in the academics of the thematic sector and the sex. The librarians' sample constitutes the total of assignmentsers in the library.

⁶<HTTP:// www. auth. gr>

The faculty of Philosophical includes eight (8) departments. The department of Literature has 4 libraries and covers three (3) thematic sectors. Medieval and New Greek study library is one from them and serves 1854 under-and graduate students, 35 (125) receiving postgraduate education and 28 (76) academics. The users could use anyone from the libraries. The observation included two (2) hours per day observation on four (4) weeks. The researcher took interview from five (5) librarians and twelve (12) academics and ten (10) students. Moreover (1) one librarian from the other two libraries and two (2) librarians' interviews from the new thematic library where the journals are completed the picture of users behavior because they can use any of them. The researcher observed the last place two hours for 3 days.

First case: Library of Architecture

The library provides users with seven (7) computers (/Y). Two (2) of them has access in the web page of library. In the rest computers the user can see the catalog and restriction exists for the remainder electronic services. The department allocates laboratory) with twenty-four PC but twelve (12) have web access while the room is used for seminars long times daily. This laboratory was observed one (1) hour daily for one week and no one use the web page of library. The informal discussion with the responsible persons in this place confirmed that the users do not use computers there in order to enter on the library web page.

Second case: Medieval and New Greek Study of faculty of Philosophy

There are two (2) available PC in the library that offer access in the catalog but have restriction for the remainder services. They are not easy in use because they are old. In the same space there is a card catalog and the users can have access in the information via it. The department has a laboratory specifically for the postgraduate students where exist eight (8) available PC with web access. The users can use them by appointment. The room is free access regularly but because they face technical problems they limited. Exists another laboratory for the under-and graduate students with twenty-five (25) PC but this room is used for educational reasons.

The central library decided the growth of new service of libraries in a separate space as I report already in order to gather the journals. It has ten (10) PC. All they have web access. These services are available to all the students and the academics of the Philosophy faculty. The library under the Classical study has six (6) EIS and a card catalog available in the same space while in the last library under the Linguistic studies exist two (2) PC and card catalog again in the same space. The researcher faced really the problem with the use or not use of computers in all the libraries of Philosophy faculty apart from news where the students emanate from various departments of Philosophical faculty. The users in this case can use anyone from the four libraries that are available.

Data presentation

This research presents the two cases separately because there is no intention of comparison. It explains and it interprets the elements that were given by the three parts of sample. This research is focused on the user and the analysis of elements is turned in the user and their needs. The three thematic units that have resulted

from the data are: the educational system, the availability of services and the dexterities of users.

Architecture

Educational system

At testimony of participate-professors and students - the students in the faculty of Architecture at their first years of study do not have assignments. The participation in the teaching process is small. In the specialisation afterwards the third year the things are differentiated, academics have bigger requirements from students and require more attendance. Exists difference in the requirements that they have from the students with regard to the theoretical and practical modules where the assignments have practical character. For example drawing is the usual assignment they have. The assignments in theoretical modules are not enough in order to pass the module. The students it will be supposed that give examinations in the end of semester. Important role possesses in their study the diplomatic project that they are compelled to make in the end of their study.

The modules are theoretical and laboratorial. There are a lot of modules and the students cannot go in depth specifically in theoretical modules. The students attend lectures, seminars and have laboratories. Academics do not provide students with catalogs of bibliography when they ask to do an assignment. The students are compelled to search alone for information everywhere they can find it.

From their side the librarians say that academics ask the students to do some assignments but are no big extent. The students do research in the EIS in the last years of their study in order to complete their diplomatic project.

Availability

Academics

They use of EIS in their offices at home or even certain times in the library. Mainly they do their researches in their office while somebody use in extent at home. The university provides all with connection on the web free of charge at home. If they have the appropriate equipment they can access the web with the university code. The access at home is relatively easy. There are many lines available but the users are more. They mention that the university will give more lines and the things will be better. Somebody connects the quality of access with the quality of equipment or telephone line. The catalog presents frequently problems of system. They have observed also problem in the results of their researches. Finally the system is fallen certain times.

Students

The students use EIS in the library and at home, while one report that he uses also in the CAD. One participant supports that he uses in his office. He is student in PhD level and assignments in the university. Also participant reports that she uses EIS in 'internet café' because she has no computer at home. The connection at home is not so much good and fast. All the students do not have computer at home and when they have they do not enter onto net easily in hours of peak. Participant supports that the connection is not too bad and depends on the quality of equipment.

