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Organising e-journals from the point
of view of humanists: a case study at
the University of Parma

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CONTENTS

<i>List of tables</i>	<i>iv</i>
<i>List of figures</i>	<i>iv</i>
<i>Declaration</i>	<i>v</i>
<i>Abstract</i>	<i>vi</i>
<i>Abbreviations</i>	<i>vii</i>
<i>Permission to copy</i>	<i>viii</i>

Chapters

1 Introduction	1
1.1 Problem statement	1
1.2 Research aims, objectives and questions	2
References	2
2 Background information	4
2.1 The University of Parma	4
2.2 Library services at UP	4
2.3 Electronic resources at UP	5
2.4 E-journals at UP	6
2.5 Management and organisation of e-journals	6
2.6 User training in electronic resources	8
References	8
3 Literature review	9
3.1 Introduction	9
3.2 Problematic issues in the organisation of e-journals	9
3.3 Current approaches to the organisation of e-journals	10
3.3.1 Vendor sources' lists	10
3.3.2 Static Web lists of links to individual titles	10
3.3.3 OPAC integration	11
3.3.4 Separate databases	12
3.3.5 Multiple access points	12
3.3.6 Commercial e-journal management services	13
3.4 Integrating e-journals with electronic and printed resources	13
3.4.1 Towards integrated and customisable discovery systems	14
3.4.2 Library portals	14
3.5 Organisation of e-journals and user studies	15
3.5.1 Impact of the e-journal organisation on service usage	15
3.5.2 Evaluation of e-journal discovery systems	16
3.6 Conclusions	17
References	18
4 Methodology	23
4.1 The case study approach	23
4.2 Research techniques	23
4.2.1 Focus group	24
4.2.1.1 Purpose	24
4.2.1.2 Advantages for the present research	24
4.2.1.3 Limitations	25
4.2.1.4 Selection of participants	25
4.2.1.5 Design	25
4.2.1.6 Location	25
4.2.1.7 Analysis	26
4.2.2 Observations	26
4.2.2.1 Purpose	26
4.2.2.2 Advantages for the present research	26
4.2.2.3 Limitations	26
4.2.2.4 Selection of participants	27
4.2.2.5 Test design	27
4.2.2.6 Pilot test	27
4.2.2.7 Location	27
4.2.2.8 Analysis	28

4.2.3 Interviews	28
4.2.3.1 Purpose	28
4.2.3.2 Advantages for the present research	28
4.2.3.3 Limitations	28
4.2.3.4 Selection of respondents	29
4.2.3.5 Design	29
4.2.3.6 Construction of questions	30
4.2.3.7 Analysis	30
4.2.4 Questionnaire	30
4.2.4.1 Purpose	30
4.2.4.2 Advantages for the present research	31
4.2.4.3 Limitations	31
4.2.4.4 Selection of the sample	31
4.2.4.5 Method of data collection	32
4.2.4.6 Design	32
4.2.4.7 Response rate	33
4.2.4.8 Characteristics of the sample population	33
4.2.4.9 Analysis	35
References	35
5 Findings	38
5.1 Use of electronic journals	38
5.2 Barriers to use	40
5.2.1 Unawareness about e-journals	40
5.2.2 Irrelevance of journal literature	42
5.2.3 Limited range of e-titles	42
5.2.4 Poor availability of back issues	43
5.2.5 Preference for printed journals	44
5.2.6 Dislike of reading from screen	45
5.2.7 Lack of technical skills	46
5.2.8 Unawareness about the available points of access to e-journals	46
5.2.9 Insufficient computer equipment	47
5.2.10 Impossibility of access from home	47
5.3 Advantages of e-journals	47
5.3.1 Perceived advantages	48
5.3.2 Expectations on e-journal service	49
5.4 Promotion of the e-journals	53
5.4.1 Sources of information about e-journals	53
5.4.2 Type of support or training	55
5.5 Discovering and accessing e-journals at Parma	56
5.5.1 Techniques for finding the journal literature	56
5.5.2 Methods adopted for locating e-journals	56
5.5.3 Discovering e-journals from the librarians' viewpoint	58
5.5.4 Users' perception of BibEl	59
5.5.5 Users' perception of the OPAC as access point to e-journals	60
5.5.6 Effectiveness of BibEl and the OPAC to locate e-journals	60
5.5.6.1 Test results	60
5.5.6.2 Path of research followed	63
5.6 User expectations on effective methods for locating e-journals	63
5.6.1 The OPAC	63
5.6.2 Access by A-Z list on the Web site	66
5.6.3 Access by subject on the Web site	66
5.6.4 Access from references in bibliographic databases	68
5.6.5 Single user interface	69
References	70
6 Conclusions	72
References	76
7 Recommendations for further research	77
8 Limitations	78
References	78
9 Reflective review	79

10 Bibliography	83
Appendix 1: Invitation to the focus group meeting	90
Appendix 2: Focus group questioning route	91
Appendix 3: Observer's comment form	92
Appendix 4: Interview guide	94
Appendix 5: Faculty member questionnaire	96
Appendix 6: Student questionnaire	102
Appendix 7: Cover letter questionnaire (faculty members)	108
Appendix 8: Cover letter questionnaire (students)	109
Appendix 9: Reminder letter (faculty members)	110
Appendix 10: Reminder letter (students)	111

LIST OF TABLES

Table 1: Research techniques and data sources	23
Table 2: Correlation between research objectives and research techniques	24
Table 3: Questionnaire response rate	33
Table 4: Faculty members' fields of research	33
Table 5: Faculty members' years of experience in research	34
Table 6: Graduate students' fields of research	34
Table 7: Undergraduate students' course of study	34
Table 8: Undergraduate students' year of attendance	35
Table 9: E-journal use	38
Table 10: Frequency of use	39
Table 11: Reasons for non-use of e-journals	41
Table 12: Problems found in using e-journals	43
Table 13: Advantages of e-journals	48
Table 14: Factors that would encourage the use of e-journals	51
Table 15: Factors that would encourage the use of e-journals by users and non-users	52
Table 16: Sources of information about e-journals	54
Table 17: Type of support/training received from the library	55
Table 18: Methods followed for locating e-journals	57
Table 19: Methods followed for locating e-journals by frequent and infrequent users	58
Table 20: Success in locating the e-journal Mnemosyne	60
Table 21: Usefulness of the different methods for locating e-journals	65
Table 22: Usefulness of the different methods for locating e-journals for users and non-users	66
Table 23: Preferred points of access	74

LIST OF FIGURES

Figure 1: Frequency of use in percentage	39
Figure 2: The UP libraries Web site main page	61
Figure 3: The record of Mnemosyne as it appears from the OPAC	62
Figure 4: The Electronic Journal Web page	62
Figure 5: The BibEl's user interface	63

DECLARATION

This dissertation is the sole work of the author, and is developed from a research proposal submitted by the author in Year two, Session one as part of the BP101 Unit (Independent study unit for information studies 2) of the course.

ABSTRACT

Organising e-journals from the point of view of humanists: a case study at the University of Parma

by Fabrizia Bevilacqua

Organising e-journals is an aspect of promotion and has a major impact on fostering awareness and use of the service. However, this issue is often considered from a theoretical or mainly technical point of view, while the users' requirements in this area are frequently neglected. From a user perspective, the organisation of e-journals is effective if readers are enabled to localise e-titles in an easy and intuitive way. These functions can be provided through the library discovery systems, such as the OPAC, a Web list or a more complex discovery environment, and through the indexes and abstracting services.

The present research was carried out with the purpose to investigate the organisation of e-journals from a user viewpoint, in order to find out what influence the approach adopted by the library may have on the use of e-journals and what characteristics the organisation of e-journals should have to enable an easy discovery of resources. A case study was carried out at the University of Parma, involving students, faculty members and library staff in Classics and Medieval studies. Methodology for the research comprised a mixed qualitative and quantitative approach: a focus group, observations, face-to-face interviews, and a questionnaire.

The results indicated that this group of users were still reluctant to use e-journals and that the main barriers to use were lack of awareness and distrust for the electronic medium. This group of users was favourable to being provided with multiple points of access to e-journals. Their preference appeared to be based on the familiarity of the method and similarity to the organisation of their physical library. The organisation of e-journals adopted at Parma had the potential to meet user expectations, but its actual implementation did not offer effective promotion and support, and presented some major usability problems. A number of improvements would be desirable in the design of the electronic service. Finally, UP libraries should develop a global promotion strategy to support the web-based presentation of resources, and improve communication.

ABBREVIATIONS

ACNP	Archivio Collettivo Nazionale dei Periodici
ARL	Association of Research Libraries
BHI	Bibliography of the History of Arts
CCE	Centro di Calcolo Elettronico
CD-ROM	Compact disc read-only memory
CONSER	Cooperative Online Serials

DD	Document delivery
ILL	Inter-library loan
ISSN	International Standard Serial Number
LIS	Library and Information Science
LISA	Library and Information Science Abstracts
MARC	Machine-Readable Cataloguing
OPAC	Online Public Access Catalogue
PC	Personal computer
PCI Full-Text	Periodical Content Index Full-text
PCC SCA	Program for Cooperative Cataloguing Standing Committee on Automation
SB	Settore biblioteche
UP	University of Parma

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1 INTRODUCTION

1.1 Problem statement

Nowadays e-journals are among the most important information resources in Italian academic libraries, if one considers the great amounts of financial and human resources devoted to licence and manage large numbers of titles and full packages through specially instituted consortia between universities [1]. Although at the time of the research no studies about the use of e-journals in Italian universities were available in the professional literature, anecdotal evidence seemed to indicate that e-journals were largely under-used at the University of Parma (UP).

Close examination of the results of previous use studies revealed that the use or non-use of e-journals can be related to a multiplicity of factors, very often differently combined, such as [2]:

- number of full-text titles
- availability of back issues
- awareness of the service
- promotion
- lack of technical skills
- insufficient hardware resources
- restrictions and limitations to access
- local provision of library services
- personal information seeking and use behaviours

Promotion appeared to be one of the key aspects for the librarians engaged in e-journal service provision. In its broader sense, promotion can mean any activity which aims to foster the awareness and use of the service, including publicity and marketing, education and user support, and provision of resources discovery points. Promotion has a high impact on awareness, which is one of the most relevant factors influencing the use or non-use of e-journals [3].

How to organise electronic resources in the library discovery systems is just one of the most hotly debated issues about e-journals in the Italian professional literature [4]. However, the approach seems to be more centred on the librarian's than on the user's point of view, mainly focusing on the cataloguing theory and on the technical skills required of librarians. It seems that no attention has been paid to analyse how the organisation of e-journals can meet the needs of the users to whom the service is addressed.

From a user perspective, the organisation of e-journals should be considered effective if users are enabled to identify and localise the e-titles in an easy and intuitive way. These functions can be provided through the library discovery systems, such as the OPAC, a Web list or a more complex discovery environment, and through the indexes and abstracting services. If the approach adopted by librarians to enable discovery, localisation and access to titles does not meet the information seeking behaviours of end users, the latter will feel confusion, frustration or simply will never discover relevant resources for their studies. As a consequence this factor could contribute to decrease the use of the service.

The purpose of the present research is to investigate the organisation of e-journals from a user perspective, in order to find out what influence the approach adopted by the library may have on e-journals use and what characteristics organisation of e-journals should have to enable an easy discovery of resources. A case study was carried out at the University of Parma, involving students and faculty members in Classics and Medieval studies. This discipline was found to be one of the least investigated area in the studies on e-journal use. This gap may be explained with the limited availability of e-journals in the humanities disciplines and the low use of electronic information resources by humanists. However, at Parma faculty members and students in Classics and Medieval studies had access to a small e-journal collection, and the statistical data about the networked electronic resources usage showed that the use of these resources was quite high within the Literature and Philosophy faculty [5].

1.2 Research aims, objectives and questions

The aims of the present research are defined as follows:

- To increase the use of e-journals by students and faculty members
- To provide students and faculty members with a user-centred system for locating e-journals
- To provide evidence of the values of user studies for developing an effective organisation of e-journals

The objectives of the research are the following:

- To identify how the group of users under study perceived the currently available methods for discovering and locating e-journals
- To identify their expectations on a system that facilitate discovery and access to full-text journals
- To interpret the above in terms of an effective organisation of e-journals
- To explore implications for librarians engaged in electronic information service delivery

The present study addresses the following research questions:

Does the e-journal discovery system adopted by the UP libraries have an impact on the use of e-journals by this group of users?

What is the most suitable method for organising e-journals from the perspective of this group of users?

Are the currently available methods for localising e-journals easy to use and in tune with the research habits of scholars and students?

How should the UP Libraries organise the service to meet the expectations of this group of users?

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[5] The statistics about the usage of networked databases and CD-ROMs are produced by the University Centre for Electronic Calculation (Centro di Calcolo Elettronico, CCE), on a six months basis.

2 BACKGROUND INFORMATION

2.1 The University of Parma

The University of Parma is classified among the Italian medium size universities, with a population of around 29,200 undergraduate students and 560 graduate students. The number of staff totals approximately 1,100 faculty members and 1,000 technical staff. According to the Italian higher education system, a faculty member is defined as research or academic staff, while the technical staff includes administrative, library and technical staff. The UP teaching activity is organised in ten faculties, which are physically dispersed in various parts of the town: Agriculture, Architecture, Economics, Engineering, Law, Literature and Philosophy, Medicine, Pharmacy, Science, and Veterinary. Around 7,200 students attend courses in the Literature and Philosophy faculty, most of them in Psychology and in Cultural Heritage. Although the number of students who graduate in Classics and Medieval studies is quite low, one or more than one modules in this field are present in most Literature and Philosophy courses. According to the former higher education system, undergraduate degree programmes in Literature and Philosophy normally lasted four years. With the new higher education system, which was introduced in 2001, undergraduate degree programmes last three years. However students can exceed this period. Graduate degree programmes last three years. Faculty members teaching Classics and Medieval studies are organised in four different Departments: Classical and Medieval Philology, Cultural Heritage, History, and Philosophy.

2.2 Library services at UP

Parma has a fragmented library service provided by a central unit (Settore Biblioteche, SB) and twenty libraries, which can be either faculty or department libraries. Only the library staff depend upon the central unit, while all other aspects are managed independently, the SB having only a coordination and supervision role. While faculty libraries are rather large structures and administer independently their budgets, the department libraries depend upon their departments for acquisitions. At Parma the heads of the libraries are always faculty members. They administer the funds and approve any request of acquisition, usually being supported by an internal acquisition committee. The library staff look after acquisitions, cataloguing, service organisation and provision.

The SB has a role of coordination between the twenty libraries, promotes common initiatives and monitors the services delivered to users. The SB structure consists of the SB head, the Management Department (Servizio Gestione) and the Acquisition Department (Servizio Acquisti). The SB head is a librarian and acts as representative of the library system. While the Servizio Gestione coordinates the activities of the libraries and monitors the services available to users, the Servizio Acquisti looks after acquisitions of non-Italian books and periodicals for the libraries. The supreme policy making body of the UP libraries is the University Libraries' Committee (Commissione di Ateneo per le Biblioteche), on which sit the Rector's Delegate for libraries (Delegato del Rettore), the SB head, representatives from the libraries heads, representatives from the library staff, the Electronic Calculation Department head, and finally representatives from the student body and from the University administrative board.

Since 1996, the SB has been maintaining a Web site where users can find information about the library services and access the electronic resources available at Parma [1]. The SB Webmaster is in charge of developing and maintaining the overall information services about the library services at Parma, but many faculty/department libraries look after their own Web site.

Students and academic staff in the Classics and Medieval studies are provided with information services through four department libraries - Classical and Medieval Philology, Cultural Heritage, History, and Philosophy - and the Literature and Philosophy faculty library, which holds only reference materials and provides Inter-Library Loan services. All the department libraries are small and have limited staff, which usually include only one or two professional staff. Department libraries hold specialised collections of books, journals, dissertations and electronic materials, and offer library services such as loans, reader services, reference services, Document Delivery services, and computer facilities. However, opening hours, regulations, facilities and technical infrastructure are very different in the five libraries. For instance, only two libraries offer non-stop access from 9.00 a.m.

to 6.00 p.m., one library does not allow the borrowing of books, one library is organised in four sub-sections, and only one library offers open access to the bibliographical material. The libraries are housed in three separate buildings, which are located in different parts of the town.

2.3 Electronic resources at UP

The UP libraries make available a wide range of online bibliographical databases for their customers. The largest number of resources is in the medical, technical and scientific disciplines, while the supply of electronic information services for the humanities, law, and economics disciplines has been added only recently and currently includes quite a large number of reference databases and collections of full-text electronic documents. Access to electronic resources is provided through different interfaces. Most indexing and abstracting services are available on the University network through the WebSPIRS interface. Other remote access databases are available on the Web, and a number of CD-ROMs are accessible online through a CD-ROM network. Access is possible to all databases only from inside the campus, and a username/password is required for connecting to the WebSPIRS interface.

Students and faculty staff in Classics and Medieval studies can find a wide range of electronic resources in their discipline, including the following bibliographical databases and collections of literary texts:

- Patrologia Latina Database
- Thesaurus Linguae Graecae
- L'Année philologique
- Bibliography of the History of Arts (BHI)
- BibleWorks
- Bibliotheca Teubneriana Latina
- Cetedox Index of Latin Forms
- Cetedox Library of Christian Latin texts
- Current Contents, Art and Humanities
- Dyabola
- Gnomon Bibliographical Database
- Index of Christian Art
- Packard Humanities Institute
- Philosophers Index
- Periodical Content Index (PCI) full-text
- Web of Science

Several databases which are licensed from the UP libraries are currently offering full-text linking options, and provide direct links from the bibliographical references to the electronic articles the UP libraries subscribe to. This possibility for the Classical and Medieval resources is limited to PCI Full-text (around 10% of indexed articles), Current Contents and Web of Science.

While the libraries manage independently the acquisition of printed materials and stand-alone CD-ROMs, the purchase of networked databases, multidisciplinary remote access resources and electronic journals is centrally managed through the SB. Since 1996 the SB has been provided with a budget for the acquisition of electronic resources. These funds have been continuously increasing over the years to cope with the growing requests for networked CD-ROMs, remote access databases, and, more recently, electronic journals. Every request for online resources is submitted to the SB and must be approved by the Commissione di Ateneo per le Biblioteche. The SB staff look after all the activities related to negotiation, acquisition and management of electronic information resources, with the support of the Electronic Resources Team, a working group of library staff from different subject areas which is in charge of analysing the technical characteristics of the products, assisting the SB chief in negotiations, analysing the statistics on usage, and promoting initiatives for increasing awareness of electronic resources among the UP members. The UP Electronic Calculation Department (Centro di Calcolo Elettronico, CCE) provides the technical infrastructure and the human resources for the delivery of networked information services. The CCE staff produce statistics on usage normally on a

six months basis, but limited to the networked resources. Currently, no statistics are obtained from the remote services providers.

2.4 E-journals at UP

When e-journals appeared in the mid-1990s, the SB policy was to encourage libraries to subscribe if the cost of a combined electronic/print subscription was no more than the print subscription alone. This policy for promoting electronic access to journal literature obtained the support of the library staff: at the end of 1999 the e-journal collection included 453 titles, most of them in Physics, Chemistry, Medicine and Biology. However, it became soon clear that there was a growing demand for access to online versions of journals, in particular from the medical and scientific sector, and that a specific engagement of the UP libraries in this area was necessary. At the end of the 1990s a number of Italian universities were starting to cooperate in order to negotiate and license e-journals on easy terms through a consortium approach. In 2000 the SB obtained a supplementary budget for purchasing e-journals and joined the CIPE, a consortium of several universities. The first licence agreement was with Elsevier Science, followed in the same year by Blackwell Science. Further agreements with Kluwer, MCB University press, ProQuest and the Royal Society of Chemistry followed in 2001 and increased the number of e-titles and the range of subjects covered. The UP libraries currently take over 3,700 e-journals, most of which are only available to users in electronic format. Access is possible to all journal titles only from inside the campus. Sometimes a username and/or password are required to obtain access. Most e-journals are in the scientific and medical disciplines, but a relevant collection in the economic, social and humanities field is now available. Promotion of e-journals is usually made through e-mails sent to all faculty members, which highlight new titles and services, and through announcements on the Web site. Some libraries, mostly in the scientific area, undertake further initiatives, such as posters, user guides and presentations.

The collection of e-journals relevant to the Classics and Medieval studies is not large (around 70 titles). It includes a number of journals from Kluwer and Blackwell Science, Oxford University press, Brill and few other publishers, which provide access to the most recent issues, usually from the end of the 1990s. Around 30 publications are available, since the beginning of publication up to 1990, through PCI full-text.

2.5 Management and organisation of e-journals

Since the decision to provide the UP users with a large e-journals collection has pushed the UP libraries to join the CIPE consortium, the management of the journal collection at Parma is carried out in three different ways:

- The libraries continue to manage their printed journal collection, selecting the relevant titles, administering the budget for journals and sending the list of non-Italian titles to the SB Acquisition department, which acts as a subscription agent.
- The SB, which receives inputs from the Commissione di Ateneo per le Biblioteche, manages the e-journals purchased through consortia agreements, participates in negotiation activities as CIPE's member, and follows all procedures for e-journal access activation and trouble-shooting.
- As the SB activity for e-journals is limited to full packages licensed within CIPE, libraries are free to subscribe to e-journals not included in consortia agreements on an individual basis. Department/faculty librarians apply to the Acquisition Department for subscription and enter into negotiation with the publisher over the agreement terms for electronic access and trouble-shooting.

In the initial phase of the e-journals service development in mid 1990s, the SB provided access to full-text journals through an alphabetical list of the titles accessible from the UP libraries Web site. This was a simple static list, which was managed directly by the Library Web site manager with the information received from libraries. With the increasing number of electronic versions, an access by broad subject categories was added to the alphabetical list. These subjects included Chemistry, Earth

and Environmental Sciences, Engineering and Computer science, Law and Economics, Mathematics and Statistics, Medicine and Biology, Physics, and Psychology and Social sciences. The libraries Web managers were free to maintain additional lists of e-journals of specific interest to their users. Since the participation in the consortium pushed up the number of e-journals, it became evident that a more complex and coordinated approach was necessary. From the technical point of view, the SB needed an administrative tool that would facilitate the processing of hundreds of titles, facilitate updating and enable libraries to add the e-journals independently licensed. In 1999 the Electronic Resources Team was charged with developing a more effective solution for managing and providing access to e-journals. At that time it was not possible to use the catalogue as discovery system for e-titles. Sebina Produx, the library management system, which had been purchased and installed in 1997, did not provide linking options to full-text journals. Consequently, the Electronic Resources Team decided to develop a database that could help librarians with the management of subscriptions and licensing and at the same time provide a user interface for accessing e-journals. The database was designed locally with the cooperation of the CCE information system staff, and implemented at the end of 1999. The database was realised using MYSQL for the database structure, and PHP and SERVLETS JAVA for the interface. The e-journal management system was called BibEl and was linked to the UP libraries Web site at the beginning of 2000. All members of the library staff have access to the database, which is kept on the UP network, and therefore they can check the collection at any time. Librarians were trained to using BibEl during a one-day session, where they were also invited to process all e-titles individually subscribed through the system and to substitute the locally maintained e-journals list with a link to the new system. The users were informed by e-mail and with announcements on the Web site.

BibEl is currently the tool used to manage and access the UP e-journal collection [2]. The system provides two interfaces, one for the library staff engaged in e-journal collection management, and one for the end users. Through the first interface both the SB and the libraries' staff can add new titles, update and maintain information, process the data needed for subscription management, extract lists and link the available titles to the appropriate subjects. The user interface provides keyword searching and browsing e-titles by A-Z list, by subject and by publisher. The broad subjects are still maintained, but a new area 'Philosophy, Literature, and History' has been added for the humanities. For every journal title BibEl includes a set of data: title, home page URL, holding, access status information, publisher/supplier, subject and the library where the printed version is available.

With the installation of the new release of the Web OPAC in 2001, the UP libraries were offered the possibility to organise access to e-journals from the catalogue. This opportunity was the subject of lively discussions among the library staff: would it be appropriate to integrate e-journals into the OPAC, thus abandoning the database system, or rather to maintain the two access points? What types of e-journals should be added to the OPAC, only the electronic versions of titles held in printed format, or the electronic-only titles too? Would it be more effective to use the catalogue for printed materials, and to provide access to electronic materials through the Web site? While librarians from the humanities and the economic area were more favourable to the organisation of e-journals through the catalogue, the scientific and medicine staff were the most unfavourable to such a solution, because their users, who were the most frequent readers of e-journals, were not likely to use the catalogue to search materials. This issue became even more complex when, at the end of 2001, the UP catalogue and the Parma public libraries catalogues merged together to build a union catalogue. How to organise the cataloguing of electronic resources into the union catalogue was a question that meant satisfying different needs and requirements. A working group of UP librarians was created in 2002: its aim was the development of guidelines to the integration of electronic resources in the union catalogue. As a result, a number of libraries in the economic and humanities disciplines have begun to add e-journals to the OPAC.

2.6 User training in electronic resources

Until 1999 bibliographical instruction and training in information resources at UP was offered only in a limited number of libraries. The most common approach was to introduce students to the library services through meetings and seminars at the beginning of the academic years, and organising periodical workshops about new services and resources. This fragmented and uncoordinated approach resulted in limited effects on users' information skills and too labour-intensive tasks for the librarians. At the beginning of 2000 the UP library staff decided to develop a coordinate initiative for training

students in new skills. The programme was designed in 2001 and included a course on using online catalogues, databases, e-journals, freely available Internet resources, and organising bibliographic references. The programme, which was intended for undergraduate students, was implemented in the academic year 2002/2003 through different courses realised in the ten faculties. The seminars were called 'From the library to the network' (Dalla biblioteca alla rete). In some cases it was possible to involve willing academic staff in the project and to include the courses in the student curricula. The course for the Literature and Philosophy students was realised in September 2002 and involved 40 students from different areas. As the evaluation of the education programme showed, the students' feedback was very positive and most librarians thought that the experience had positive outcomes and were likely to repeat the course over the years. However, some major problems emerged:

- Students wanted more hand-on sessions and less theoretical speeches
- The logistic organisation proved to be problematic
- Many librarians felt that the engagement in new activities was too labour-intensive
- Some faculties were more willing than others to accept the new role of the librarians
- It was problematic to find a way to include the bibliographical instruction programmes in the certified UP learning programmes of all faculties.

Although the UP librarians were favourable to repeat the programme in the academic year 2003/2004, at the time of the present research only a few courses were being organised in the scientific area.

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3 LITERATURE REVIEW

3.1 Introduction

The purpose of this chapter is to present a review of the professional literature, both Italian and international, on the themes of organisation of e-journals for presenting resources to users, and on the studies undertaken both to evaluate the different methods from a user's point of view and to discover the user's requirements in this issue. As e-journal organisation is only one aspect of the provision of a broad information landscape, including resources with different formats and locations, the theme was considered in the light of the theory on the organisation of electronic resources. Within the context of the present review, which analyses publications from 1990 up to the present time, the term electronic journal includes both print/electronic versions of existing journals by commercial publishers and free peer-reviewed electronic-only journals.

3.2 Problematic issues in the organisation of e-journals

Only a few years ago, when e-journals were at an early stage of diffusion, processing and organising the available resources was not a problematic issue for academic libraries. For many commentators, the main mission of libraries in this field was to facilitate users' acceptance of the new technologies, and the most effective strategy to achieve this objective was to include e-journals in the online catalogues, integrating them with the library information resources [1]. But the recent proliferation of titles, publishers and suppliers has complicated the task of informing users and providing easy discovery of full-text titles. Librarians are reconsidering the effectiveness of the traditional discovery systems [2].

How to process and organise e-journal titles is a lively debated theme in the professional literature. This is easily understandable, if one considers that organising information resources has traditionally been one of the core functions of librarians. The SuperJournal project, a study undertaken between 1997 and 1998 to investigate the major factors leading to the success of e-journals, collected empirical evidence about the librarians' perception of their role in e-journal service provision [3]. Organising e-journals to facilitate use was the role most commonly and enthusiastically mentioned by the librarians involved in the project. In a more recent study on North American and UK academic librarians, Ashcroft and McIvor found that ensuring that users were aware of the available resources was one of the main concerns for the librarians engaged in e-journal management [4].

With the widespread practice of licensing full e-journal packages, often through a purchasing consortium, academic libraries have to process several hundreds of e-titles. These collections, which are commonly called e-journal databases or aggregator databases, may include publications of a single publisher or may be aggregations of journals by third-party suppliers, and provide different interfaces and search tools. As many commentators observe, processing e-journal databases is a real challenge for librarians, for many reasons. First, titles in e-journal databases are often ephemeral, can be changed or disappear without the library being aware of the change. Second, often only the more recent issues of a title are available, while for older issues there are abstracts or tables of content. But the holding information can be absent or incorrect, and it is not easy to know which years are covered in full-text or only in abstracts. In any case, users remain dependent on the print publication for complete information. Finally, some resources offer access to individual titles only by issuing a subject search across the database contents [5].

Managing access to the titles included in e-journal databases through a local discovery system is a time and labour-intensive task, which implies the solution of a great deal of technical problems. However, it is vital that libraries invest resources in the field of e-journal promotion if they want their users being aware of the available resources and using them, and the universities having a return on the investment done [6]. Nevertheless, since at present only a limited portion of journal literature is available in electronic format and users need to make use of both the electronic and the printed collection to satisfy their research needs, libraries must find a method for facilitating users to search in a seamless and easy way all the relevant resources available to them.

3.3 Current approaches to organisation of e-journals

Over the last five years a number of projects have been carried out in the United States and in the UK to investigate the strategies applied by libraries for organising e-journals. In 1998 a CONSER task force was charged with exploring the issue of providing effective bibliographical control of journals in full-text databases. The task force began its work with a survey about what CONSER libraries were at the moment doing to provide access to these resources, what problems they were encountering, and what they would like to see it happen in order to provide efficient access to this body of material [7]. In 1999, Shemberg and Grossman surveyed ARL and non-ARL libraries with the aim of finding the currently available methods for users to access e-articles from their desk [8]. In two studies conducted in 1998/99 and 2000/01, Rich and Rabine examined the web sites of about one hundreds of US academic libraries in order to determine how they were providing access to their e-journals [9]. Ashcroft and McIvor carried out an investigation on librarians with responsibility for the management of e-journals in UK and North American universities libraries. In this study they collected information about the current methods used to promote e-journals among users and about the most effective future methods of promotion [10]. In an article published in 2002, Aaron described the results of a survey on North American libraries that examined the full-text linking options used in libraries [11]. All these investigations showed that a standard method for organising access to e-journals in libraries had not yet been established, but libraries were employing different methods to provide enhanced access to e-journals for end users and to make maintenance more efficient for staff. Although Tammaro [12] recommended that library consortia would extend their functions from acquiring electronic resources to organising easy access, developing a single point of contact for different resources, and facilitating user to find information, often these issues have been left to individual member institutions [13], and only recently library consortia have begun to debate how to develop shared and innovative ways to provide information about the available resources [14].

Close examination of the literature on the different approaches to organising e-journal titles shows that the efforts for building a coherent information system are notable, but a solution to the conflicting needs between maintaining high quality bibliographical records and managing high numbers of titles with low costs, and between the desire of offering to users an integrated access to all information resources and the effort for enabling easy discovery of e-titles has not been found yet. The different approaches adopted by libraries, their advantages, limitations and current developments, are described in the following section.

3.3.1 Vendor sources' lists

The libraries following this approach provide a Web page with a list of links to e-journal databases. This low maintenance method is easy to build, but does not provide a real support to users, who must search every supplier's list individually, and are not allowed to subject browsing. For this reason, libraries often used to adopt this approach at an early stage as provisional access point. Currently, it can be used as an additional access point to more sophisticated systems [15].

3.3.2 Static Web lists of links to individual titles

More often, libraries implement and maintain a list of e-journals on a Web page [16]. Depending on the complexity of the list, e-journals can be browsed only alphabetically, or alphabetically and for subject area / department. These lists usually furnish information about titles, publishers, URLs and coverage date ranges, in a few cases with additional synthetic information about access. Some lists are mixed and include links both to individual titles and to vendor sites. Calhoun and Kara observed that static HTML lists are easy to produce, but labour intensive to maintain and cannot be shared among libraries. Consequently, such Web lists are suitable only for a few hundreds of titles [17]. From a user's point of view these lists give a direct access to e-journals and can be browsed by subject, but users have to know in advance that the desired title is electronic and search multiple sources to perform a complete search. This method had a large diffusion among academic libraries, and if many decided to abandon the static lists for more sophisticated solutions, the approach of offering browsable lists of titles on the Web pages was maintained, because these lists were considered effective and users liked them [18]. Ashcroft and McIvor [19] found that at the moment of their survey, the A-Z list of e-journal titles on the Web page was the most popular method to promote e-journals both in UK and in North American academic libraries.

3.3.3 OPAC integration

This approach consists in using the catalogue as the basis for e-journal access [20]. Copeland in her literature review about electronic serials' cataloguing over the 1990s showed how this approach had been greatly appreciated by librarians, especially in the first part of the decade, and summarised the guidelines for integrating e-journals into the OPACs [21]. E-journals' records must be entered in the catalogue through the single record technique or the separate record techniques. The first consists in adding holdings for the electronic version to the print journal catalogue records, while the second requires producing separate records for print and electronic titles. Calhoun and Kara considered the single record technique as difficult to apply when the library does not hold the print copy and requiring highly trained staff, but ideal for users who find only one description and two holding information. On the other side, the separate record technique requires that librarians provide full records, which are expensive and time consuming to create. Furthermore, the display with separate record technique can be complex and confusing for users [22].

The issue of cataloguing e-journals available through full-text databases was the subject of investigation of the Program for Cooperative Cataloging Standing Committee on Automation (PCC SCA) Task Group on Journals in Aggregator Databases. In the final report, published in January 2000, the Task Force provided a list of recommendations for producing records to identify full-text e-journal titles and holdings in aggregator databases, in a useful, cost-effective and timely way [23]. Four cataloguing approaches were identified:

1. Human-created analytics, where cataloguers create MARC records for inclusion in the catalogue. The task force suggested this approach only for small collections, including up to 200 titles.
2. Machine-derived analytics, where computer programs produce MARC records from existing human-created records, for instance print versions. This was the best solution in terms of quality.
3. Machine-generated analytics from vendors, where computer programs produce MARC records from elements provided by the vendors. The task force considered this approach less good than the previous one, because records were less accurate and no subject headings were provided.
4. Local developed program for creating a minimal-level sets from vendor-supplied title/ISSN listing. This method produces very poor data, but it is possible to easily add them to the OPAC. The task force recommended it only if machine derived records were not possible.

Many commentators continue to recommend a traditional library-based approach for electronic resources and consider the catalogue as the most suitable access tool for both printed and electronic materials. They stress that the OPAC provides one access point for the whole collection and enables users to discover, select and access information resources in all formats [24]. The study of Ashcroft and McIvor found that, while using A-Z lists was the most popular method to promote e-journals among UK and North American academic libraries, adding electronic links from OPAC was considered the most effective future means of promotion [25].

Nevertheless, a number of criticisms have been addressed to using the OPAC as system for e-journal discovery. First of all, users, especially the most inexperienced ones, get confused in having a single discovery tool that does not allow searching e-journals separately from the rest of the materials. Secondly, OPAC is designed to describe local physical resources, but does not offer fast access and cannot be accessed through a hierarchical browsable directory [26]. Finally, from a technical point of view adding e-journals to the OPAC is the most labour-intensive method to maintain and traditional cataloguing is too slow [27]. In order to overcome such technical and staff resources constraints, a number of libraries are currently purchasing cataloguing records for the purchased e-journals [28].

Dealing with online resources in OPACs proved to be particularly problematic for consortia with merged catalogues and for libraries participating in union catalogues. If developing cataloguing rules, implementing records and maintaining them in a shared environment increase technical complexity, the main disadvantages of this approach are for the union catalogue users. As the libraries within the union catalogue may have subscriptions to a particular title, but through different vendors, and e-titles may be available only for limited members, it may be difficult for users to understand if they have access to a title and from which vendor [29].

3.3.4 Separate databases

In order to overcome the weaknesses of the catalogue approach, to give more evidence to e-journals and to facilitate the implementation of Web lists, many libraries have recently turned to processing e-titles through locally developed databases, which provide a user interface accessible from the Web site [30]. Usually e-journals' databases can be searched and browsed by title and/or subject. Many commentators note that from a user's point of view this method is easy to handle, although it requires that users perform separate searches for electronic and printed materials. From the technical point of view e-journal databases are easy to maintain, but the implementation entails technical considerations and resources [31]. Rich and Rabine conclude their survey of the methods adopted by libraries to promote discovery of e-titles, by indicating the database-driven model as the best answer to managing access to e-journals. This approach would provide the flexibility of access needed by users, and would enable librarians to integrate e-journals with other available electronic resources. On the contrary, the PCC SCA Task force recommends it only if machine-derived records are impossible to produce [32].

3.3.5 Multiple access points

Anderson notes that the continuous development of technologies is providing libraries with multiple ways to achieve the objective of delivering integrated services to users. She suggests that libraries take advantage of all these opportunities, because users probably want and need multiple ways to discover electronic information resources [33]. The professional literature offers several examples of projects aimed at providing users with multiple access points to e-journals. Information about individual titles is often provided through two separate discovery systems: a Web list and the library catalogue [34], a searchable database and the library catalogue [35], or a searchable database and Web lists [36]. In one case three discovery systems are available: a web list, a database and the library catalogue [37].

With the growing number of e-titles to be processed, the maintenance of such a multiple access approach is becoming more and more difficult for library staff. Different techniques are in use to simplify the maintenance and increase the effectiveness of the system: an e-journal titles database is used to generate lists [38], the catalogue records are exported to create lists on the Web site [39], the catalogue records are extracted to build a database, or on the contrary database information is processed, converted into MARC records and sent to the catalogue [40]. However, the multiple access approach can present several points of failure, if it is not adequately supported by effective communication and strong relationships among the library staff. Often different library services are involved in the e-journal processing, the bibliographic/technical service producing catalogue records and the information system staff implementing the database, and the subject librarians producing Web list. When communication and coordination between the different groups are insufficient, the possible consequence is that customers are provided with a poorly integrated and fragmented discovery system, difficult to understand and to use [41]. Kiel and Summers [42] and Henning [43] have brought into question the validity of the multiple access approach, complaining about the duplication of staff effort required for creating and maintaining multiple access methods to online journals, and suggesting that it might be time to evaluate the efficacy and need for various access points.

3.3.6 Commercial e-journal management services

Recently, a number of suppliers of library products have developed specific services to help libraries to manage their subscriptions to e-journals and organising access. These services, usually licensed as annual subscription, provide a customised interface to all available e-journals, both free and licensed, with article level searching as well as browsing and searching of e-journal titles. They also provide subscribing libraries with bibliographical information that they can add to their local catalogues, and usage statistics. The number of libraries using these services is continuously rising [44].

3.4 Integrating e-journals with electronic and printed resources

Together with e-journals, academic libraries are offering access to a wide range of electronic resources, such as bibliographical databases, networked CD-ROMs, numerical datasets, e-books, and

selected Internet resources. The issue of providing users with an effective access to e-journals cannot be considered separately from the one of organising electronic resources and integrating digital and paper-based information. Surprisingly, some commentators consider e-journals quite an ambiguous resource. For instance Guerrini [45] makes a distinction between e-journals, which are alternative versions of printed resources held by the library, and databases of full-text articles. While the former should be recorded in the OPAC, for the latter a direct link to the resource should be more appropriate. Moreover, Ridi [46] envisages different strategies of access whether e-journals are acquired or else they are free. But does this statement make sense for users accessing electronic resources? Hanson [47] argues that a distinction by source, cost, or technology is not a suitable approach for libraries engaged in developing effective access arrangements to their users. He rather suggests a distinction between printed local resources, which are effectively organised through the traditional catalogue, and the electronic resources, which could be more effectively organised through 'the access catalogue'. While several commentators recommend a traditional library-based approach and consider the catalogue as the most suitable access tool for both printed and electronic resources [48], others have questioned whether a searching tool designed to describe local physical resources would be appropriate for accessing electronic resources [49]. The digital space, as Manoff [50] and Tammaro [51] note, tends to dissolve the boundaries between resources and services, and therefore it is difficult for users to discriminate between catalogues, indexes, full-text databases, document delivery, and online reference. If one of the most important features of electronic information is just to allow easily navigation among journals, articles, texts, and references, this makes it difficult for librarians to integrate e-resources into traditional library structures, which are designed for accumulating clearly demarcated objects, and exercise control over them. But the concept of access itself is different in the printed and in the electronic environment. Kluegel [52] argues that in the print world access has only one dimension, since the item that has been catalogued and located in the library shelves is accessible to all the customers who can use the catalogue and request it. On the contrary, access has several dimensions in the digital world. It includes availability for use, as there could be restrictions; it also depends upon the library's technological infrastructure and on the intellectual organisation and presentation of the resource as reflected in the interface. Indeed, the descriptive catalogue records are not sufficient to provide customers with all the information that may facilitate them using the electronic resources.

3.4.1 Towards integrated and customisable discovery systems

Many commentators note that an effective intellectual infrastructure for electronic resources should not be restricted to presenting and describing the available resources, but should rather combine identification, selection and description with reference and access services, integrating access guides and suggestions for use. This assumption has some major implications for librarians: organising access to e-resources involves different areas, such as cataloguing, providing technology and educating users, and therefore requires an effective communication and collaboration among collection development, cataloguing and reference librarians [53]. What form should this information landscape take in order to be easily understandable and usable? Manhoff [54] suggests that building Web pages that highlight the information resources relevant to specific subject and facilitate the establishing of relations among ideas, texts, documents, data and images would provide an approach to organisation more in tune with the specific research needs of library users. According to McKnight et al., most librarians involved in the SuperJournal project felt that libraries should organise e-journals in specialist areas according to the users' research needs. A new connotation in a traditional library role was emerging, which emphasised the organisation of e-journals as a way to guide users not only to what was available, but also to what was relevant for their interests [55]. This approach focused on the educational and social needs of users, rather than on technology, was adopted by the developers of Hylife, who provided customer-oriented access points to both printed and electronic resources via a Web-based interface [56].