Librarians

They support that there is access for all via university and at home. There are services those are available only on-campus and will be off- campus available

soon. The students ask information on things that have found in the space of library at home or other libraries. The students who attend the modules have no time to deal at home and they make search via library.

There is a system of control of access with regard to the EIS. Directly they can use only the catalog. The rest of the EIS are available by code. This has become in order to ensure computers security. They also want to avoid that user comes and play or check the web. Exist certain technical problems that prevent the smooth operation of services as are problems of the system or problems that concern the contracts that have become with the suppliers of EIS. Also it was reported that there is problem of electrification in the building, which affects negatively in the smooth operation of services. Finally the librarians reported problems that concern the structure of catalog. Exists weakness of handling the Greek language as well English certain times. It simply does not do search in Greek entries because the catalog has created indexes and information is not available through any other choice except ‘Browse’.

Dexterities of computers use

Academics

The users are circumspect in the determination of their dexterities. They observe problems that are owed in their age. They say that they do not possess the dexterities that would be supposed. Speaking for EIS it was inevitable that they report feelings of malaise or even fear for the computers and they support that they prefer the printed sources of information. Of module exist and somebody that use computers or EIS but making basic assignments. From the other side there is a team of academics that they support even electronic modules (e - learning) and consider that they cannot assignments without computers and EIS. About students they believe that it is easier for them to learn, communicate and assignments with the computer. They believe that student can and have the dexterities of use computers. Characteristically one reports that the computer is ‘in their logic’.

Students

Many from them support that they know how to handle a computer. Somebody of module does not feel enough familiarised and in particular speak for sentiments of fear. Their attitude however does not appear to be same with the academics’ attitude. The students know that they should have dexterities to use the computers in order to have their degree. They acquire dexterities alone or in the university.

Some participants report that they learned certain elementary dexterities in the school (secondary education) or they attend modules in private schools.

Librarians

And librarians mention the age problem about academics and their selves as well. For the students they said that they have enough dexterity to use computers. They use the catalog because they cannot do differently because they cannot locate the material of library otherwise. They support that in the beginning when the students come face certain problems because they have not used before computer. Quickly with some help fast they learn using computers and EIS. The faculty forces them to learn because students have to use design programs in their laboratories.

Interpretation

Element which is presented in the research is the factor of age. The academics that are elder have difficulties in the computer or EIS use. If one thinks that many of the permanent academics are elder in the age the problem is particularly intense.

The weight of promotion and use of EIS that provides the university falls on part time staff who are not always young. In this point it appears that the main body of academics possibly does not use these services at least in their total. This likely creates also a group of resistance in the acquisition of EIS when the people that theoretically need them do not essential use them. Younger use them more or less however with reserve. They continue feeling more familiar with the printed information.

EIS way of use depends on the users' needs. The users in the library of Architecture do not have need to use EIS at the first years of their study when their assignment is in simple form. These services are called to cover complex needs that concern inquiring assignments and approach of subjects in-depth. The students progressively familiarize itself with the use of computers and when there is need they approach them. The role of library 'in energetic forms of learning' could be decisive and her services constitute basic means of studies completion. It is important that the postgraduate students appear to need more these services.

The points of access cannot be considered sufficient when in their labs are occupied for modules and in the library the access is limited except that few PC. Moreover the number of students is big and the accessibility is small.

Philology

Educational system

Academics

The students are not compelled to do assignments at the duration of their study. The students are many therefore it is difficult to check them. It is not required to write essays. They clarify that the university does not require assignments because there is so much pressure of the module that it is difficult the deepening in each one from them. The modules are separated in theoretically and in practical modules and the students should do practical exercises in the second category of modules. In theoretical the instructive process is realised via lectures. The students keep notes, which they read with some bibliography or the book of professor and give examinations. The examinations therefore constitute the basic means of evaluation of output of students.

The faculty is theoretical direction. The instructive process is characterized by the academics as traditional. Lectures and seminars are the way of teaching. Certain times the process of learning is energetic but also some others passive. They give the bibliography ready in the students and they ask them to read it. He bibliography is in printed form. They support personally student who ask for assignments. The students do not search for new material. Postgraduate have different needs while the requirements in this level are different.