A major problem for users accessing e-journals is the fact that they have to cope with different interface and search facilities. The ideal solution, as Rowland observes [57], would be to provide a single interface for searching all e-titles. According to Arant and Payne, the common user interface may be defined as "a single public interface to electronic information resources available in libraries: an integrated system offering access to the OPAC and index databases as well as electronic journals and other digital resources such as electronic reserves and digital archives" [58]. It should include different components, such as a meta-search interface with a single point of entry for all selected

resources, links between all relevant resources, a personalised account enabling the users to compile their knowledge-base, an interactive component for information help, and links to guides and service request forms.

These components, as Arant and Payne observe, have been often discussed about but do not seem to have been completely implemented. However, to be provided with a library software that gives a single interface for searching all e-journal titles seems to be one of the strongest expectations of librarians engaged in e-journal management [59].

3.4.2 Library portals

The exam of the professional literature has allowed the identification of some major requirements that an ideal system for organising information resources should offer:

- Integration of multiple resources - printed and electronic - in an information landscape that should be easily understandable and usable
- Cross searching many databases with one interface
- Reference linking facilities for navigating among resources that are available through different services
- Creation of customised gateways for groups of users

In response to these requirements, a number of suppliers of library management systems and library products are now offering sophisticated library oriented portal products, which focus on enabling easy search, selection of resources and integration [60]. Library portals offer many advantages to libraries engaged in building an information landscape for their users: they provide a standard interface to aggregate library resources and services, enable easy navigation among different resources, allow organising gateways of different resources by discipline or target groups and also by individuals. Cox and Yeates, who in 2002 realised a study and a survey of the available solutions, highlighted the major aspects that libraries must consider when deciding whether to adopt such a system. Library portals have high costs, require hard work of collaborative configuration and metadata harvesting and can become competitors with other institutional or learning environments [61]. Moreover, as noted also by Ketchell, currently users do not want systems that are often hard to learn, and do not seem to appreciate much any sophisticated personalisation [62]. Rather than concentrating on technologies, librarians should rather investigate how users view their information environment, and analyse the context in which the library operates. How vital is for the library users to have resource integration? What training should they be provided in order to enable the use of a sophisticated search tool? Do the library staff have the skills required to organise the system and to assist users? Cox and Yeates conclude that libraries should continue to consider other possibilities for presenting e-journals and other e-resources alternative to the local portal service, such as traditional cataloguing, listing of resources on the Web site, subscription to e-journal systems managed by intermediaries, commercial e-journal database systems or local content management solutions [63].

3.5 Organisation of e-journals and user studies

Current technology offers information professionals a wide range of systems and techniques to support users in locating and accessing available full-text journals. In this situation, it is easy for librarians to concentrate more on technology than upon their users in approaching the service. Furthermore, the library strategies to the organisation of e-resources are often based on the librarians' understanding of user needs and behaviour. But if the intention is to develop user-centred systems, to facilitate the discovery of resources relevant to specific groups of users and to allow an easy navigation among different services, the most important step is to understand the users' requirements and to evaluate whether the system offered is in tune with these needs. Many commentators stress that a user-centred discovery system of e-journals should take into account the requirements of the users about accessing e-journals. But what studies have been conducted on the user behaviour towards locating e-journals? What points of access have been identified as necessary to specific groups of users?

3.5.1 Impact of the e-journal organisation on service usage

One of the results of the SuperJournal project was the identification of a number of local factors, which are related to the characteristics of the local library service provision, as key elements affecting the use and success of e-journals. Among these factors, the approach adopted by the library to promote the availability of e-journals seemed to play a major role [64]. If not properly signalled at the point of need, e-journals remain an invisible resource for users. Therefore, lack of signals affects usage. However, facilitating discovery of e-journals through a library discovery system such as the OPAC is only one of the aspect of an effective promotion, which should include other signalling mechanisms, such as displaying posters in the library and placing flyers by print journals, and promotion activities, such as e-mails sent to staff, subject librarians visits, training sessions, presentations, and announcements on the Web site.

Other insights into this subject came from the analysis of the SuperJournal users' behaviour. The two prominent properties that users identified as important in an e-journal service, as Eason and Harker noted [65], were the characteristics of the collection (in terms of range of titles, updating and back files) and 'the operation of the service', which included ease of use, need of fast access and ease of searching. Further exploration of the users' behaviour in utilising the service showed that the preferred mode of usage was basic browsing and that one of the features of SuperJournal most appreciated by the users was having a 'virtual library shelf' enabling them to explore a number of journals in their subject area. Having a 'clusters of journals in a similar discipline from a number of publishers and the opportunity to browse them in a familiar way' [66] was considered an easy way of finding articles. According to Eason and Harker, users behave according to the 'Principle of Least Effort': in seeking information they tend to follow a path that had high probability of a useful outcome, and require a minimum psychological effort. Users tend to adopt existing, familiar mental models rather than trying unknown and possibly effortful alternatives. From a user's point of view, ease of use means that their current 'mental model' works and there is no need to expand psychological energy creating new models. If users considered it easy to access a cluster of titles in their discipline, that was because this approach made exploration familiar and was similar to the conventions of the library shelf. Another implication of this principle is that users who face a barrier are likely to abandon the path they were following and look for an alternative 'least effort' way to find information. As these findings suggest, the way in which e-journals are arranged and presented on the Web has a major impact on users' ability to operate a system and on the use of a resource. The designers of electronic services, as Eason and Harker [67] and Winkworth [68] stress, have to pay attention to these psychological processes, if they are to encourage users to make full use of the facilities provided.

A user study, conducted in 1996 at the Cornell University Mann Library for evaluating the effectiveness of the Web-based Gateway - an information system providing access to networked resources, including catalogues, indexes, directories, numeric datasets, full-text documents, and spatial files - and for improving the understanding of users' research process, showed that users wanted to locate information in a quick and effective manner with minimal investment in learning and searching time. They were not interested in learning about information types or subject schemes [69]. In particular undergraduate students were likely to follow the easiest and least painful way to complete their research, while graduate students showed a research attitude more similar to the faculty one. Although users showed interest in having a common interface, they tended to use only few familiar resources. Moreover, there were differences between the search behaviour of researchers of different disciplines. These findings suggested that any discovery system should be flexible and adaptive, give users a choice among different ways to achieve a result, and finally create linkages between information sources that are theoretically, or logically related to each other, albeit physically disconnected.

3.5.2 Evaluation of e-journal discovery systems

A number of libraries have undertaken investigations on their e-journal service, and sometimes these studies included an evaluation of the effectiveness of the access points provided to users. Stark [70] describes the result of a survey on e-journal provision carried out at the University of Bath. The library adopted a multiple access approach, including e-journals into alphabetical and subject/department lists generated from a database, and into the catalogue. The survey results showed that, while the A-Z title list was the overall preferred method, part of the users wanted to see direct links from the catalogue records to e-journals.

This finding confirmed that users required multiple channels to access e-journals, because users in some disciplines were more familiar with using a Library catalogue rather than the web for finding information. A similar survey, conducted at the University of Leicester to explore the acceptance and use of e-journals by research staff [71] found that one of the prominent barriers for users was the lack of information about the available titles. The policy followed for promoting e-journal access was one of offering multiple access points, through the catalogue and a web lists of publishers/suppliers. However, many users did not realise that e-journals were in the OPAC, and e-journal holdings were not evidenced in the catalogue records. Awareness of the service improved when, on the basis of the survey results, the library made available subject lists of e-titles on the Web site. The study concluded that a multiple access approach and improved training and promotion were the way to increase user acceptance and awareness. Conversely, at the Cardiff University the multiplicity of access points to e-journals - a separate database, subject lists maintained by the information specialists in academic departments, and the catalogue - were found as engendering confusions in users, who complained that it was difficult to understand how to get the e-journal that they wanted [72]. The e-journal database was found to be by far the prominent method used, followed by the Department lists and the OPAC. However, promotion of the service and training for accessing e-journals would have to be improved. Similarly, the library of the University of the West of England decided to improve promotion and training activities to increase awareness and use of e-journals [73]. The University was providing access through a library's e-journal Web page, in which the titles were organised alphabetically and by subject. The study found that this site was largely underused and that awareness of the service was low. Monopoli et al. refer about a survey carried out at the University of Patras to collect data on e-journal use [74]. Access to the licensed titles were organised through a Web service offering search and browse facilities, with an online help module that provided instructions to users. The survey revealed that e-journals were largely utilised, particularly by academic and research staff. E-journal users did not indicate that they had problems with searching the e-journal service. Although their search abilities seemed to be low, they were unlikely to turn to the online help function to gain support. An investigation undertaken at the University of Georgia about the journal reading preferences of social science and science faculty members, showed that the first method used by faculty members to find a full-text article was searching their personal collection, followed by using bibliographical databases with links to full-text, and by using the libraries' electronic journal title list [75]. Although the electronic journal list was only the third choice of faculty members, the finding was considered a positive feedback for the University libraries' strategy: over half of the respondents used the list, and readers from both disciplines read a significant portion of journals in electronic format.

Although these studies investigated different groups of users and disciplines, and analysed very different contexts of library provision services, they showed that the low use of e-journals is connected with an ineffective and problematic discovery of titles and an insufficient promotion and training.

3.6 Conclusions

The review of the professional literature about the organisation of e-journals and their integration in the other electronic/printed resources showed that technology is continuously evolving and offers many solutions to provide users with points of access to resources. The debate about the effectiveness of traditional cataloguing in giving users the information they need for finding the relevant resources and accessing them easily is still lively among librarians. However, the studies undertaken seemed to suggest that both a traditional access through the catalogue and an innovative access through Web lists or Web-based search tools can be effective. E-journal use studies have discovered that from the users' perspective a method of accessing e-resources is found to be easy when is similar to the conventions of the library and familiar to them. Moreover, there are differences in research attitudes among the various disciplines. This seems to suggest that it is more important to concentrate on the habits of research and specific information needs of users, and on the local provision of library services, than considering only the technologies available at any time. Librarians engaged in organising e-journals should clarify their approach by considering a number of aspects. First of all, organising e-journals is not only a matter of presenting and describing the titles, but also of highlighting the relevant resources, giving guidance and support, and enabling users to find the connections among the different resources. Consequently, the presentation of resources is only one aspect of the service, and there must be cooperation among cataloguers, acquisition staff, technical and reference staff. Moreover, users do not like sophisticated systems that are not easy to learn and tend to behave according to the least effort

principle, preferring systems that are familiar to them. Finally, the adopted approach, if not effective in meeting the users' requirements, can decrease awareness of the service and cause a low use of it.

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4 METHODOLOGY

As the purpose of the research was to understand the users' perceptions of the methods available to them for discovering and locating e-journals and their expectations on this area, the methodological approach was mainly qualitative and used a combination of multiple techniques suitable to in-depth investigation of user behaviours.

4.1 The case study approach

A single exploratory case study was built up, with a focus on a group of library users at the University of Parma. Many qualitative researchers highlight that case studies are highly appropriate to produce in-depth explorations, descriptions and explanations of phenomena studied in real-life contexts, where situational conditions and relationships are not known in advance or controlled. Within this research framework the case study method may offer insights that might not be achieved with other approaches [1].

In the context of the present research, this approach was suitable to a single and first-experience researcher, with limitations and constraints in time and financial resources. Even single-case studies can yield reliable findings and contribute to theory building if carried out with methodological quality and rigor [2]. In the context of the present research validity and quality of the findings were sought for by using triangulation of research methods and data sources, to ensure credibility and confirmability of the results [3]. Information was collected through the following techniques and sources:

Research techniques	Data sources
Focus group	Librarians
Observations	Faculty members Students
Interviews	Faculty members Students
Questionnaire	Faculty members Students

Confirmability and dependability of the findings were also sought for by keeping a reflective journal and by piloting the research tools. In order to increase the transferability of the results to similar contexts it was decided to provide details of the data collected and in-depth description of the findings.

4.2 Research techniques

The following section describes the data collection techniques used in the research, the advantages and limitations of each tool in that context, the design of the data collection process, and the analysis of the data. The selection of the techniques was based on the research questions and objectives.

Correlation of research techniques and study objectives was achieved as follows:

Research objectives	Research techniques
To identify the users' perception of the currently available methods for discovering and locating e-journals	Interviews, questionnaire, observations
To identify the users' expectations on a system that facilitate discovery and access to full-text journals	Interviews, questionnaire, observations
To interpret the above in terms of an effective organisation of e-journals	Focus group, literature review
To explore the implications for librarians engaged in electronic information service delivery	Focus group, literature review

4.2.1 Focus group

4.2.1.1 Purpose

Although the group of users under study was homogeneous because it belonged to the same discipline, nevertheless it was administratively dispersed in four Departments and five differently organised libraries. An exploratory investigation involving the librarians working in this area seemed suitable to identify the salient issues for future questioning, and to define the contextual aspects, such as the provision of traditional library services, which could influence the users' attitude towards e-journals. The focus group with librarians was planned with the purpose of:

- Defining the user population more accurately
- Obtaining a preliminary assessment of users' attitude towards e-journals
- Evaluating the effectiveness of the e-journal organisation for the group of users under study
- Discussing key issues of e-journal access
- Articulate a vision for future developments and improvements

It was also expected to obtain through the focus group the librarians' cooperation for the future identification of individuals for face-to-face interviews, and to collect information useful to the selection of the library where to carry out the observations.

4.2.1.2 Advantages for the present research

Focus groups are often utilized for the initial or exploratory phase of a research project, in order to arrive at a better understanding of the context under study and to assist in question framing for interview schedules and questionnaires [4]. In the context of a multimethod research, this technique is especially useful if linked to individual interviews, as it can reveal the range of the future informants' thoughts and experiences prior to the first individual interview [5]. Furthermore, focus groups can provide useful information for the selection of a site for participant observation. In combination with questionnaires, this technique can contribute to the creation of survey items, capturing all the domains that need to be measured, determining the dimensions that make up each of these domains, providing item wording.

Focus group interviews have successfully been used in a variety of ways in libraries, especially for determining expectations, evaluating performances and identifying areas of satisfaction and dissatisfaction. The use of focus groups in studies on e-journal use is widely present in the literature [6]. This technique is considered particularly appropriate for investigating a group of people working together about their perspective on a research problem. Focus group meetings enable researchers to collect a variety of perspectives and explanations from a single session and facilitate interaction of participants [7].

4.2.1.3 Limitations

The major limitation of focus groups, which is particularly challenging for an inexperienced researcher, is that this technique requires greater skills from the moderator than individual

interviewing. As well as asking appropriate questions and being a good listener, the focus group moderator should encourage interaction, ensure that everybody participates in the discussion, and understand the group dynamics. The moderator should remember that a dominant member or the existing relationships between participants could influence responses. Moreover, the focus group could experience the pressure to conformity and yield quite irrelevant data [8]. Like face-to-face interviews, focus groups too are limited to verbal behaviour and self-reported data, but they provide less depth and detail about opinions than an individual interview. The constraints of the technique were addressed through careful preparation and design. In order to facilitate the researcher to focus on the topic of interest and to encourage the group's interactions, it was decided to involve an assistant moderator.

4.2.1.4 Selection of participants

Five librarians from the libraries of Philosophy, Classical and Medieval Philology, Cultural Heritage, Literature and Philosophy, and History, were invited to participate in a focus group meeting about the organisation of e-journals from the point of view of their users. When there was only one professional librarian in the staff the selection of the participant was easy. In the other cases, it was decided to invite the reference librarian, who was supposed to have a deep knowledge of users' research behaviour. Potential participants were previously contacted by telephone in order to illustrate the purpose of the research, to check their willingness to attend the meeting and to propose a suitable date. Then a formal convocation was sent by e-mail (see Appendix 1).

4.2.1.5 Design

Exploratory focus groups are often directive, with purposive and quite structured questions, but open-ended. The high level of moderator involvement should help to keep the discussion concentrated on the topics that interest the researchers rather than extraneous issues. Furthermore, fostering consistency in questioning should improve data analysis [10]. This approach was considered the most suitable for the research, considering the limited experience of the researcher as focus group moderator and the interest in collecting focused information. As the topic of the discussion was supposed to be quite new for the participants, the structured interview seemed useful for providing inputs and guiding the discussion. The questioning route was designed to include a limited number of questions, the first ones more generic and introductory, with the aim of stimulating interests in the participants and facilitating individual involvement, the following ones focused on the topic of the research (see Appendix 2). It was decided not to ask direct questions about the initiatives undertaken to promote e-journals or to contribute to the organisation of the resources, because the participants could feel they were being evaluated. However, these topics were touched upon during the discussion. The meeting was planned to last around one hour and a half. The discussion was recorded with a tape-recorder in order to eliminate the risk of omissions or misunderstandings. However, the assistant moderator was in charge of keeping notes, with the aim of facilitating the transcription and better recognising the different speakers. She was also asked to control the tape-recording during the meeting.

4.2.1.6 Location

The Literature and Philosophy library's seminar room was selected as the most suitable place for the focus group. It is a quiet room not far from the other libraries, where tables and furniture can be easily moved. Before booking the room the researcher made a recording test and decided to dispose the participants around a table, with the moderator sitting at one of the short sides. This arrangement was supposed to enable the moderator to control that all librarians would participate in the discussion.

The focus group meeting took place on March 3rd, 2003 at 11.30 a.m. All the invited librarians were present. The meeting begun with a short introduction of the research topic by the moderator, after which the discussion developed on the basis of the questioning route and lasted for one hour and a half.

4.2.1.7 Analysis

The focus group analysis started immediately after the end of the meeting. The moderator and the assistant moderator wrote individual notes about their first impressions and interpretations, and the day after they met to compare the results. After the transcription of the discussion recording, the

researcher read the answers and wrote a descriptive summary for every question. Then, she analysed the answers to the various questions, grouped together the similar themes, then coded the sections and developed categories [11].

4.2.2 Observations

4.2.2.1 Purpose

As one of the objectives of the present research was to evaluate the effectiveness of the methods adopted at Parma for enabling users to discover and locate e-journals, observation was considered as the appropriate technique to:

- gather objective information about the users' approaches to locating e-journals
- evaluate the effectiveness and ease of use of the UP Libraries e-journal Web site
- assess the user preferences between the OPAC and BibEl as points of access to e-journals
- identify key issues in this area for future face-to-face interviews

4.2.2.2 Advantages for the present research

Observation is widely considered a good technique for looking at user's behaviour and capturing the live interaction between individuals and information systems. Through this technique the researcher has the possibility to move beyond the selective perception of people and obtain a direct, objective and unfiltered view [12]. Observation is often recommended in combination with interviews and questionnaires: while interviews and questionnaires are suitable techniques to explore the subject's view of their actions, with observation the researcher reports the user's external behaviour and the issues that may escape conscious awareness or that people may be unwilling to talk about [13].

Observation has been successfully used in user-centred usability tests of Web sites and information systems. These tests rely on observing how a small number of users interact with a Web site or a prototype, and combine observational data with data from inquiry methods, such as interviews, focus groups and questionnaires [14]. Observation seemed a technique particularly suitable for the present research, one of its objective being to assess the usability of the UPL e-journal Web site: did the site enable users to achieve their goals and meet their needs, and did it make possible for users to work easily, efficiently and with a few errors?

4.2.2.3 Limitations

Close examination of studies in qualitative research revealed that the status of the observer imposes a threat to the inexperienced researcher. Although Eager and Oppenheim define this technique as objective, they note that participants may be influenced by the presence of the observer and behave in some atypical fashion [15]. The observer may affect the situation being observed, distort the data through their selective perception and record unreliable data. One of the most relevant disadvantages of this technique is the difficulty of accurately recording and interpreting events and people's behaviours. Furthermore, observation is a time-consuming technique and is frequently undertaken on a small-scale basis, so it is difficult to generalise [16].

Following Patton's suggestion, the limitations of the technique were addressed through a rigorous preparation, piloting, and the development of a framework to guide the observations and to improve the accuracy of the test [17]. Observations were combined with interviews in order to strengthen the research credibility.

4.2.2.4 Selection of participants

As shown by the literature on observation, this technique relies on recording the behaviour of a small number of users. In the context of usability tests, relatively few users need to be observed to identify problem areas. According to Nielsen, with a homogeneous group of users, the responses from as few as five individuals can provide 85% of the feedback that would be obtained from an unlimited sample [18]. Only in the presence of several highly distinct groups of users there is a need to test additional users. In the present research, the users under study could be defined as a homogeneous group by discipline. However, the focus group with librarians revealed that students and faculty members in Classics and Medieval studies had different information needs and different attitude towards electronic resources. As a consequence, it was decided to test 3-4 users from each group. Potential participants were to be approached and invited to take part in the research.

4.2.2.5 Test design

Considering the issues to be investigated and the context of the research, it was decided to adopt an unobtrusive and overt approach to observation, where participants would be aware of being observed and the researcher would not interact with them, but rather would record the events [19]. Although overt observation could pose some limitations, as people might behave differently when they knew they were being observed, this was the only possibility in a context where the use of e-journals was supposed to be extremely low. The investigator could not gather useful data from the daily use of the library, but would have to approach the users and ask them to search for an e-journal.

During the test the participants used the Libraries Web site interface to perform a specified task while the researcher observed, noting the choices that were made, where mistakes occurred, and so on. In order to gather richer data, users were encouraged to “think aloud” while performing these tasks. All users were asked to perform the same task: to discover if the periodical *Mnemosyne* was accessible on-line for the users of the UP libraries. The behaviour recorded was any action taken in order to access the title. *Mnemosyne* was available in electronic format through two different providers: PCI Full-text for issues from 1948 to 1990 and Ingenta for current issues from 2000. Access to both providers was possible through the OPAC and the e-journal Web site. Participants were given a maximum of five minutes to answer the question. At the end of the tests users were invited to give their perspectives about their own behaviours.

In order to increase the accuracy of observation, the researcher developed a form for field notes with two separate sections for recording the description of the observed behaviour with direct citations from people, and the feelings, reactions and first interpretations of the observer [20] (see Appendix 3).

4.2.2.6 Pilot test

A pilot test was conducted with two users with characteristics similar to the investigated group. The pilot phase was useful to improve the observer skills and highlighted the need to carefully explain to the participants that the test was not about their skills on locating e-journals but on the system, so that they would feel more comfortable with the test.

4.2.2.7 Location

Observations took place at the Library of Classical Philology between April 8th and 9th, 2003. The discussion with librarians had revealed that this was the library where most activities for promoting e-journals were done. Furthermore, it seemed easier to organise the test in the researchers’ workplace, where the probability that participants would agree to be observed was supposed to be higher. Potential participants were approached and asked to take part in the research. Seven users agreed to participate, four students and three faculty members.

4.2.2.8 Analysis

Much of the analysis was based on the path followed by users and on the comments made during the “think aloud process” and at the end of the test. The investigator observed also users’ facial expressions and body language. All the notes were analysed to identify thematic units, events, behaviour, feelings, and interconnections between separate observations.

4.2.3 Interviews

4.2.3.1 Purpose

As one of the objectives of the present research was to explore the user perceptions and expectations in the field of the possible methods to discover and locate e-journals, in-depth interviews with faculty members and students were considered a suitable technique to:

- Explore the methods to find journal literature used by the group of users under study
- Assess use and non-use of e-journals
- Explore their attitude and opinions about e-journals
- Explore their perception of the e-journal discovery system available at the UP libraries
- Understand their expectations for a discovery system respondent to their research habits

Interviews were also expected to provide the basis for the identification of salient issues and variables to be investigated among a larger population through a questionnaire.

4.2.3.2 Advantages for the present research

Interviews are considered as one of the most important sources of information in qualitative research [21]. Nicholas notes that this is the best technique for the researcher interested in user information needs or behaviours, because it allows the investigator to discover unexpected and not asked themes, and provides information about the non-use of services and resources. Moreover, data can be collected in the words of the people interviewed and the researcher has large opportunities to question, explain, and reflect [22].

The professional literature offers many examples of the use of interviews to study the user behaviour towards e-journals [23]. In these studies interviews were often used in combination with questionnaires, and proved useful because they allowed asking open-ended questions, preventing misunderstanding, exploring causation, and understanding the reasons of people's behaviours.

4.2.3.3 Limitations

Interviews are considered as a user-centred method useful to investigate customer behaviour from a qualitative point of view, but they present the limitation of relying solely on users' own accounts. This technique yields significant findings on what are the user expectations on e-journals, but is not appropriate to investigate how users really work with e-journals [24].

As interviewing is a time consuming technique, in the context of a research conducted by a single interviewer it was impossible to question a large number of respondents. This posed the issue of selecting an appropriate sample. A careful preparation is required from the interviewer when asking questions to people, because their personality might affect the quality of information. Interviews usually sort large amounts of data, which are difficult to manage and are susceptible to errors in interpretation [25]. Thus, the analysis process was expected to be particularly challenging for an inexperienced researcher.

In order to overcome the weaknesses of this technique, it was decided to use triangulation of interviews, observations and questionnaires. An accurate selection of the respondents and a careful preparation and piloting were conducted to increase the accuracy of the data collection.

4.2.3.4 Selection of respondents

For the purpose of the research, interviewing a number of different people was judged as a strategy to gain a variety of perspectives. Oppenheim states that for in-depth interviews it is helpful to have a good spread of respondent characteristics, but not necessarily representativeness [26]. The sample selected was small but purposive, including representatives from within the population being studied who had a range of characteristics relevant to the research project, such as being active in research, having a positive attitude towards computer technologies, having experience with electronic information resources or e-journals, being users of journal literature, and showing an overt and collaborative attitude. Eleven possible respondents were identified with the support of the librarians who participated in the focus groups. They included only two undergraduate students, because the previous investigations had revealed that students were not likely to use journal literature at least until the preparation of their dissertation. Potential respondents were contacted by e-mail or by telephone and asked to participate in the research. They were informed about the topic of the interview and its likely duration, and were given assurance of absolute confidentiality of the conversation. All eleven people agreed to be interviewed, but unfortunately for two of them it was not possible to fix a date. At the end nine persons were interviewed, five faculty members, three graduate students, and one undergraduate student.

4.2.3.5 Design

The first step in the design process was the definition of a set of issues to be investigated through questioning. These themes were developed by reviewing the literature, and by the focus group and observation analysis. The initial list included the following themes:

- Use of e-journals
- Factors influencing use and non-use
- Awareness of e-journals

- Frequency of use
- Methods adopted for locating printed journals
- Methods adopted for locating e-journals
- Perception of the discovery system available to them (easy of use, problems, experiences)
- User expectations on the e-journal service
- User expectations on the points of access to e-titles

Non-structured interviews are considered a qualitative methodology, useful to gather information about attitudes, opinions, facts and examples. Non-structured interviews have a flexible and unstructured format. As Gorman and Clayton state, “here neither the exact wording of the questions nor the answers have been predetermined, although it is usual to have a set of questions or interview guide prepared as a starting point” [27]. This approach was considered the most suitable to the purpose of the research.

Patton [28] identifies three basic types of unstructured interviews:

1. The informal conversational interview, which is the most open-ended approach to interviewing and where there is not a set of predetermined questions
2. The general interview guide approach, where the researcher identifies a list of issues to be explored during the interview, but questions are worded spontaneously
3. The standardised open-ended interview, where the exact wording and sequence of questions is decided in advance and each person is asked essentially the same questions

In order to maintain a consistent register, facilitate comparison and analysis of data, and assure flexibility and individualisation, it was decided to adopt a mixed approach, combining the standardised approach with an interview guide. The researcher designed a number of basic questions worded in a predetermined fashion, but also identified further subjects to be explored in greater depth and let herself the possibility to undertake new areas of inquiry.

4.2.3.6 Construction of questions

The issue of establishing a successful communication with respondents was particularly critical for the present research, aiming at exploring a technical and specific area within the e-journal service. The risk of incurring in misunderstandings, because of the use of inaccurately constructed questions or the use of ambiguous words, was supposed to be high [29].

Great care was employed in defining what kind of responses were required, in ensuring that the questions that were asked were relevant to the researcher’s objectives, and that the respondents had the required information and were able to communicate it. Questions were designed to begin with present behaviour, activities and experiences and then to explore interpretations, opinions, feelings and speculation about the future. In question construction a great effort was made in using open-ended, neutral, and clear questions, avoiding jargon and adopting a language that was understandable to respondents [30].

Two pilot interviews were conducted with one researcher and one faculty, who were no part of the proposed population. The purpose of the pilot interviews was to ensure that all the relevant aspects had been noted, and to check the users’ understanding of technical words such as OPAC, database, localisation, access, etc. The set of questions that formed the final guide for the interviews is in Appendix 4.

The nine interviews were carried out between May and June 2003, part in the researcher’s office, part in the interviewees’ offices, part in the library. Conversations lasted about forty minutes. All conversations were recorded by using a tape recorder, but at the same time the interviewer took notes. All interviews were integrally transcribed in order to keep the exact quotations of respondents. After every interview the researcher wrote some observations and interpretations about the conversation.

To maintain a chain of evidence, the researcher kept note of the interviews done, recording the names of the interviewed people, their status, date and time, and reference to cassette number.

4.2.3.7 Analysis

The analysis process began immediately after the first interview and continued during the interview phase of the investigation. The investigator examined the transcriptions, categorised, developed codes, and recombined evidence to address the research questions and objectives, and conducted cross-

checks of facts and discrepancies in accounts. Portions of information generated from data were then examined in the light of the previous e-journals use studies and of the theories on the organisation of e-journals [31].

4.2.4 Questionnaire

4.2.4.1 Purpose

A questionnaire survey was carried out among faculty members, graduate and undergraduate students, with the purpose of:

- Assessing the use and non use of e-journals
- Identifying the factors affecting use and non-use of the service
- Identifying the method used for accessing e-journals
- Identifying the users' opinion about the properties that would make e-journals valuable for them
- Identifying the users' opinion about the most useful points of access to e-journals.
- Discovering relationships between patterns of use and preferred method of access

4.2.4.2 Advantages for the present research

Questionnaires are considered a relatively inexpensive and easy way of collecting data from a large population [32]. In association with interviews, this technique is useful to provide further evidence to support the findings of interviews with quantitative data and help the researcher to discover relationships and associations within the themes identified. For the present research, the questionnaire was the only possible technique to gather quantitative information about the use of e-journals. Several examples of questionnaires for evaluating the use of e-journals can be found in the professional literature [33]. Sometimes these e-journal use studies rely on questionnaires as the unique technique of data collections, but more often they combine different techniques.

4.2.4.3 Limitations

According to Nicholas, questionnaires are useful to gather quantitative data, but it can be very difficult to design a good questionnaire and response rates can be very low [34]. Inadequate design can often lead the researcher to false and misleading conclusions. Furthermore, questionnaires can rarely allow proving causal relationships and tend only to cover what the respondent thinks it happened, not what actually happened, and to describe the ideal situation, not reality [35].

Technique limitations were addressed through accurate design and testing, and combining the questionnaire with interviews and observations.

4.2.4.4 Selection of the sample

On the basis of the size of the population under study, it was decided to address all faculty members and graduate students, excluding the persons who had been contacted for the interviews, and a representative sample of the undergraduate student population. The list of faculty members included 28 persons from the departments of History, Classical and Medieval philology, Philosophy, and Cultural Heritage. For most of them it was possible to identify the e-mail address. The list of graduate students in the area under study was collected directly from each department. Unfortunately for three students it was not possible to identify an e-mail or postal address. The final list included 18 names.

The most difficult stage was the selection of a representative sample of the undergraduate student population [36]. Because of the complex mechanisms which rule the construction of students' individual curricula, it was impossible for the researcher to identify among the students enrolled on the courses of the Literature and Philosophy faculty the curricula focused on Classics and Medieval studies. As one or more units in Classics or Medieval disciplines are usually present in many of the courses of the Literature and Philosophy faculty, the entire undergraduate student population would include all the students in Modern literature, Ancient literature, Cultural Heritage, Philosophy, Communication studies, Art and Archaeology, and History. This would make a population of 3064 students.

It was explored the possibility to send the questionnaire to all the Literature and Philosophy students and then to select only the responses from the students in Classics and Medieval studies. This strategy was theoretically possible thanks to the UP student e-mail service, which at the beginning of

2003 has provided all students with a personal e-mail address on a University mail server. However, a few interviews with students revealed that only a minimum percentage of them were using this service. As the risk of reaching no one was judged to be high, it was decided to abandon this strategy. As time and costs constraints prevented from sending postal questionnaires to all students, it was finally decided to send the questionnaire to a sample of students, inclusive of students registered for the exam summer session in Classics and Medieval courses. In the Italian universities students who have attended a course and want to take the exam have to register in advance. The UP, as many other universities, has developed an online procedure on the Web site for exam registration. The researcher obtained permission to access the student registrations records in order to select individuals for the questionnaire. In this way it was possible to question just a sample of the students who had just attended a course in one of the disciplines under investigation and were studying for doing their exams. They were expected to be reliable sources of information about the use of e-journals for their studies. Furthermore, it was possible to reach students of different courses and ages. As only part of the students included their e-mail addresses in the exam registration data, the sample included 179 students.

4.2.4.5 Method of data collection

Oppenheim states that postal questionnaires have the advantages of low costs of data collection and processing, and enable the researcher to reach respondents who live at widely dispersed addresses [37]. However, postal questionnaires generally have low response rates, which can bias the findings, and do not allow the researcher providing explanations and correcting misunderstandings. In the present research the questionnaire was sent by e-mail. The danger of having a low response rate was supposed to be high, also because previous collected information showed that knowledge and use of e-journals were low among the population under study. In particular students were supposed not being likely to use the service.

In order to increase response rates it was decided to include a letter of introduction to the questionnaire, and to send a reminder.

4.2.4.6 Design

Through analysis of work done previously through observations and interviews it was possible to identify the following list of variables to be measured:

- Use of e-journals
- Awareness
- Training/support
- Methods used for identifying and locating e-journals
- Advantages of the service
- Disadvantages of the service
- Reasons for non-use
- Expectations about the service
- Expectations about the points of access

As in-depth descriptive information was gathered through face-to-face interviews, only closed questions were included in the questionnaire. It was decided that measurement of peripheral variables would be accomplished with check-list questions, with the possibility for respondents to add other items. Key variables requiring a more complex approach were measured with scale items [38].

Care was taken in order to formulate questions from a user point of view, avoiding technical words, jargon, abbreviations and acronyms [39]. Some questions were introduced with one or two sentences in order to make them more understandable. The order of questions followed the internal logic of the inquiry.

Three pilot questionnaires were sent to two students and one faculty member, who were no part of the proposed population. The purpose of the pilot phase was to ensure that it was easy for respondents to answer the questions, that the meaning of words was understandable, and that there were no problems with the delivery of the form as e-mail attachment. As a result of the pilot phase, it was decided to change the wording of some sentences in the faculty member questionnaires, as they were felt to be a bit rude. Some statements were removed from multiple choice questions, because too

obscure for respondents, and the ‘don’t know’ category was added to the scale items, to ensure that respondents would not be forced to express an opinion about unclear topics.

Appendix 5 and appendix 6 show the final questionnaires for students and faculty members.

The questionnaire was sent by e-mail on May 6th to 179 undergraduate students, 18 graduate students and 23 faculty members. The delivery to seven undergraduate students and one graduate student e-mail addresses was unsuccessful, while 5 additional questionnaires were sent by internal post to faculty members whose e-mail address was unknown. This made a final sample of 172 undergraduate students, 17 graduate students and 28 faculty members. All questionnaires were sent as attachment to an introductory letter stating the purpose of the research and giving instructions for the return of the filled-in questionnaires (Appendix 7 and 8). Respondents were asked to return the questionnaire by June 26th. Ten days before the deadline a reminder letter was sent (Appendix 9 and 10).

4.2.4.7 Response rate

A total of 58 persons responded to the questionnaire, which makes an overall response rate of 26.7%. Table 3 shows the response rates for each group of users. A low response rate for this type of investigation was not considered unusual if related to the limited range of e-journals in the discipline under study and to the response rates reported for Humanities faculty in previous e-journal use studies [40]. The highest response rate (76.5%) was from graduate students, followed by faculty members (35.7%) and then undergraduate students (20.3%). While the surprisingly high response rate from graduate students may suggest a great interest and willingness in sharing their experiences and opinion, the disappointing number of questionnaires returned by undergraduate students seemed to indicate that the technique adopted to contact them was not very effective.

	Sample	Respondents	%
Faculty members	28	10	35.7
Graduate students	17	13	76.5
Undergraduate students	172	35	20.3
All combined	217	58	26.7

4.2.4.8 Characteristics of the sample population

The questionnaire respondents were asked to give some information about their status. Undergraduate students were asked the course and year of attendance. Graduate students and faculty members were asked about the field of research and the years of experience in research. The results are shown in table 4-8.

Field of research	Frequency
Medieval philosophy	1
Medieval history	1
Ancient history	1
Greek philology	1
Classical philology	1
Latin literature	4
Classical antiquity	1
Total	10

Table 5
Faculty members' years of experience in research

Years	Frequency
1 to 14	2
15 to 29	5
Over 30	3
Total	10

Table 6
Graduate students' fields of research

Field of research	Frequency
Classical Philology	5
History	4
Medieval History	1
Latin Philology	1
Art History	1
Not specified	1
Total	13

Table 7
Undergraduate students' course of study

Course name	Frequency
Cultural heritage	15
Art and archaeology	5
Literature and philosophy	6
Classical literatures	2
Modern literatures	2
Written and hypertext communication	1
Philosophy	1
Not specified	3
Total	35

Table 8
Undergraduate students' year of attendance

Year	Frequency
1st	2
2nd	5
3rd	6
4th	4
5th	6
6th	4
7th	4
Not specified	4
Total	35

4.2.4.9 Analysis

For the analysis of quantitative data collected through the questionnaire, answers to closed questions were processed through Excel, converted into numerical form and then turned into percentages, tables and figures. The items added by the respondents through the 'other' option were coded [41]. The findings were examined in the light of the results of the focus group, the observations and the interviews, and examined in the light of previous e-journal use studies, to develop the descriptive framework of the case study.

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5 FINDINGS

5.1 Use of electronic journals

“In the field of Classical Philology there are few titles freely available on the Web and I’m used to access them. That’s all about e-journals.”

Faculty member

E-journals did not seem to be as yet an obvious information resource for the group of users under study. The interviewed people revealed that locating journal literature essentially consisted in locating printed journals in their library or searching the articles unavailable at Parma in other library catalogues and then asking them to the Document Delivery service. They turned to the e-journal service as a ‘last resort resource’ for items that they did not find in any library catalogues or that appeared difficult to access. Out of the seven people who participated in the e-journal Web site usability test, only two users said having accessed e-journals before.

But this picture seemed to be likely to change, and some people are beginning to recognise the importance and convenience of using e-journals:

“... this is the most important thing among the electronic tools: not only to know what has been published about a topic, but also to have the text directly from your computer. I see that now there are several electronic journals in our area, which before were not available. Recently the catalogue of Kluwer has been acquired. There are many things, also in Blackwell Science ... and of course I use them.”

Faculty member

The data gathered through the questionnaire about this subject were rather enlightening. Asked to indicate whether they did or did not use e-journals for their study or research activities, eighteen respondents (31.0%) indicated that they used e-journals, while forty (69.0%) that they did not (Table 9).

	Total responses	No. using e-journals	%
Faculty members	10	8	80.0
Graduate students	13	6	46.2
Undergraduate students	35	4	11.4
All combined	58	18	31.0

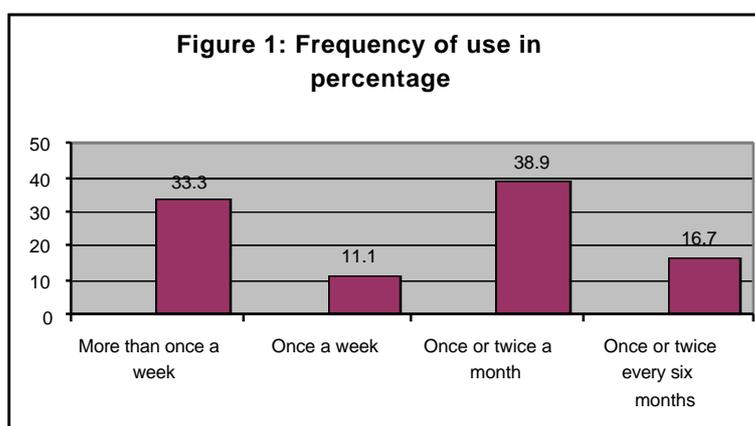
A breakdown of the user figures showed a large difference in e-journal use by the faculty members (80% of users), the graduate students (46.2% of users) and the undergraduate students (11.4% of users). The greatest factor affecting e-journal use seemed to be whether the respondent was engaged in research. A similar difference in usage by respondent status was also discovered at University of the West of England [1] and at the University of Patras [2].

Several resources were often cited during the interviews, but the most relevant titles seemed l’Annee Philologique and BHI, which are the prominent online indexes in the areas of Classics and Art studies. As these indexes are periodically issued and stored with journals in the libraries, the respondents considered them as journals. Three faculty members revealed using also Bryn Mawr Classical Review, a review journal in Greek and Latin Classics that is freely available in electronic-only format. Two graduate students mentioned that they accessed PCI Full-text and one philosophy researcher revealed using the e-title collection of Kluwer and Blackwell Science. Other titles mentioned were Zeitschrift fur Papyrologie und Epigraphie, Histos and Scrineum. The last two titles, which are free electronic-only journals, did not appear included neither in BibEL nor in the OPAC.

The patterns of use described by the scholars and students interviewed were very different, including statements such as ‘from 10 to 15 times in the last month’, several times a month’, ‘only once since I have started my studies’, and ‘never in the last month’. This variation was widely confirmed by the questionnaire results. Asked how frequently they used the service, with the question framed in terms of time scale such as ‘more than once a week’, ‘once a week’, ‘once or twice a week’, ‘once or twice a month’, ‘once or twice every six months’, the respondents did not divide along simple lines of frequent and infrequent users (Table 10).

	All combined	Faculty members	Graduate students	Undergraduate students
More than once a week	6 (33.3%)	4 (50.0%)	1 (16.7%)	1 (25.0%)
Once a week	2 (11.1%)	0 (0.0%)	1 (16.7%)	1 (25.0%)
Once or twice a month	7 (38.9%)	4 (50.0%)	1 (16.7%)	2 (50.0%)
Once or twice every six months	3 (16.7%)	0 (0.0%)	3 (50.0%)	0 (0.0%)

However, the values of the less frequent use ‘once or twice a month’ and ‘once or twice every six months’ represent 55.6% of all e-journals users as against 44.4% of the more frequent use categories ‘more than once a week’ and ‘once a week’ (Figure 1).