Students

The students confirm the above picture and characterize passive the process of learning. The way of teaching is lectures while in few modules they make certain assignments. In certain modules process is more dialectic and it should do exercises. The way that a module is taught depends on the type of module. The academics provide students with bibliography. They try to familiarize them with the books. They use bibliography in order to cover their needs in the period of examinations. Only a module was reported from participant was not given

bibliography from the professor but it was required that students find alone it. Afterwards they in common decided which information would include in the assignment. Postgraduates need more information in order to do assignments while under and graduates no.

Librarians

The librarians support that the students do not have assignments and when they have they are simple and do not have particular requirements. They do some in group which for their completion do not require bibliographic research. They do not appear to need or to use the EIS. Their assessment is based on examinations. The students come with bibliography. The postgraduate that they have assignments and are compelled to search everything present differentiation in the requirements of users. Their requirements are different. Under- and graduates do not appear to need to search EIS in-depth contrary to postgraduate. Postgraduate are found in difficult place because many times the assignments that they do in the postgraduate level is also the first assignment that they have to do. They search everything and ask for everything.

Availability

Academics

They use EIS in the office or at home. In the office is the usual points of access however participant confirm that they use them for research or even browsing at home. In the question of researcher for other points of access they reported the library, which they do not use and the lab of postgraduates.

The catalog is functional in the form Horizon while the computers work with software Macintosh. As technology Mac is very friendly in the user and serves Greek fonts and ‘polytonjko’ thus many have such type of computers. Many of the EIS are not easy used in such environment and have problems. One technician supports the needs of the entire building while he is responsible to built the web page as well. The quality of instruments in the library is very low so that there is constantly a problem.

Students

They have access at home or in the library. There is a lab that is not free so they have no access in there. Only postgraduates have separately lab that could use EIS or generally computers. Users report the use on ‘internet café’ but speak for the economic element. Also students report the economic element about the computer’s acquisition at home. Finally the under- and graduates do not have in the substance nowhere access despite in the library. The system is many times stuck and no one can see EIS while the computers are slow. In the substance they do not use the catalog because there is a card catalog..

Librarians

All the users have access at home - students and academics. There are a lot of problems about the equipment that exists in the library for EIS use. The academics can use them in their offices or at home while the students do not know precisely where they can use them. The academics face problems of access because they have computers with Macintosh. They began with them and their equipment were much more expensive than the Windows and more functional. The participant support that soon the academics have or will have computers in their offices. This place is control access now because problems were created and users can enter only by keys.

Technically the central library that comes and installs or supports some new service supports them. However in the daily practice does not exist technical support. A technician covers all the building that is responsible simultaneously and for the web page. The equipment in the new library is in better condition but also again is old computers.

Dexterities of computers use

Academics

The perception and the mentality that youngest use and learn easier computers are obvious and in this team of sample. Services that require complicated processes in the installation or their use cannot be adopted from the persons that have limited dexterities. They cannot do it and they abandon it. Somebody have the possibility of using computers. They are presented and here circumspect with regard to the dexterities that possess but also their sentiments about the computers are negative. They are presented few participant that support that they cannot work without computer.

Students

Somebody said that they could use computers while other no. Even if they are not perfect users they say that they can use some programs or EIS while few of them have computers at home. Even if were taught computers in the school some bodies that are in smaller years mainly they have confidence in their dexterities. They believe that they have to use computers every day in order to reach the right level of skills. They learn by their selves.

Librarians

The students do not have dexterities although some student can do it when they need it. They do not use the catalog but when they do it they know how to use computers. Even if they cannot when somebody show them they accomplish. In the schools in secondary education they attend classes about use of computers but it is not enough in order to give them the knowledge that they need.

Interpretation

And in this case are obvious a bias and an attitude beforehand circumspect with main idea: `these are not for us but for youngest. The age of academics influences their attitude to the EIS. The younger use however EIS with reserve or even difficulty. The problems that are given birth by the functional system could be avoided and they are faced.

The degree of services' use depends on the role of assignments, which in the particular faculty is very small. The students are not familiarized with the use of computers however when there is need they can learn and c they an approach the EIS. The method of teaching is traditional and as already it has been said above, in order to use more EIS it will be more energetic. The postgraduate students appear to need more these services and they can use them anywhere and everywhere they can. The points of access cannot be considered sufficient from the moment.

Particularly when the lab is occupied the whole day for seminars. In the library the access is limited except that there are few computers in order to cover the needs of so many students. Lastly the computers are too old which means in the substance they are dysfunctional.

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