Specifically, faculty members appeared as the most frequent users, with half of respondents who used e-journals ‘more than once a week’. Conversely, graduate students were the most infrequent users, with half of respondents using the service ‘once or twice every six months’. Among undergraduate students, half used e-journals ‘once or twice a month’, while the remaining 50% was shared out between ‘more than once a week’ and ‘once a week’. The patterns of use appeared rather low if compared with the data reported in recent studies on the use of e-journals [3]. However, these studies included a wider range of disciplines with a larger number of e-titles. Considering the current limited offer of e-titles in the Classics and Medieval studies at Parma and the secondary role that journal literature traditionally plays in the humanities, the results appeared quite significant and might indicate that the range of e-titles was little but relevant for users.

Surprisingly, there was a gap between the librarians’ perception of e-journal use and the perception of faculty members and students. All librarians participating in the focus group meeting expressed the belief that no faculty member or student was likely to use e-journals:

“It never happened to me that a student or a faculty asked information about the e-journal locator or about how to use e-journals, they are completely unaware of them.”

“Once two students asked me for a journal that was not in the library, and at the end I showed that it was available in electronic form and I printed the article. They looked at me as I had worked miracles! With faculty it’s the same, I believe that they don’t think about searching for full-text.”

Responses given by library staff were based on their perception of the users’ behaviour, while the responses given by faculty members and students were based on their perception of their own behaviour. This gap could be explained by the fact that the end users often access e-journals from locations that are not under librarians’ control, for instance the scholars’ offices or the computer laboratories, and therefore librarians may not have a right perception of the e-journal service use. However, it could also be possible that users had somewhat emphasised the use of e-journals in their descriptions. This point should be studied in more depth and validated through objective data, such as analysis of log file or statistical data about e-journal usage, which unfortunately were not available at the time of the research.

5.2 Barriers to use

The librarians participating in the focus group were persuaded that non-use of e-journals was caused more by lack of awareness and by the low number of relevant titles rather than by lack of technical skills or conservatism. These two factors explained why e-journals did not represent an alternative to printed journals for the group of users under investigation.

“The use of e-journals is non-existent. This is for two reasons: first of all humanities are under-represented in the UP libraries collection, and what is available is not known”.

“...the use is easy, the problem is how to arrive at discovering them.”

This picture was partially confirmed by the data collected through the interviews and the questionnaire. Faculty members and students were asked what aspects prevented them from using e-journals, and what problems they encountered in using the resources. The factors were then measured in terms of relevance through the questionnaire, and comparisons were made between the barriers perceived by users and non-users of e-journals. In the first part of the questionnaire, respondents who revealed not using e-journals were asked to indicate the reasons, by selecting, through a multiple choice, from a list of suggested items. People were free to add new items. In a following section of the questionnaire, respondents who revealed using e-journals were asked what problems they found with the service, selecting through a list of items. It was possible to select more than one item. There was also the ‘other’ option, where users could indicate any other factor. The emerged picture appeared quite complex, and several factors were found to influence the attitude towards the service of users and non-users. All these factors are described in the following section.

5.2.1 Unawareness about e-journals

The interview respondents’ awareness of the e-journal service seemed very low. One faculty member and two students revealed that they never heard about the possibility to access articles from the computer desktop. One faculty member was convinced that this possibility was offered only to scientific researchers. Two students, who once accessed a full-text article, did not explore the service to search for other titles. Surprisingly, also the two respondents who claimed to be informed about e-journals were found during the interview to be unaware of several resources available for the UP users. One faculty member, who participated in the usability test describing herself as expert in electronic resources, at the end of the test showed her surprise in finding that the back issues of ‘Mnemosyne’ were available in electronic format. Most respondents felt that their information was incomplete:

“I’ve never realised that this service of e-journals was available”.
Undergraduate student

“I don’t know if apart from PCI there are other sites where one can find the full-text of articles ... I don’t know about other sites because I was only informed about that particular service.”

Graduate student

“I don’t know e-journals in my discipline, but perhaps it’s my fault. My opinion is that in our disciplines the development in this direction is really lagging behind ...but perhaps I’m not informed ...”

Faculty member

Among the users who participated in the usability test, the ones who had never used e-journals before were not even aware of the service.

This evidence was widely confirmed by the questionnaire findings. Table 11 summarises the reasons for non-use indicated by faculty members, graduate and undergraduate students who revealed not using e-journals, and shows that lack of awareness about the service was selected by most respondents (65%), followed by not using journal literature (57.5%) and feeling more comfortable with printed journals (37.5%).

	All combined	Faculty members	Graduate students	Undergraduate students
Lack of awareness about the service	26 (65.0%)	0 (0.0%)	4 (57.1%)	22 (71.0%)
Not using journals	23 (57.5%)	0 (0.0%)	0 (0.0%)	23 (74.2%)
Feeling more comfortable with printed journals	15 (37.5%)	2 (100.0%)	5 (71.4%)	8 (25.8%)
Dislike of reading from screen	10 (25.0%)	1 (50.0%)	3 (42.9%)	6 (19.4%)
Lack of awareness about where to find links to e-journals	8 (20.0%)	0 (0.0%)	1 (14.3%)	7 (22.6%)
Finding technical difficulties	5 (12.5%)	1 (50.0%)	1 (14.3%)	1 (3.2%)
Limited number of years in electronic format	5 (12.5%)	0 (0.0%)	2 (28.6%)	3 (9.7%)
Other	3 (7.5%)	0 (0.0%)	2 (28.6%)	1 (3.2%)
Limited number of titles in electronic format	2 (5.0%)	0 (0.0%)	1 (14.3%)	1 (3.2%)
Insufficient PCs for students*			0 (0.0%)	2 (6.5%)
Slowness of PCs for students*			0 (0.0%)	2 (6.5%)
	<i>N=40</i>	<i>N=2</i>	<i>N=7</i>	<i>N=31</i>

Note: Respondents were permitted multiple answers
* item included in student questionnaires only

If lack of awareness was the overall prominent reason for non-use, a breakdown of the user figures showed that only students selected this item (71% of undergraduate and 57.1% of graduate students) but no faculty members. This finding suggested that academic staff had more opportunities to become aware of the service than students had. The high value of lack of awareness confirmed the findings of several studies, according to which this is one the main reasons for non-use of e-journals [4].

5.2.2 Irrelevance of journal literature

One of the most obvious reason preventing users from accessing e-journals can be the irrelevance of journal literature for their study. According to librarians, both books and journals were very important information resources for Classics and Medieval studies. However, undergraduate students were likely to use almost exclusively books, at least until they had to work for their dissertation, while graduate students and faculty members were using both books and journals. The interviewed faculty members described their use of journals as representing around 50% of the material used, while the only undergraduate student interviewed confirmed that journal literature had become to represent a significant source of information since she started to work for her dissertation.

As shown in table 11, the main reason for non-use reported by undergraduate students was ‘not using journals for my studies’ (74.2% of respondents), a choice completely absent in the other categories of respondents. This data confirmed that undergraduate students usually were not likely to use journal literature during the course of their studies. However this looks surprising if one considers that a large part of respondents were students of over the 4th years of attendance to an academic course, and they should have begun to work for their dissertation (table 8).

5.2.3 Limited range of e-titles

An opinion shared by every faculty member and student interviewed was that until the number of available titles in their area of research would be so limited, there were no advantages in using e-journals. The characteristic of the journal collection clearly appeared to be one of the key factors in preventing users from the service or in minimising use:

“In my experience I have seen that there are very few titles.”

Faculty member

“There are many more resources of interest to scientific researchers than to humanists.”

Faculty member

The fact that in PCI Full-text the number of bibliographic references linked to the full-text of articles was very limited appeared to be a common reason of complaint, because users most of the time were frustrated at the false promise of a direct access:

“When the library system licensed PCI Full-text we thought that this was a useful resource for humanities researchers, but this was not true. There are only few titles in our area and the issues stop at 1990. Often there is no advantage in using it”.

Librarian

A number of respondents complained not only about the little number of titles, but also about the little relevance of the e-titles available for their research needs:

“Most things that one is seeking are not present. [...] Every once in a while I take a look at it [BibEl], but I don’t find the things I’m looking for.”

Graduate student

“Yes, there are electronic journals that I should use, but at the UP we don’t have access... I say this because I use them when I’m visiting other libraries in Italy and in other countries... we don’t have the electronic journals I need.”

Faculty member

“Online journals in my area of research are available elsewhere, not through the University of Parma.”

Statement added to the questionnaire by a graduate student

One of the students who participated in the usability test and who had never heard about e-journals before, at the end of the test wanted to search some relevant journals for his research project through BibEl, but he did not find any of them in the collection.

As shown in table 12, the limited number of e-titles available in their discipline was selected as the most common problem by the e-journal users (66.7% of respondents), followed by the lack of relevant publications (44.4%) and limited number of back issues (44.4%).

This prominent position of the factors related to the collection characteristics was in line with the findings of previous studies on e-journals [5]. All types of users indicated the limited range of titles as the most important barrier to use, but faculty and graduate students with more emphasis.

Conversely, the insufficient range of titles appeared to have a sensibly lower importance for non-users. No faculty members selected these items (table 11), but the concern about the e-journal service

coverage did not seem to be very important even for students: only 3.2% of undergraduate students and 14.3% of graduate students selected ‘Insufficient range of titles’.

Table 12
Problems found in using e-journals

	All combined	Faculty members	Graduate students	Undergraduate students
Limited number of titles available in electronic format	12 (66.7%)	6 (75.0%)	4 (66.7%)	2 (50.0%)
Unavailability of relevant titles	8 (44.4%)	3 (37.5%)	4 (66.7%)	1 (25.0%)
Limited number of back issues in electronic format	8 (44.4%)	5 (62.5%)	3 (50.0%)	0 (0.0%)
Feeling more comfortable with printed journals	5 (27.8%)	3 (37.5%)	1 (16.7%)	1 (25.0%)
Finding problems with printing of e-articles	3 (16.7%)	1 (12.5%)	1 (16.7%)	1 (25.0%)
Cannot access from home	2 (11.1%)	0 (0.0%)	1 (16.7%)	1 (25.0%)
Technical problems	1 (5.6%)	0 (0.0%)	0 (0.0%)	1 (25.0%)
Insufficient number of PCs available to students*			0 (0.0%)	2 (50.0%)
	N=18	N=8	N=6	N=4

Note: Respondents were permitted multiple answers
* item included in student questionnaires only

5.2.4 Poor availability of back issues

The interview respondents believed that the use of retrospective literature was essential to follow the historical development of research and criticism. In their discipline back issues were as important as current information, for one respondent even much more important than up-to-date information. An e-journal service restricted to the most recent issues had a very limited effectiveness.

“If not all the years of a title are available online I think this is a disappointment. Then the service disappears and I don’t see any convenience.”

Graduate student

The questionnaire provided evidence of the importance of coverage for users: the limited availability of back issues was selected by 44.4% of respondents who indicated that they used e-journals (table 12). However the factor appeared to be relevant only for faculty members (62.5%) and graduate students (50%). In contrast, the limited offer of information published in the past was a reason of non-use only for 12.5% of non-users (table 11). A breakdown of user figures showed that no faculty member selected this item, while only 28.6% of graduate and 9.7% of undergraduate students indicated it as a reason for non-use.

5.2.5 Preference for printed journals

All the interviewed respondents showed a strong preference for using printed journals rather than e-journals. This negative attitude towards the electronic medium was partly related to the unwillingness to change their personal habits of research with an unfamiliar tool. Even if some faculty member explained his attitude relating it to a generational factor, the same behaviour was clearly shown also by graduate students.

“If one thing is available both in printed and electronic format I prefer the printed one... I don’t know why, it’s just my preference. It’s the same with the Thesaurus [Thesaurus Linguae Graecae on CD-ROM], I read the electronic to find the occurrence of words and it’s very useful, you use one thousandth of time compared with the printed tool. But I prefer using books, this is beyond comparison! I feel more comfortable with printed tools, the contact with the book. Yes, I strongly prefer it.”

Graduate student

“I prefer the printed [journal], without any prejudice, but if the two tools are available I choose the printed one. Mainly because there is the curiosity to get into the libraries, particularly into the new libraries and to have the book in your hands. Perhaps it’s a sort of psychological thing, because I was brought up when these tools didn’t exist.”

Faculty member

This attitude towards the electronic medium seemed to influence the use of e-journals, as respondents revealed that they mainly used to turn to the electronic version only if a printed version was not available at UP or was held in a library difficult to reach. Obviously, all respondents said to be strongly adverse towards substituting printed journals with electronic journals.

However, this evidence was the expression of a more complex behaviour than the simple preference towards a traditional method of study. Most respondents observed that the massive use of e-resources in their field of research, of which the diffusion of e-journals is only a part, was having a negative influence on the quality of study and research and pushed the researcher to a superficial analysis. In their opinion, computerised searching tended to give the impression that all information was within reach and relevant, but the researcher wasted his time looking at large amounts of irrelevant material. This represented a risk especially for students, who tended to assume that all resources are electronically available and easy to find, overlooking the fact that most information is only available in printed format in the library. One faculty member described how he used to warn his students off using electronic resources as first source of information:

“The risk with electronic resources is just this, that if one is not able to put some filter between his question and the supply of the electronic tool he loses his head. I usually suggest students to turn first to the traditional and reliable tools, and then to refine their search with the electronic ones.”

A discrepancy was shown regarding the users’ perception of comfort with e-journals between librarians and users. According to the librarians, a distrustful attitude towards electronic resources was strong in faculty members but not in students. While students generally seemed to prefer electronic to printed resources, faculty members showed a differentiated behaviour. Part of the scholars seemed to have a more innovative habit of research, being able to use both electronic and printed materials, but several faculty members continued to have a strictly traditional approach. However, when a resource was available in both printed and electronic version and they were well informed about it, students and part of the faculty members preferred the electronic one.

The questionnaire allowed a more precise measurement of this factor as a barrier to use. As shown in table 11, feeling more comfortable with printed journals was selected by 37.5% of respondents who indicated that they did not use e-journals. A breakdown of the user figures shows that ‘feeling more comfortable with printed journals’ was cited by both two faculty members and by most graduate students (71.4% of respondents). This would tend to suggest a less innovative attitude of graduate students than that perceived by librarians, and appears to confirm the results of a previous study, which showed how graduate students more than acting as agent of change towards the electronic resources tended to conform to the behaviour of older academic staff [6].

The preference towards printed journals was far less relevant for users of e-journals. As shown in table 12, only 27.8% of the respondents indicated a more comfortable feeling with printed journals. Faculty members showed the highest value (37.5% of respondents), followed by undergraduate students (25%) and graduate students (16.7%). The preference for printed journals was found more important in the present research than in some earlier studies: for instance at UP it was the third more frequently selected item by non-users, while at the University of the West of England the last but one [7]. At the University of Patras less than one third of the respondents indicated that they preferred printed journals [8], while at Cardiff University only a minimal percentage of respondents did (4%) [9].

5.2.6 Dislike of reading from screen

Most interviewed respondents observed that they felt very uncomfortable reading from screen. If for part of them this factor did not represent a relevant disadvantage, because of the easy printing of articles, for some respondents this was on the contrary a negative aspect. Since they disliked reading from screen, they were not able to decide whether online articles were relevant or not and tended to print all materials, to discover later that most of them were irrelevant. Anyway, if the product of e-journals was a photocopy-like item, this was the demonstration that electronic full-text is unnecessary:

“Reading from screen encourages a superficial reading, which lacks concentration and attention. The computer pushes you to do all in a hurry, it’s something unconscious. So I prefer printing articles, in particular if they are long; so, you see, we eventually come back to the traditional tool.”

Faculty member

As the questionnaire revealed, the dislike of reading from screen was selected as reason for non-use by 25% of non-users of e-journals (table 11), and was a bigger concern for graduate students (42.9%) than for undergraduate students (19.4%). This finding confirms the results of earlier studies, which concluded that printing was the prominent approach to detailed study of an article [10].

5.2.7 Lack of technical skills

While part of the interviewed students felt they did not have the required technical skills for taking advantage of e-journals, no faculty members mentioned this factor.

“... I’m not very familiar with technical issues, we are all like that in our field. Few of us are able to move well in this field. The students who start their dissertation usually are unable to write with the computer. It’s just the kind of discipline that takes you to the moment of your dissertation with no knowledge in informatics.”

Graduate student

‘I have a total lack of bent for all that is informatics, technology and so on’.

Undergraduate student

However, the questionnaire provided evidence of this aspect also in relation to faculty members. ‘Finding technical difficulties’ was selected as reason for non-use by one of the two faculty members who did not use e-journals (table 11), and one undergraduate and one graduate student. If one looks at the items selected by faculty members as reasons for non-use – ‘feeling more comfortable with printed journals’ (100% of respondents) ‘dislike of reading from screen’ (50% of respondents) and ‘finding technical difficulties’ (50%) - it appears that non-use is caused by the preference for a traditional approach to journal literature and by a problematic attitude towards technology. Among respondents who used e-journals (table 12) only undergraduate students (25%) indicated that they found technical problems with accessing the service.

5.2.8 Unawareness about the available points of access to e-journals

The majority of interviewed people were not aware of the tool provided by the UP libraries for locating e-journals. Not only the non-users of e-journals were unaware, but also the users, some of which revealed using curious methods for accessing e-titles:

[The interviewer shows BibEl to the respondent on the computer screen:]

“No, I’ve never seen this site before ...I didn’t know it, but ... yes it looks very useful”.

Graduate student, user of e-journals

“No, I’ve never used this [BibEl]. I’ve used other sites, even if it’s ridiculous because this is our site. I’ve seen a German site, Kirche [sic!].”

“My strategy is probably wrong and I think that of course there might be some short cuts. I take the publisher’s link and look if inside there is the journal I’m looking for. I think this is the top of dispersion...”

Faculty member, user of e-journals

This finding did not receive full evidence from the questionnaire. The statement ‘not knowing where to find links to e-journals’ was included among the list of possible barriers to use of e-journals. Like the statement ‘not knowing about the service’, it was selected as reason for non-use only by students, but in a sensibly minor percentage (14.3% of graduate and 22.6% of undergraduate) than the first one (table 11). The reason was probably that unawareness of the access points to e-journals was felt as included within the more general lack of awareness about e-journals. Similarly, the section of the questionnaire for e-journal users included among the list of possible problems the statements ‘finding difficult to locate e-journals form the UP libraries Web site’ and ‘not knowing how to find e-journals relevant to my subject’. No respondents selected the proposed items. This finding was by far different from the one obtained at Cardiff, where not having a clear idea about how to access e-journals was a common complaint [11]. Here the investigated people did not seem to perceive the discovery and location of e-titles as problematic. On the contrary, evidence collected through observations showed that users found several kinds of problems in locating e-journals (see below).

5.2.9 Insufficient computer equipment

While the interviewed faculty members did not appear to have any problem of computer equipment, this was a problem for students. There were situations in which the computers available to students were few or in bad condition for allowing easy access to the service, and this was considered as a major barrier to the use of e-journals.

“First of all there is a problem of equipment. Here we have old and very slow computers. If I have to use 15 minutes to download an article, that’s what usually happens with all files, then it’s more convenient to go up three floors and take the volume. If there was the right equipment I think I would use e-journals more willingly.”

Undergraduate student

The discussion with librarians revealed that this problem was more serious for the Cultural Heritage library than for the other libraries.

The equipment issue was also investigated through the questionnaire. No faculty member who indicated to be a non-user of e-journals complained about their equipment, but this problem was perceived only by a low percentage of students: only 6.5% of undergraduate students selected ‘lack of PCs available to students’ and 6.5% ‘slowness of PCs available to students’ (table 11). Also two (50%) undergraduate students who revealed using e-journals complained about the insufficient number of PCs available to students. These findings confirm that the provision of adequate computer equipments was problematic only in local situations. The fact that graduate students did not perceive this problem, may suggest that they were better equipped for accessing online resources than undergraduate students were.

5.2.10 Impossibility of access from home

The interviews did not provide evidence that the current restriction of the e-journal service, which did not offer off-campus access, was perceived as a disadvantage. The questionnaire findings were not dissimilar. As shown in table 12, the restriction was perceived as a disadvantage by one (25% of respondents) undergraduate student and one (16.7% of respondents) graduate student, while no faculty members selected the item. This suggested that, differently from students, faculty members used to study on-campus.

5.3 Advantages of e-journals

Although e-journals did not seem yet a widespread resource, the range of titles appeared still very limited, and people showed quite a distrustful attitude towards the electronic medium, the group of users under study recognised a number of advantages that e-journals currently offered to them and expressed a wide range of expectations on future developments in this field.

5.3.1 Perceived advantages

The interview respondents considered e-journals as a very convenient information resource. Being allowed to access articles from their desk was considered an advantage, because they had not to collect materials from different libraries.

“For the scholar this is the top, to have the article on his desk.”

Faculty member

“... the convenience of having an article on his computer is an extraordinary thing”.

Faculty member

“First of all if the journal is not here but in another library I don’t have to move”.

Graduate student

E-journals were appreciated as a non-stop service, available also when libraries were closed or access restricted. Accessing e-journals was perceived as much speedier than accessing printed journals. Thus, the user could collect materials by saving their time.

“...the possibility to use journals during the closing times of libraries or when access is restricted. In perspective I think that the use will grow more and more, because I’m a commuter and this is for me an added resource”.

Faculty member

According to the interviewed respondents, e-journals enabled a great variety of searching possibility in comparison with printed journals. They offered the possibility to search multiple years and perform searches by keywords. Moreover, the reader was free to manipulate articles, for instance selecting and printing parts of an article or copying references and footnotes in a citation file.

Table 13 summarises the advantages of e-journals that users of the service indicated in the answers to the questionnaire questions about the perceived advantages of e-journals for their study or research activity. It was possible to select more than one statement from a list, and to add further items in the ‘other’ option.

	All combined	Faculty members	Graduate students	Undergraduate students
24 hours access	9 (50.0%)	5 (62.5%)	2 (33.3%)	2 (50.0%)
Convenience	8 (44.4%)	4 (50.0%)	2 (33.3%)	2 (50.0%)
Saving of time	7 (38.9%)	3 (37.5%)	5 (83.3%)	2 (50.0%)
Being able to access e-journals from references in database	7 (38.9%)	3 (37.5%)	1 (16.7%)	3 (75.0%)
There are titles not available in printed format	6 (33.3%)	2 (25%)	2 (33.3%)	2 (50.0%)
Being able to search multiple volumes at the same time	6 (33.3%)	0 (0.0%)	3 (50.0%)	3 (75.0%)
Updating	2 (11.1%)	0 (0.0%)	1 (16.7%)	1 (25.0%)
Ease of use	2 (11.1%)	0 (0.0%)	1 (16.7%)	1 (25.0%)
	<i>N=18</i>	<i>N=8</i>	<i>N=6</i>	<i>N=4</i>

Most respondents used e-journals because they were available 24 hours a day (50% of respondents) and convenient (44.4%), because it was possible to access articles directly from the references in online bibliographic databases (38.9%), and because using e-journals saved their time (38.9%). Students seemed to appreciate the search facilities offered by e-journal technology far more than faculty members: the possibility to search in many volumes was selected by 75% of undergraduate and 50% of graduate students, but by no faculty members. Access from online databases was considered a prominent advantage for undergraduate students (75% of respondents), but was less significant for faculty members (37.5%) and graduate students (16.7%). As expected, updating was not an important advantage of e-journals (11.1% of overall respondents): most e-titles in this discipline were back files of journals, updated to 1990. Ease of use was selected only by 11.1% of respondents, indicating that this group of users did not perceive e-journal as an easy to use resource. This finding is particularly relevant if compared with the result of similar studies: at Cardiff University ease of use appeared to be 'by far the most common reason for use e-journals' [12], while at the University of Patras ease of use was one of the most cited reasons for using e-journals [13].

5.3.2 Expectations on e-journal service

As a faculty member observed during the interview, learning new technologies and changing research habits require efforts and time. For this reason only if e-journals become a convenient resource all individual resistance will be overcome. This change happened with other information resources, like Patrologia Latina Database:

“For instance in a similar sector we can think about what happened with Patrologia Latina on CD-ROM. Its consultability is enormously higher than the printed version, which you have to browse and browse and browse ... When one starts to use the electronic [tool] one never stops. If one appreciates this it's easy to overcome the first moment of difficulties.”

But what conditions could make e-journals a valuable resource for this group of users? All respondents agreed that increasing the collection and making back issues available was a priority. However, some of them did not believe that these conditions could be realised, because of the poor availability of financial resources in the humanities.

Also providing an easy and fast access to titles and facilitating discovery of resources was considered an important improvement to use:

“I think that the important thing is to organise these resources on the Web in a way that allows people wasting the least possible time. More intermediate links you create to let somebody get to the point he is looking for, more time you force him to spend. This becomes a great disadvantage when the connection is slow, when also a single extra step involves long waiting times.”

Faculty member

A request for increased information from the libraries about the service emerged both from the interviews and from the comments given by users during the observations. The participants in the usability test, who had never accessed e-journals before, complained that they had not been informed about the titles of their interest. Students were perceived as the most disadvantaged users:

“Probably the users which should need more help are the students, because all the academic staff gradually get in touch with these tools.”

Faculty member

Off-campus access could make e-journals more convenient only for part of the respondents, for instance for faculty members who used to travel for research, who did not live in Parma, and had not a quiet room at their departments. However, most respondents observed that they used to study in the

libraries, because of the impossibility to obtain materials on loan, or because they had to use a huge deal of different resources at the same time.

Although the interviewed people expressed expectations for the improvement of the electronic access, the prominent attitude also for the future was to consider e-journals more like a complement to printed journals than as a substitute. Full-text titles could be useful as additional resources to the printed journals. However, the respondents did not appear to be likely to abandon traditional journals for e-journals when the core titles in their field of study were concerned:

“I’m favourable to an increase of electronic journals ... of course only concerning the titles that I wouldn’t have any other possibility to obtain. If it concerns titles that we have here in the library, this interests me much less.”

Graduate student

The questionnaire respondents were asked to indicate which requirements they evaluated to be important in order to make e-journals a valuable service to them, with the question framed in terms of scale such as ‘unimportant’, ‘not very important’, ‘important’, ‘very important’, and ‘don’t know’. Table 14 describes the respondents’ choices.

Table 14
Factors that would encourage the use of e-journals

	<i>All combined</i>					Faculty members					Graduate students					Undergra	
	Unimportant %	Not very important %	Important %	Very important %	Don't know %	Unimportant %	Not very important %	Important %	Very important %	Don't know %	Unimportant %	Not very important %	Important %	Very important %	Don't know %	Unimportant %	Not very important %
eir discipline	0.0	0.0	12.1	82.8	5.2	0.0	0.0	0.0	80.0	20.0	0.0	0.0	7.7	84.6	7.7	0.0	0.0
s	0.0	1.7	19.0	77.6	1.7	0.0	0.0	0.0	90.0	10.0	0.0	7.7	7.7	84.6	0.0	0.0	0.0
ision about e-	0.0	1.7	17.2	75.9	1.7	0.0	0.0	20.0	70.0	10.0	0.0	7.7	7.7	84.6	0.0	0.0	0.0
	0.0	12.1	27.6	58.6	1.7	0.0	10.0	40.0	40.0	10.0	0.0	7.7	30.8	61.5	0.0	0.0	14.3
overing links to e-	0.0	8.6	34.5	55.2	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	61.5	38.5	0.0	0.0	14.3
	0.0	1.7	37.9	55.2	5.2	0.0	10.0	30.0	40.0	20.0	0.0	0.0	30.8	61.5	7.7	0.0	0.0
ible to students*	0.0	12.1	36.2	48.3	3.4	0.0	10.0	30.0	40.0	20.0	0.0	23.1	46.2	30.8	0.0	0.0	8.6
											7.7	15.4	53.8	23.1	0.0	2.9	22.9
	0.0	17.2	48.3	27.6	5.2	0.0	10.0	30.0	30.0	30.0	0.0	30.8	38.5	30.8	0.0	0.0	14.3

student questionnaires only

The number of titles in their discipline was found to be the most important factor, with 82.8% of users indicating it as 'very important'. Surprisingly – because of the historical nature of the discipline under study - updating was the second most important factor (77.6%), followed closely by availability of back issues (75.9%). The high preference for updating was quite unexpected from students and scholars in an historical discipline. Furthermore, the answers to the previous question about the currently perceived advantages of e-journals indicated updating as one of the least selected items. Probably users currently did not perceive e-journals as a channel of up-to date information, but they seemed to expect from e-journals both current information and the possibility to access information published in the past.

After the aspects concerning the characteristics of the collection, a relevant role was assigned to the properties related to the 'operation of the service', with 58.6% of respondents citing the provision of information as very important, 55.2% indicating the system for discovery of e-titles as very important, and 55.2% citing ease of use as very important. The questionnaire findings about the users' expectations were not different from the results of SuperJournal reported by Eason and Harker [14], who highlighted the importance of both the characteristics of the collections and the properties related to an easy access for encouraging use. If off-campus access was not among the dominant expectations (48.3%), this was probably because the respondents were more likely to study at the university than at home.

The differences by type of users were minimal. Both students and scholars indicated number of titles, updating and availability of back issues as their prominent expectations. The percentage of respondents indicating off-campus access as very important was highest for undergraduate students (57.1%) than for graduate students (46.2%) and faculty members (40.0%), and more undergraduate students indicated the number of PCs for students as very important (31.4%) than graduate students (23.1%) did. Also, undergraduate students were more likely to study at home than faculty and graduate students.

A breakdown of user figures by users and non-users of e-journals (Table 15) showed that the operation of the service was more prominent for non-users than for users. Provision of information about the service was very important for 67.5% of non-users compared to 38.9% of users, while the system for discovery of links to e-journals was very important for 60% of non-users and 38.9% of users. Instead, the characteristics of the collection (number of titles, updating, and back issues) were more important for users than for non-users. But ease of use was a property expected both by users (61.1% rating it as very important) and by non-users (57.5% rating it as very important).

	Users rating very important %	Non-users rating very important %
Number of titles in their discipline	94.4	77.5
Updating	94.4	67.5
Access to back issues	77.8	75.0
Provision of information about e-journals	38.9	67.5
Ease of use	61.1	57.5
Easy system for discovering links to e-journals	38.9	60.0
Off-campus access	38.9	52.5
Number of PCs available to students*	40.0	26.3
Speed of access	38.9	22.5

* Item present only in the student questionnaire

5.4 Promotion of e-journals

The data collected from the interviews and the questionnaire suggested that unawareness of both relevant e-journals and available points of access were relevant barriers to use, especially for students. Furthermore, not only non-users or occasional users were unaware of the e-journals in their discipline,

but also the most frequent users. The readers' and non-readers' expectations on increased information were high. As the analysis of professional literature has revealed, the discovery system is a key element in the promotion of e-journal service. A number of questions about the role of the discovery system in promotion and support had to be explored. What role did the e-journal discovery system have in providing information about e-journals? What role did it have in supporting users with locating the titles, accessing full-text articles, and assisting readers with the problems they could find during the process? How effectively was the discovery system integrated in the UP libraries strategy of electronic resources' promotion?

5.4.1 Sources of information about e-journals

Although all the librarians participating in the group discussion were convinced that promotion was a key aspect for increasing the use of e-journals, only two of them mentioned that they had organised promotional activities about e-journals. At the History library there was a workshop for the academic staff when PCI was firstly added to the online resources' collection, while e-journals were usually presented to students during introductory meetings to the library services. At the library of Classical and Medieval Philology the promotion of e-journals was realised through posters, e-mail information to scholars and graduate students about the new titles, meetings with students to present the library services. At the time of the research, the librarian was writing a printed guide to e-journals in Classics and integrating the printed journal list with the titles available in electronic form. Both the History and Classical and Medieval Philology librarians complained that the outcome of these initiatives was not encouraging. No librarians mentioned realising any form of promotion of BibEl.

According to the librarians, the main reason of users' unawareness of e-journals was that it was not easy for users to discover e-journals from the Web site. The presentation of the service seemed to be ineffective, as it was not evidenced on the home page:

"...perhaps it is difficult to find the service on the Web, because of the way information is structured. They [the users] see 'Electronic journals', but I don't think they are stimulated to see what it is about."

Most participants believed that the access by subject in BibEl was too general and did not facilitate users to discover the relevant titles in their discipline. Having a more effective organisation of e-journals was considered a form of promotion, but also other specific initiatives would be necessary, in particular for faculty members, who were considered the users that most needed information, encouragement and training:

"It is necessary to instruct them with workshops, I'm thinking about faculty, because for students we organise library instruction courses and there they have the opportunity to become familiar with the new resource. Nothing is done for faculty members".

Asked to describe where they found out about e-journals, three respondents answered that they received information from librarians through e-mails and individual talks, but also found information in the library Web site. One faculty member behaved as self-taught persons. Another faculty member attended a seminar on electronic resources in Classics and Medieval studies, which was organised by the academic staff. Most respondents mentioned that they received also information from their colleagues or friends and that they gathered information by visiting other libraries. One faculty member said to have been informed by his students.

"What I know I have learnt as self-taught or from other scholars and colleagues."

Faculty member

"The librarian sent an e-mail to me about PCI ..."

Graduate student

"I've heard something from the librarians ..."

Faculty member

In the questionnaire distributed to faculty members and students, respondents who answered that they used e-journals were asked to indicate how they found out about the service, by selecting from a list of suggested items. It was possible to select more than one item, while some room was left for adding further items. Respondents' indications are summarised in table 16.

Table 16
Sources of information about e-journals

	All combined	Faculty members	Graduate Students	Undergraduate students
The library staff	8 (44.4%)	5 (62.5%)	2 (33.3%)	1 (25.0%)
A colleague/friend	7 (38.9%)	2 (25.0%)	3 (50.0%)	2 (50.0%)
Finding links from bibliographical references in databases to e-journals	5 (27.8%)	1(12.5%)	3 (50.0%)	1 (25.0%)
The University of Parma Libraries Web site	4 (22.2%)	0 (0.0%)	4 (66.7%)	0 (0.0%)
A professor*			0 (0.0%)	2 (50.0%)
Finding links from OPAC's records to e-journals	1 (5.6%)	1 (12.5%)	0 (0.0%)	0 (0.0%)
Attending a seminar about electronic resources	1 (5.6%)	0 (0.0%)	1 (16.7%)	0 (0.0%)
Other	2 (11.1%)	2 (25.0%)	0 (0.0%)	0 (0.0%)
	N=18	N=8	N=6	N=4

Note: Respondents were permitted multiple answers
*** Item present only in the questionnaire for students**

The overall results showed that the library staff was the most prominent source of information about e-journals (44.4% of respondents), followed by personal interactions with colleagues or friends (38.9% of respondents). Information provision seemed to rely upon personal communication, while the system for discovery of e-journals seemed to play a secondary role: finding links from references in online bibliographic databases was selected by 27.8% of respondents, looking up the UP libraries Web site by 22.2% of respondents, and looking up the OPAC only by 5.6% of respondents. These overall results were different from the findings obtained at the Cardiff University, where the role played by the University Web pages was by far more relevant than the role of library staff [15]. Looking at the breakdown of the user figures, some major differences appeared. The role of the library staff in informing users appeared to be far more important for faculty members (62.5% of respondents) than for graduate (33.3% of respondents) and undergraduate students (25% of respondents). On the contrary, the electronic system of discovery seemed to have played a major role in informing students: the majority of responses from graduate students (66.7%) indicated the Web site as source of information, while 50% of graduate and 25% of undergraduate students reported having discovered e-journals through the use of bibliographic databases. Only faculty members selected the OPAC as source of information about e-journals (12.5% of respondents). Not differently from what discovered by Wolf [16] and Tomney and Burton [17] in their investigation on e-journal users, personal recommendation from friends, colleagues and tutors appeared to be a major source of information: 50% of graduate and 50% of undergraduate students was informed by friends, while having been informed by a professor was selected by 50% of undergraduate students. A lower percentage of faculty members reported having been informed by colleagues (25%). The findings about seminars and information skills sessions were particularly discomfoting: only one graduate student selected this item.

5.4.2 Type of support or training

Few interviewed people described that they received support from the library staff in e-journal use. When it happened, it was through individual support rather than through a formal training session. Faculty members were less likely to ask for support from librarians, but showed a preference for peer-to-peer assistance. Although few of them seemed to perceive the need of assistance, the interviews provided evidence of the existence of many problematic areas: for instance it was not clear how to discover the e-titles licensed by the UP libraries and how to use the PCI Full-text user interface.

Understanding the conditions of access of different resources seemed problematic too: one faculty member was convinced that only one computer in the library was authorised to access e-journals.

Students were more likely to ask for library staff assistance, but they also tended to ask their friends rather than the librarian. Only one faculty member observed that she found support reading the instructions provided on the Web site:

“... then I stopped because a password was required. I used the instructions that I found on the library system to get it”.

In the questionnaire, the respondents who indicated that they used e-journals were asked to describe what support or training they received from their library, through selection from a list of items. Multiple selections were possible and respondents were given the possibility to add further items. A total of 55.6% of respondents reported not having received any kind of training or support (table 17), while 38.9% had been individually supported by the library staff, only 5.6% attended a training session and only 5.6% received support through the e-journal Web site. Graduate students appeared as the least supported group, 83.3% of them having received no direct support, followed by undergraduate students (50%), and faculty members (37.5%). A higher percentage of faculty members indicated having turned to library support (62.5%) compared with undergraduate students (50%) and graduate students (0%), who received only remote support through the e-journal Web site (16.7% of respondents).

Table 17
Type of support/training received from the library

	All combined	Faculty members	Graduate students	Undergraduate students
Any support/training	10 (55.6%)	3 (37.5%)	5 (83.3%)	2 (50.0%)
Having received individual support	7 (38.9%)	5 (62.5%)	0 (0.0%)	2 (50.0%)
Having attended a presentation/training session	1 (5.6%)	1 (12.5%)	0 (0.0%)	0 (0.0%)
Having received support through the e-journal web site	1 (5.6%)	0 (0.0%)	1 (16.7%)	0 (0.0%)
Other	1 (5.6%)	1 (12.5%)	0 (0.0%)	0 (0.0%)
	N=18	N=8	N=6	N=4

Note: Respondents were permitted multiple answers

While the interviewed faculty members declared that they did not need any support, the faculty members who responded to the questionnaire appeared as the type of users that more frequently received help from the librarians. As from the questionnaire results, the students did not seem to have been in the conditions of receiving support from the library. Further research in this area could be useful to understand the support need of academic staff and students and the activities undertaken by the libraries to address it.

Both the interviews and the questionnaire did provide evidence that the function of support carried out by the Web site was not relevant.

The librarians participating in the discussion did not mention to have helped users with the use of BibEl, but they showed the tool to students during the library instruction seminars and the annual presentations of library resources. Surprisingly, some of them did not have correct information about the functions and the structure of BibEl:

“...[BibEl] is mainly structured to manage subscriptions and licenses, it doesn't give search functions as the catalogue does”.

...”with it [BibEl] it's not possible to search for words in the titles”.

5.5 Discovering and accessing e-journals at Parma

One of the objectives of the present research was to analyse the effectiveness of the method adopted by the UP libraries for enabling discovery of e-titles. The main questions on this subject were: how did the users proceed for locating e-journals in their discipline? What was their perception of the discovery method offered at Parma? Was it effective and easy to use? What improvements should be made?

5.5.1 Techniques for finding the journal literature

The interviewed people were asked to describe the methods followed to find journal literature. Students and faculty members in Classics and Medieval studies revealed using a variety of sources, most of which were printed tools, and described their activity for finding journal literature as a winding and non-linear process. The use of electronic indexes and abstracting service was prevailing only among philosophy scholars, while in other areas printed indexes were still the majority. The acceptance of electronic indexes such as *l'Annee Philologique* and *BHA* did not seem to be very widespread yet: two respondents did not know how to use the electronic indexes, one graduate student was convinced that the electronic version was less complete and reliable than the printed one. Faculty members used to browse regularly a number of core review journals. Few of these resources, such as *Bryn Mawre* and *Histos*, are published in electronic-only format, but scholars did not perceive them as less authoritative than printed review journals. Students were provided with references by academic staff, but also used electronic indexes or specialised online catalogues, which included both journal articles and books. Other sources of information on journal literature were footnotes in articles, books, and dissertations. The respondents often tended to separate the techniques for finding printed articles and electronic articles. They seemed to perceive the traditional searching tools as channels for finding printed resources, while for finding references to electronic materials, they mentioned Web tools such as guides, subject gateways, and electronic review journals.

5.5.2 Methods adopted for locating e-journals

The interviewed faculty members and students used different methods to locate e-journals and retrieve full-text articles. Looking at the UP libraries Web site and searching *BibEl* was just one of the possible approaches, but often users followed different strategies. Two faculty members used to look at '*Rassegna degli strumenti informatici per lo studio dell'antichita' classica*', an authoritative guide to electronic resources for their discipline [18], and to browse the e-journal list. One faculty member used to connect to the e-journal publisher Web sites and check if the journal he was seeking was accessible from the UP. Several users had added the links to relevant e-journals to their personal bookmarks. Some users looked at the e-journal list available on the Department Web site, and few of them had located e-journals through a Web engine. Two faculty members who worked also in a different university revealed that they preferred using the library Web site of the other university rather than the one of UP, even when they were at Parma.

The questionnaire asked users of e-journals which methods they adopted for locating e-journals, through a selection from a list of items. Table 18 summarises the respondents' choices.

Table 18
Methods followed for locating e-journals

	All combined	Faculty members	Graduate students	Undergraduate students
Looking up the link 'e-journals' on the UP libraries Web site	12 (66.7%)	5 (62.5%)	5 (83.3%)	2 (50.0%)
Using the list of e-journals on their Department Web site	7 (38.9%)	2 (25.0%)	4 (66.7%)	1 (25.0%)
Using a subject guide to Web resources	4 (22.2%)	3 (37.5%)	0 (0.0%)	0 (0.0%)
Using the OPAC	4 (22.2%)	1 (12.5%)	1 (16.7%)	2 (50.0%)
Having added e-journal links to their bookmarks	4 (22.2%)	2 (25.0%)	2 (33.3%)	0 (0.0%)
Using bibliographical databases with links to e-journals	3 (16.7%)	1 (12.5%)	2 (33.3%)	1 (25.0%)
Using a Web search engine	1 (5.6%)	1 (12.5%)	2 (33.3%)	1 (25.0%)
	N=18	N=8	N=6	N=4

The e-journals page on the UP libraries Web site was by far the most frequently selected choice, with 66.7% of respondents citing it. A Department Web list of e-journals was the second most popular tool (38.9% of respondents), followed by a subject guide to Web resources (22.2%), the OPAC (22.2%), personal collections of links (22.2%), and bibliographic databases with links to e-journals (16.7%). The overall findings were not far from those obtained at Cardiff University, where the e-journal database was the first method to access e-journals, but also the Department Web pages were widely used [19]. The low number of selections for bibliographic databases and the OPAC may be explained by the fact that at the time of the research only few e-titles had been added to the catalogue and that the number of databases offering access to full-text articles was extremely limited. A breakdown of user figures showed a difference between the methods followed by faculty members and students. While the e-journal page was the prominent access point for all types of users, undergraduate students seemed to use the OPAC far more (50% of respondents) than graduate students (16.7%) and faculty members (12.5%). The second most popular method for faculty was using an online guide to Web resources (37.5% of respondents), followed by using a local list of e-journals on the Department Web site (25%) and using a collection of personal links (25%). The use of subject Web guides did not appear to be popular among students, who preferred the Department list (66.7% of graduate and 25% of undergraduate students) and the use of a search engine (33.3% of graduate and 25% of undergraduate). Using a bibliographic database to access full-text articles was more popular among students than among faculty members – it was selected by 33.5% of graduate students, 25% of undergraduate and only 12.5% of faculty members.

It is interesting to compare the methods used for locating e-journals by frequent users (using e-journals at least once a week) and infrequent users (using e-journals once a months or less than once a month). As shown in table 19, apart from the e-journal service Web page, which was the most popular method for both categories - it was selected by 62.5% of frequent users and 70% of infrequent -, the second popular method for frequent users was using a Department lists of e-titles (50% of respondents), followed by using a subject guide (37.5%) and using their personal collections of links (37.5%). On the contrary, these methods were the least frequently used by infrequent users, who rather selected using a search engine (30%), using the OPAC (30%), and using a bibliographical database with links to full-text articles (30%).

Table 19
Methods followed for locating e-journals by frequent and infrequent users

	Frequent users	Infrequent users
Looking up the link 'e-journals' on the UP libraries Web site	5 (62.5%)	7 (70.0%)
Using the list of e-journals on their department Web site	4 (50.0%)	2 (20.0%)
Using a subject guide to Web resources	3 (37.5%)	0 (0.0%)
Using the OPAC	1 (12.5%)	3 (30.0%)
Having added e-journal links to their bookmarks	3 (37.5%)	1 (10.0%)
Using bibliographical databases with links to e-journals	1 (12.5%)	3 (30.0%)
Using a Web search engine	1 (12.5%)	3 (30.0%)
	<i>N</i> =8	<i>N</i> =10

5.5.3 Discovering e-journals from the librarians' viewpoint

The librarians participating in the discussion thought that the approach adopted for enabling users to discover e-journals was ineffective for the group of users under study and that one of the main reasons of users' unawareness of e-journals was just the difficulty to discover the service from the Web site. The librarians' perception of the UP libraries policy for organising e-journals, which emerged from the discussion, was that the libraries central unit (Settore Biblioteche) processed the titles purchased through the consortium in order to include them in BibEl, while for the titles directly

licensed by individual libraries the library staff was free to include them in BibEl or in the OPAC or in both systems. Currently only two libraries were adding titles to BibEl. One of the two libraries was implementing both BibEl and the OPAC. One library was adding links to full-text journals only to the OPAC. Only one library was implementing BibEl with free electronic-only journals relevant in their discipline.

Librarians complained that BibEl was too advanced as a tool, unsuitable to users not familiar with e-journals as the group of users under study. However they agreed that BibEl was a more immediate and easy-to-use method than the OPAC:

“Provided that one knows what to search in the e-journal locator, it seems the most immediate tool because it presents a linear list and the provided information doesn’t create confusion. It is immediately understandable where one has to click”.

But the main librarians’ criticism of BibEl was that the e-title database was incomplete, and that the maintaining and updating of information was not efficiently managed. One of them recently discovered that several e-journals relevant to his users were not searchable through BibEl. Librarians felt that the OPAC was a more suitable system for their users, because this was the tool the users knew better. However, some librarians complained that currently the OPAC did not provide an effective access to e-journals, because it was impossible to understand the meaning of the symbol which links to the online version - a pile of books without any textual explanation:

“For some titles we added the link to the electronic version in the OPAC, but no one has ever told me ‘I’ve seen that we can have the articles online’. I think that no one has discovered what is the meaning of the [pile of] books ...”

But the main issue in this area was that whatever the method adopted by the UP libraries, this should include all the titles.

“The problem is the following: sometimes one has to perform several searches to find a result, because none of the methods is complete, and often a title is in the OPAC and not in the e-journal locator, or conversely. It would be useful to arrange the system so as to have at least one exhaustive tool.”

5.5.4 Users’ perception of BibEl

The system developed at the UP libraries for locating e-journals seemed to be unknown to most of the interviewed peoples, who never discovered this tool on the Web site. The respondents who used it observed that at the beginning they found it difficult to understand how to use it, but after they learned how to proceed they found it useful.

“The first time I’ve tried to find the right way through the instructions for using it [BibEl], but eventually I’ve understood how it runs. Now I feel fine.”

Faculty member

“Now there is a separate access for e-journals, isn’t it? Since we are talking about it, it occurs to me that there is a link that says ‘databases and e-journals!’”

Undergraduate student

5.5.5 Users’ perception of the OPAC as access point to e-journals

No interview respondents mentioned to have found links to e-journals through the OPAC. Surprisingly, the OPAC was not a common tool for searching journals, neither electronic nor printed ones. Most respondents revealed they never used it. When journals were located on open shelves, users said they were going to the shelves, because usually they already knew if the library held the title they were seeking for. Otherwise, respondents used the printed or electronic list of journals maintained

by their library. But the most surprising finding was that several respondents revealed looking up the ACNP catalogue and not the UP libraries OPAC to locate journals. ACNP is the electronic catalogue of journals held in the Italian libraries, which is maintained at the University of Bologna [20]. Respondents liked it because it was easy to use and it was a discovery tool for journals only. However, few of them were aware that the journal holdings of the UP Literature and Philosophy libraries were not present in ACNP. One faculty member said he preferred searching an old printed catalogue of the journals held in Parma libraries (published in 1989 and never updated) rather than searching the OPAC. Many respondents observed that searching journals in the catalogue was frustrating because the OPAC did not allow restricting the search only to journals, so it often happened to retrieve lots of titles and to waste time. Furthermore, some respondent showed they did not have a correct information about how to locate journals through the OPAC.

“As for journals I always start with ACNP, because there are also the journals held at Parma. But as for the titles that are here in the Department library, I already know what we have, so I go directly to the shelves. It’s easier to do so, because in any case I would have to go to the journal room anyway.”

Faculty member

“To be honest I start from the catalogue of Bologna [ACNP] ... if in our catalogue there was a function called ‘search books’ and another called ‘search journals’ I would feel better. It’s not immediate and evident how to search only journals. On the contrary, with ACNP I can do it and it’s better. I would like an interface that clearly divides the two types of search.”

Faculty member

5.5.6 Effectiveness of BibEl and the OPAC to locate e-journals

A test was conducted in the Library of Classical and Medieval Philology in order to evaluate the effectiveness and ease of use of the UP libraries e-journal Web pages, and to gather information about the preferences of users between accessing e-journals via the OPAC or via BibEl. The test aimed at answering the following questions: was the system for accessing e-journals easy to learn and use, and caused few errors? How quickly did the users work? What channel did they choose to perform the task, the e-journal locator or the online catalogue? Did choices seem obvious? How carefully did users read the information on the screens?

The participants in the tests were asked to find if the journal ‘Mnemosyne’ was available for the UP libraries users in electronic format. The participants were asked to ‘think aloud’ during the test, and at the end they were invited to describe their own perception of their behaviour during the test.

5.5.6.1 Test results

Seven users (two undergraduate students, two graduate students and three faculty) were observed while they interacted with the libraries Web site to access the e-journal. Only two users (one faculty and one graduate student) said having accessed e-journals before.

The test result was positive for five users – they located and accessed the title in a time of between two to five minutes – and negative for two – at the end of the time given of five minutes they did not succeed in answering the question. Both users who did not find the answer were students, one undergraduate and one graduate (see table 20).

Table 20
Success in locating the e-journal Mnemosyne

	All combined	Faculty members	Graduate students	Undergraduate students
No. successful	5	3	1	1
No. unsuccessful	2	0	1	1

5.5.6.2 Path of research followed

Main screen: the test focused on two possible methods for accessing e-journals, through the following links:

- Electronic journals
- Online catalogue

The first link takes to BibEl, the locally developed system for accessing the e-journal collection, while the second link takes to the OPAC, where part of the available e-journals are recorded following the single record approach (see Figure 2).

Surprisingly, only four users chose immediately one of the possible tools for accessing e-journals, two faculty members and one graduate student following the link ‘electronic journals’, and one undergraduate student following ‘online catalogue’. The rest of the testers behaved in different ways: one undergraduate student tried first with the link ‘online databases’, while one graduate student clicked the link “online resources” and searched the ACNP Journal Catalogue. One faculty member seemed at first confused about which link to follow, between ‘online catalogue’, ‘online databases’, ‘libraries’, ‘online resources’, and ‘electronic journals’. Only after several seconds she decided to try with ‘electronic journals’.



Figure 2. The UP libraries Web site main page

Testing clearly revealed that there was a usability problem with the links ‘electronic journals’, ‘online databases’ and ‘online resources’ on the main page. There was confusion with terminology as well as clear misunderstanding of what the term “online resources” implies, so the screen initially caused a number of errors. Two users quickly realised the error and upon returning to the main screen selected ‘electronic journals’ as the appropriate choice. On the contrary, the third user after realising the error decided to abandon the library web site and searched her department home page, where the journal Mnemosyne was listed under the “hot links for Classicists”.

Only one undergraduate student selected “online catalogue” as a method for locating the e-title. He commented his choice in this way:

“The catalogue is the only resource I learned to use, so it was the easiest way for me to try”.

In contrast, the OPAC was not an obvious discovery system for most of the testers:

“I simply did not think to use the catalogue because the catalogue is for books”.
Graduate student

One faculty member deliberately refused the catalogue because she always found difficulties with this tool:

“I hate it, I never find anything. When I use the catalogue I find nothing, then I ask librarians and they find things in a few seconds. My search strategy is trying to use any other possible tool for finding items”.

Second-level screen: the ‘online catalogue’ link leads to a secondary page containing some instructions for the use of the catalogue and the link that allows users to connect to the catalogue Web-based graphical interface. The only student who selected the catalogue for performing the task had no difficulties in connecting to the catalogue, but made many errors in searching the title and eventually he did not succeed in accessing it. Firstly, he did not find the option for restricting the search to serials only and got confused when he found many items including the term “mnemosyne” within the title. Thinking of being in error he went back to the search mask and tried the search again. Then, he did not identify the link to the electronic version of the journal, which is provided through a button representing a pile of books (see Figure 3). Not trying to click on this button, he did not succeed in finding the answer.

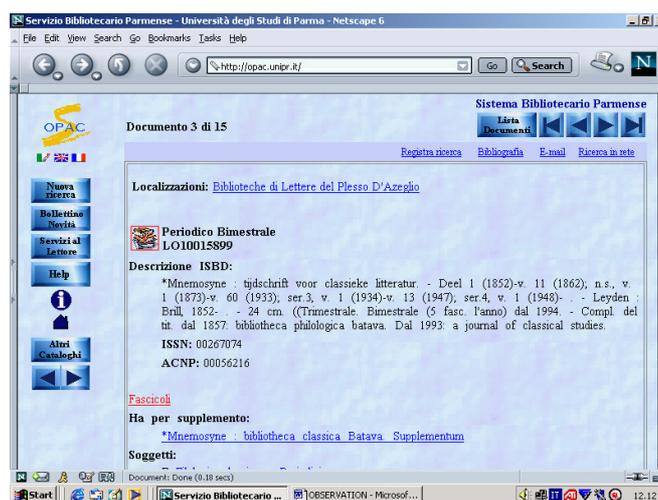


Figure 3. The record of Mnemosyne as it appears from the OPAC: the button on the left takes to the electronic version

The users selecting the link ‘electronic journals’ found a page containing information about the collection and about how to search it, together with the link to the e-journal locator (see Figure 4). This page proved to be problematic. The text-heavy presentation resulted in confusion and hesitation among most users, who did not spend more than few seconds for reading the instructions and often failed in selecting the link for the connection to BibEl. Only one faculty member selected the page of instructions first and carefully read the information provided before connecting to the database.

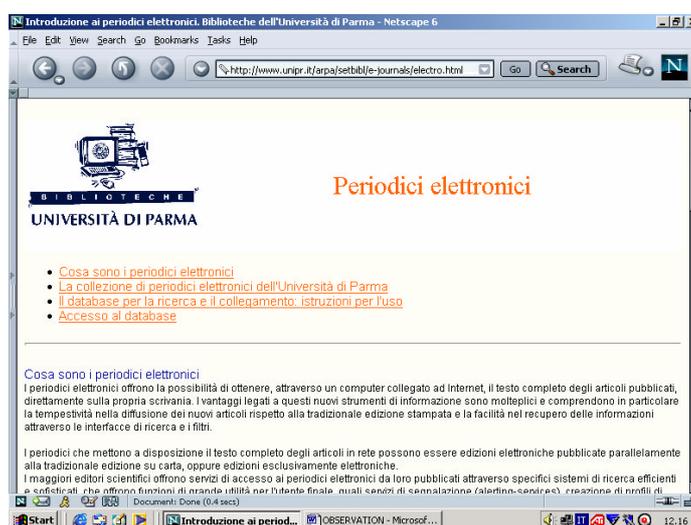


Figure 4. The Electronic Journal Web page.

The BibEl’s graphical interface appeared to have a major usability problem. All the users who chose this way did not understand that it was necessary to select the search option – title, subject,

publisher – by clicking on a little box beside the form in which to type the word. As a consequence, the search did not start (see Figure 5). Three users were able to understand the reason of the error and eventually succeeded in finding the journal without other problems. The title browsing function did not prove as an evident alternative option to find e-titles. Only the faculty member realised that it was also possible to browse the alphabetical list, and eventually succeeded in finding the e-journal. As they were finding difficulties with title search, most users looked at the possibilities offered by the subject search, but eventually no one tried this option. One graduate student got frustrated after several tries with the search option and gave up searching.

Users tended not to read instruction or information until they were in difficulties. Only one faculty member spent time on reading with attention the instructions before starting to search BibEl. Her attitude and body language during the test clearly showed her intention to demonstrate that she knew how to explore Web sites. However, she proved that the instructions were not effective: she did not understand the need to select the search criteria – only after three tries she succeeded in performing her search – and eventually found that the periodical was available only from 2000.

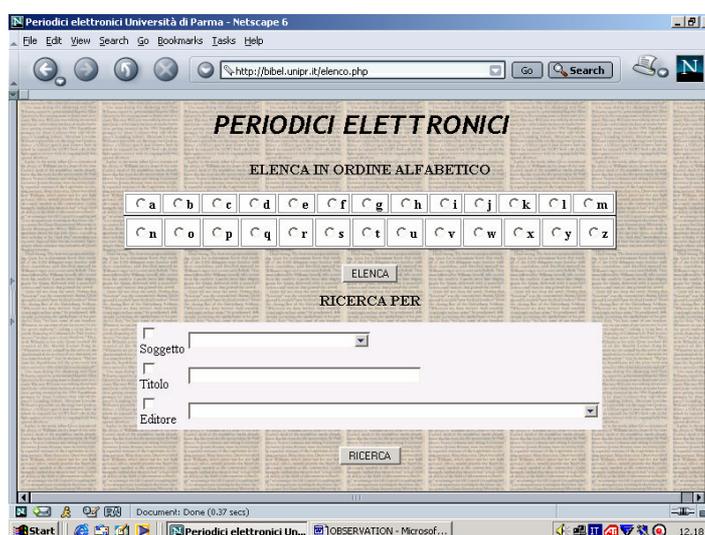


Figure 5. The BibEl's user interface

5.6 User expectations on effective methods for locating e-journals

One of the objectives of the present research was to discover what method for locating e-journals was more likely to meet the expectations of the group of users under study. Users and librarians were asked to speculate about the usefulness of a number of possible approaches. Most of them were available at the time of the research, such as access by subject on the Web site, access by A-Z list on the Web site, access through the OPAC, access from references in online bibliographic databases. The possibility to be provided with a unified interface for searching multiple resources was considered only a possible future development.

5.6.1 The OPAC

As the focus group meeting showed, the librarians believed that the OPAC was the most suitable method to locate e-journals for the group of users under study.

However, most of the participants in the usability test revealed that they did not expect to find e-journals in the OPAC, because they perceived the catalogue as a tool for finding books and because they did not feel comfortable with it.

Among the interview respondents, the non-users of e-journals who were likely to search journals in the OPAC seemed to be favourable to access from the catalogue. They would feel encouraged to explore the electronic version if they found the link together with the printed version's location.

“...perhaps for me the catalogue is better. I mean that when I find the record that the journal is in some library, [it would be useful] to find the notice ‘this journal, you can find it directly online’.”

Undergraduate student

“Given the predominance of using traditional resources, I would prefer to have them [e-journals] among the traditional resources, because I use more frequently the catalogue. For instance if you add a title in this list and I don’t know this, several months could pass before I realised it, or even I’d never discover it. Through the catalogue I think I would discover it earlier.”

Faculty member

However, the non-users of e-journals who did not feel comfortable with the OPAC seemed to be less favourable to add e-journals to the catalogue.

“This [to add e-journals to the OPAC] would presuppose that one who is looking for a journal has necessarily to search the catalogue. Perhaps in theory one should use it, but if he knows that the journal is not available in printed format, he doesn’t pass through the catalogue to access the electronic journal. Also for many printed journals one doesn’t pass through Sebina [i.e. the OPAC].”

Faculty member

The interviewed people who claimed to be e-journal users were more likely to be provided with a separate discovery system for e-journals, but would agree about having links to e-journals in the OPAC, if the tool allowed separate search for books and journals.

“In my opinion it’s better to have a separate system for electronic journals. It’s a matter of two different logics ... In any case, I think it would be useful to maintain a separate search between books and journals [in the OPAC]. To have two different accesses would be more practical for me.”

Faculty member

All the questionnaire respondents were asked to indicate which system for locating and accessing e-journals would be more useful for them, with the question framed in terms of scale such as ‘useless’, ‘not very useful’, ‘useful’, ‘very useful’, and ‘don’t know’. Table 21 summarises the respondents’ preferences. The overall results indicated that adding e-journals to the OPAC was the most useful method for facilitating users to discover e-journals, with 55.2% of respondents rating it very useful, closely followed by organising an access by subject on the Web site (53.4%).

Table 21
Usefulness of the different methods for locating e-journal

	<i>All combined</i>					<i>Faculty members</i>					<i>Gr</i>	
	Useless	Not very	Useful	Very	Don't	Useless	Not very	Useful	Very	Don't		Us
	%	%	%	%	%	%	%	%	%	%		
OPAC	1.7	3.4	34.5	55.2	5.2	10.0	0.0	20.0	60.0	10.0	(
Access by subject on the Web site	1.7	8.6	24.1	53.4	10.3	10.0	10.0	30.0	10.0	40.0	(
Access from references in bibliographic databases	1.7	8.6	32.8	41.4	15.5	10.0	0.0	40.0	20.0	30.0	(
Alphabetical list of titles on the Web site	1.7	13.8	31.0	39.7	13.8	10.0	10.0	60.0	0.0	20.0	(

A comparison between the first choice of users and non-users can better explain the results obtained and confirm the data collected through the interviews. As shown in table 22, both adding links to the OPAC and providing subject listing of e-journals on the Web pages were strongly valued by non-users – the same percentage (60.0%) of respondents rated the two methods very useful. This result for non-users was not different from what was discovered at the University of Bath for the Humanities faculty users [21], and seemed to indicate that access from the OPAC was one of the most suitable approaches to facilitate non-users to discover e-journals.

Table 22

Usefulness of the different methods for locating e-journals for users and non-users

	Users rating very useful %	Non-users rating very useful %
OPAC	44.4	60.0
Access by subject on the Web site	38.9	60.0
Access from references in bibliographic databases	50.0	42.5
A-Z list of titles on the Web site	50.0	35.0

A breakdown of user figures by types of users showed that adding e-journals to the OPAC was the first choice of faculty, with 60% of respondents rating it very useful (table 21).

5.6.2 Access by A-Z list on the Web site

The interview respondents who were more likely to be provided with a separate e-journal discovery system on the Web felt that browsing an alphabetical list of titles was the easiest and most reliable way for identifying a title.

“I prefer to search by title, essentially for distrust that within a discipline definition I can find a title and not another one. It’s for caution. Within a list I’m sure that I find it. Perhaps I prefer a list in alphabetical order.

Graduate student

“According to me, the access by title is the most direct one.”

Graduate student

The overall questionnaire results did not show a positive result for the access through an alphabetical list of e-titles on the Web site, with only 39.7% of respondents rating it ‘very useful’ (table 21). However, table 22 showed that this approach, together with accessing from references in online bibliographic databases, was the first choice of e-journal users, half of them indicating it ‘very useful’.

5.6.3 Access by subject on the Web site

Some librarians suggested maintaining specific lists of e-journals on the Department or library Web pages. This approach would contribute to promote the knowledge of the service. However, their opinion is not shared by all participants, because a great deal of research in this field was interdisciplinary and this approach would have hidden resources rather than highlight them. Users would be better facilitated if provided with a single access to all the titles available through the UP libraries, but this tool should emphasise the access by subject.

The current approach of access by discipline was widely judged unsatisfactory, because too broad. In their opinion, the possibility to encourage humanists to embrace the opportunities offered by e-journals was highly dependent upon a more effective access by subject:

“the organisation of e-journals by discipline must be more specific, otherwise it’s unlikely that our users find the relevant titles in their area.”

“I would favour the approach by discipline or subject. I think it’s the easiest one for users. For instance I recently discovered that there are relevant titles for philosophical studies in Blackwell Science e-journals, and I had the opportunity to find them through browsing the site by discipline”.

The interview respondents seemed to be quite favourable to this approach, for one of them being absolutely the best solution:

“If I can offer some suggestions, it would be necessary that someone realised a number of reasoned lists of titles, for instance a philosophy librarian should work to a list of titles. For every title the site should be clear where one can access the online. This would enormously simplify the work for us!”

Faculty member

However, most respondents expressed concerns about the definition of appropriate subject areas. If the subjects were too narrow, there would be the risk of excluding relevant journals and forcing users to browse several lists. Most respondents observed that, since they often used interdisciplinary resources for research, a narrow definition of subjects would not meet their needs.

“In theory this is the right thing because it goes towards a better economy of the research. However, in our area these tendencies are a bit dangerous, because they can prevent us from discovering things by chance and in eccentric journals that could nevertheless interest us. There are interdisciplinary links that are important. Otherwise, if this rule is very rigid these possibilities might be removed. But if the rule is used with intelligence, I think it is a useful function.”

Faculty member

On the other side, the subject area should not be too broad or simply coincide with an administrative definition.

“I like the approach of having the e-journals grouped by discipline. But not to treat everything in the same way, for instance ‘Faculty of literature and philosophy’, and rather to divide the titles under different disciplines. For multidisciplinary resources it should be possible to have many links.”

Faculty member

“I think the area should be rather general to be useful.”

Undergraduate student

As this approach seemed to require great care and competence to be effective, one faculty member suggested that such a work should be done as a cooperative effort between librarians and researchers:

“If the librarian is competent, he’s able to realise this approach by discipline. But this does not mean that he should be alone in this activity. I’m thinking of a collaboration between librarians and academic staff.”

In order to overcome the weakness of this approach, it could be combined with a second option, such as the A-Z list of e-titles. If any user felt it difficult to define their topic of research through a rigid discipline-based framework, in this way they would appreciate the possibility to use a more reliable tool.

“I’m not convinced ... there are journals that belong to several areas, so it should be o.k. if the same title appears under more than one definition. But if I’m not sure that this is done, for me this is a problem. I think that it should be possible to have a list by title and a list by discipline ... yes, I’ve already found something like that and this is better.”

As the overall questionnaire results showed, access by subject was the second most useful choice, 53.4% of respondents rating it 'very useful' (table 21). As shown in table 22, together with access through the OPAC this was the most useful approach for the non-users of e-journals, 60% of them considering it 'very useful'.

A breakdown of user figures by type of users, indicated that access by subject on the Web site was the first choice of undergraduate students, 68.6% of them rating it very useful.

5.6.4 Access from references in bibliographic databases

According to the librarians, a direct link from references in index databases to electronic journals was useful, but only as an additional point of access. As Classics and Medieval studies scholars and students used multiple methods to keep in touch with the published literature, it was quite likely to find article citations from different sources.

"...it [access from databases] would be useful, but it depends on the research you are doing. If you don't use that specific database this access is useless.

Most interview respondents seemed enthusiastic about being provided with direct links from references in bibliographical databases to e-journals. This function would facilitate research, reducing the necessary steps and saving time. However, some respondents did not see this as a realistic possibility because too complex to realise.

"Of course it would be wonderful because in this way two different searches would be unified. Anyway, I think that there are lots of technical problems in doing this."

Faculty member

"Sometimes – but really in a very few cases - PCI gives this possibility, and it's worthy. It's a short cut."

Graduate student

However, one faculty member perceived this full-text linking option as disadvantageous for the quality of research:

"I don't know...I would be tempted to say 'yes', but the advantage of databases is that they offer a wide range of data, often lots and lots of data. Then, it's better to keep the moment when one checks the things to read separate from the phase of research of materials. I think these are different things. If one sees the text of an article he's tempted to read it immediately, but this is a waste of time. [...] I think that maintaining these two phases separate is more practical for me."

Of the questionnaire respondents, 41.4% indicated access from the references in bibliographic databases as 'very useful' (table 21). However, this was the prominent method for graduate students, 61.5% of them rating it very useful, and one of the two most suitable approach for e-journal users, half of them choosing it as 'very useful' (table 22).

5.6.5 Single user interface

The interview respondents were asked to speculate about the possibility to be offered a single user interface for searching many different electronic resources, such as the UP libraries OPAC and other library catalogues, bibliographical databases and full-text databases. Most respondents felt suspicious about this possibility and simply considered this approach too far from their experience to be able to express an opinion about it. They worried that through such tool one could retrieve too many and irrelevant items, becoming confused and dispersing their efforts. Respondents also expected that such interface required time and efforts to be learnt. Furthermore, they preferred to search only few relevant

resources and eventually to expand the search later, rather than beginning with a single broad search in several resources.

“I cannot imagine how this tool could be, but I think it’s a cost-benefit matter. As eventually one has to do no more than three or four searches, if he knows what to do and where to look, he doesn’t need this service ... the sites with many items look useful, but require a good research strategy.”

Faculty member

“It depends whether using this tool is easy or not. Then, in my opinion you risk finding things that you don’t need and eventually your search is long. You have to eliminate lots of materials. I think this would be the least congenial method for me.”

Graduate student

“But we already know this interface by using the search engines! As far as I’m concerned I don’t miss it in our libraries. I prefer distinct accesses for different resources. It’s more practical, rational and eventually one doesn’t waste his time.”

Faculty member

As most interview respondents found it difficult to understand how a single user interface could be and needed explanations from the interviewer, it was decided not to include this issue in the questionnaire, as the risk to create misunderstanding was reputed high. However, the evidence collected through the sole interviews suggested that, differently from what has been discovered in other contexts, the single user interface seemed not to be part of this group of users expectations on electronic services access [22].

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6 CONCLUSIONS

Electronic journals have large potential benefits for the students and academic staff in Classics and Medieval studies. The users in this study indicated a number of advantages they expected to find from an e-journal service:

- Access to a wider range of journals
- Access to current information
- Access to articles published in the past
- Fast access to information
- Easy access to information

However, at the moment of the research e-journals were largely under-used. While recognising that the new technology facilitated access to information, the investigated people perceived a number of barriers and difficulties which prevented them from accepting the new resource, such as the little number of titles available in their discipline, the insufficient availability of back issues, the lack of information. Furthermore, both students and faculty staff seemed to feel a kind of distrust about e-journal technology, which they perceived as difficult to use, unfamiliar, requiring huge efforts to be effectively managed, not as reliable as the traditional printed tool, and resulting in a great deal of irrelevant information. What should the UP libraries do for assisting this group of users in the transition from the printed journal to the electronic one? The present study was carried out with the purpose to investigate the role of the discovery system in the promotion of e-journal service and focused on four research questions about the approach to use for organising e-journals.

Does the e-journal discovery system adopted by the UP libraries have an impact on the use of e-journals by this group of users?

The evidence collected through the interviews and the questionnaire showed that most users were unaware of the journals available in electronic format in their discipline. Lack of awareness was the first reason for non-use indicated by the questionnaire respondents. It was also the major barrier perceived by librarians: their customers were not using e-journals mainly because they never discovered them. Not only non-users and infrequent users appeared to be unaware of e-journals, but 'sophisticated' and frequent users too did not seem informed about a number of resources available to them. Students in particular were the users that appeared less likely to get in contact with e-journals. The e-journal Web site was quite a popular access point to e-journals among the users of the service. Most interviews respondents, however, often adopted different methods to access full-text journals, not always successfully, and some of them had not even discovered that there was a service for accessing e-journals on the Web site. If lack of information and lack of confidence with technology were the main barriers for non-users, also e-journal readers showed some discomfort with e-journals and did not perceive them as easy to use. All these aspects seem to suggest an ineffective role of the discovery system in promoting users' awareness and providing support. Earlier studies on e-journals use have largely demonstrated that lack of awareness is one of the prominent barriers to e-journal acceptance, and that the discovery systems are the key resources in this area.

But if the discovery system seemed to play a limited function in promoting the service, it also appeared not being part of a more general promotional strategy of the UP libraries. No library was promoting BibEl among users, while additional initiatives for signalling e-journals were poor and not consistent: for instance only few resources seem to have been promoted and only once, when they were acquired. Promotion, as it appeared from interviews and questionnaire results, was more based on individual information and personal interaction than on training sessions, workshops and presentations, and more focused on faculty members than on students. Promotion seemed to rely upon traditional methods, rather than making use of the opportunities provided by technology.

What is the most suitable method for organising e-journals from the perspective of this group of users?

The investigation aimed at exploring what method of presenting resources was more respondent to the research habits of the group of users under study: the OPAC, browsing an A-Z list, browsing by subject, or being provided with a single interface. As the findings showed, the currently most popular

method for users to access full-text journals was BibEl. This can be explained considering the high importance of the link 'Electronic journals' on the libraries Web site home page and the fact that both the number of e-titles added to the OPAC and the linking options from bibliographic databases were still limited. A gap was found between the opinion of librarians and the one of the investigated users. The librarians believed that the OPAC was definitely the most suitable method to access e-journals for the group of users under investigation, because it was the system that they were most familiar with. On the contrary, the interviews and observations provided evidence that users perceived the OPAC mainly as a tool for searching books and other printed materials and that most of them never used it to search journals. The examination of a wide range of information collected through the different techniques allowed recognising some major factors that seemed to be at the basis of users' preferences:

- Use or non use of e-journal
- Habit of searching printed journals in the catalogue or using other methods
- Status of users

Non-users of e-journals who were likely to search journals in the OPAC seemed to expect to have the possibility to access full-text journals from the catalogue records. Conversely, non-users of e-journals who did not like the OPAC as a tool for searching journals appeared to prefer a separate discovery system on the Web site, and to mostly appreciate an access by subject.

Users of e-journals seemed to prefer a direct access through a Web-based tool rather than the OPAC, and believed that browsing an A-Z list and access from references found in bibliographic databases were the most useful methods. As for the status of respondents, faculty members seemed to be the users most favourable to the OPAC as channel for discovering e-journals. The catalogue appeared a familiar source of information to them. Graduate students seemed to expect a more widespread linking option from the bibliographic references in online databases, while undergraduate students were more favourable to be provided with a point of access organised by subject. The described preferences are summarised in table 23. It appeared that e-journal users expected direct and fast methods to access full-text journals, while non-users were more interested in being provided with a reference context where to discover full-text journals.

The interviews provided further insights into the users' point of view on the e-journal organisation. If some librarians tended to apply to the e-journal organisation an 'administrative' model, thinking about creating department lists of e-titles, users were instead worried that too narrow a definition of subject areas could hidden relevant resources and refused an administrative definition of their discipline. Moreover, they did not appear interested in being provided with a single interface to access all e-resources, but rather preferred an approach that allowed the selection of few relevant and well-known resources.

All these data seem to confirm that the users' perception of easy searching is connected with the familiarity of the system and with its similarity to the other library facilities that they know well. Students and faculty members in Classics and Medieval studies have a fragmented library service, and they have different habits of searching journal literature: for instance some users can access directly the shelves and browse the volumes, while others, who mainly use close-stacks libraries, have to search the catalogue and ask the library staff for a specific volume. In this library service context it appears that a multiple access strategy, including both the OPAC and a Web-based presentation by subject and by A-Z list would be suitable to maximise promotion of the service.

Points of access	Types of users
OPAC	Faculty members Non-users of e-journals who used the OPAC
A-Z list on the Web site	Users of e-journals
List by subjects on the Web site	Undergraduate students

	Non-users of e-journals who did not use the OPAC
Access from bibliographical references in databases	Graduate students Users of e-journals

Are the currently available methods for localising e-journals easy to use and in tune with the research habits of scholars and students?

The research findings seemed to indicate that the approach adopted by the UP libraries, which provide a web-based access by A-Z list, by subject and by keyword, and access through the OPAC, was suitable to meet the expectations on easy searching by this group of users. The research aimed also at evaluating how effectively this approach has been realised in the design of the discovery systems. It appeared from the usability test that both methods provided to users – BibEl and the OPAC - were not self-evident and easy to use, but rather presented several problems, which in some cases caused unsuccessful searches. For BibEl the main points seemed that the query form should be simplified and that the instruction about how to select search options should be provided in the user interface – this instruction is given in the instructional page – but other areas such as identification and location are usable. However, the problem at the interface level was a serious point of failure, because users could not take advantage of the different search options provided. Instead, the catalogue showed problems both in identification and in location. The first problem was caused by the unclear method for limiting the research to serials only. The problem with location was due to the difficulty for users to understand that the symbol of a pile of books is the link to the online version. Furthermore, the observations confirmed that users invest only few seconds per page and that library jargon is a barrier to effective communication on library Websites. When unable to solve a step of the search, the users' attitude was to give up and try an alternative way. This appeared a confirmation that users follow 'least effort' behaviours in searching information. The consequences that poor usable discovery systems can have on the usage of e-journals are clearly understandable. If the users looking for an article encounter so many difficulties in coping with the e-journal service access, it is highly likely that they prefer turning to a more familiar service, such as browsing the printed volumes in the library.

How should the UP libraries organise the service to meet the expectations of this group of users?

The collected information revealed that the actual design of BibEl does not meet the users' expectations on easy searching. The findings of observations showed that the service does not provide task support and it was scarcely usable. Some major improvements should be implemented:

- The interface should be simplified
- Explanations should be given at the point where the user need them, not in separate places
- Information should be synthetic, simple and understandable to all users
- Attention should be given to avoid jargon and to use unambiguous terms

If libraries aim at increasing the use of e-journals and attracting potential users, it would be useful integrating e-titles into the catalogue and constructing a more appropriate point of access by subject. As some interviewed faculty member suggested, librarians could cooperate with academic staff in identifying appropriate subjects and in selecting the relevant resources to include. This could also contribute to enhance the scholars' awareness of the resources. The research findings suggest the need for much better promotion of e-journals to ensure that both actual users and potential users are aware of e-journals relevant to their subject area, and know how to access them. The investigated students and faculty staff showed great expectations on improved information about e-journals.

The research also found that there was poor communication about e-journals at different levels: between the library staff and the Settore Biblioteche, between the library staff and the faculty members and students, and between the faculty staff and the students. There was ample evidence of this aspect. First, the library staff appeared inadequately informed about the UP libraries policy for organising e-journals, and did not seem to have correct information either about BibEl or about the resources available. Moreover, they did not feel involved in e-journal management, but rather tended to think that e-journals were an issue of the Settore Biblioteche only. This was a major point of failure for the promotion of e-journals, because communication between the acquisition service and the reader service is an essential component of effective signalling of resources. Secondly, the faculty staff awareness of e-journal was poor and was not effectively supported by the library staff, who seemed rather to have the perception that promotion of e-journals should be done by the Settore Biblioteche. This appeared as a second major point of failure in promotion. If academic staff are not aware of e-journals it is unlikely that they integrate these resources in learning programmes and that students get in touch with them. Finally, the students, in particular undergraduate students, appeared as the least informed users about e-journals. As shown by previous studies about the use of electronic information in universities, personal communication with library staff in department libraries and with friends/colleagues were the most important information sources about e-journals [1], but for students the main channel of information is represented by their professors. Establishing good communication between library staff and key academic staff was found to be one of the most important way to achieve effective use of electronic resources.

Communication about e-journals seemed a critical issue at UP because these resources are directly selected, purchased and managed through a central unit (Settore Biblioteche) with very limited involvement from the department/faculty library staff and the academic staff. In the printed context, there are effective links between the faculty members, who select new materials, and the library staff who manage acquisition. The new acquisition policy for e-journals would need the creation of a suitable communication strategy to make sure that academic staff is aware of relevant resources. It should also involve the evaluation of e-journals. For instance, the research provided evidence that faculty staff read some free e-journals, which were considered authoritative resources and were not included in the library discovery systems, while they did not use other purchased e-titles.

The findings of the present research, supported by the results of previous studies on promotion of electronic services, suggest that an effective promotion of e-journals in the Classics and Medieval studies should include:

- The provision of multiple paths to find e-journals, lists of categories and easy searching
- A promotion policy with a strong commitment from the highest level (Commissione di Ateneo per le Biblioteche, Settore Biblioteche)
- A strictly coordinated action by the Settore Biblioteche's staff and department/faculty library staff so as to ensure that e-journals are appropriate and signalled at the points of need.
- Local library staff alerting academic staff of the e-journals which could be beneficial to them and providing training and support in the use of these resources
- Joint effort by the faculty staff and the library to ensure that the e-journals provided are carefully evaluated with respect to quality and accessibility.

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7 RECOMMENDATIONS FOR FURTHER RESEARCH

This study examined only the point of view of students and faculty members in Classics and Medieval studies since its purpose was to conduct an in-depth exploration of a homogeneous group of users. Other disciplines in the humanities were not investigated because the focus would be too large for a single researcher. However, a study of the attitude towards locating e-journals among the Literature and Philosophy students and academic staff would provide valuable insights into this multifaceted issue. Furthermore, it would be important to compare the different perspectives of the disciplines represented at the UP in order to adopt an organisation suitable to the various groups of users. In addition, the present study is limited to the students and faculty staff in one discipline at one university. Results from other institutions may look different, depending on a number of factors including the local provision of library services, the number of resources available, and the promotional activities.

One of the most surprising findings of the research was that undergraduate students, even those attending the final years, appeared unlikely to use journal literature. A study of the information needs of students would provide important enlightenment about this issue. Of particular interest is the question whether non-use means that journal literature is not embedded in learning activities, or rather is caused by poor information skills. This study would have relevant implications for the collection policy of the UP, also given the considerable investment made in e-journals.

Finally, the present study provided evidence of communication problems among the library staff about the e-journal service management. The purpose of the research was not to examine the promotion of e-journals from a librarians' perspective. However, a study of the role of librarians in the delivery of e-journals and in the management of the service would provide valuable information for establishing good communication and effective provision of the services to users.

8 LIMITATIONS

Being a small-scale research undertaken by a single investigator, the present research had some major limitations. First of all, the phase of discovery and access is only one aspect of the complex experience of using an e-journal service. During the various steps of the interaction with the e-journals features a number of intervening factors could influence and even change the user behaviour towards full-text journals. Because of the constraints in time and resources, the present research has not considered these intervening factors.

The second limitation is the restricted group of users investigated. The Literature and Philosophy faculty, with more than 7,000 students and fourteen courses, was too large a subject to study, because of the great number of different disciplines, types of users, information requirements and research habits. It was decided to focus on a restricted group of users pertaining to a homogeneous discipline area, the Classics and Medieval studies, but to include different types of users. Therefore the research can provide useful information to librarians interested in promoting e-journals among similar groups of users, but has only a very limited applicability to librarians engaged in organising e-resources in wider contexts, with many different disciplines. Moreover, the results of the research are strictly related to the moment in which the investigation was realised. As the situation of electronic services and products is continuously evolving, and the users' behaviour towards electronic technology too, it is highly likely that the same research undertaken in two years' time would give different outcomes.

Although the techniques adopted in the present research - questionnaire, observations and interviews - are widely considered as user-centred methods, useful to investigate the customers' behaviour, they present the limitation to rely solely on users' own accounts and on observers' perceptions. Therefore, these methods yield significant findings about the user expectations on e-journals, but are not appropriate to investigate how users really work with e-journals [1]. Although information about use can be obtained also through questionnaires, the best methods to obtain insight into use are log analysis and statistics. Many commentators agree that only a combination of the different research methodologies can allow the researcher to develop a complete study [2].

Unfortunately, at the time of the research the UP libraries did not collect yet statistical data about usage. An attempt was made to organise log analysis, but it proved impossible because of the lack of necessary technology by the CCE.

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9 REFLECTIVE REVIEW

The following section contains a reflection on the process followed to carry out the present research. It is based partly on the notes taken during the development of the investigation in the reflective journal, partly on the considerations made at the end of the work.

Dissertation proposal

The dissertation proposal, submitted in December 2002, was the starting point for the development of the project. However, it was soon clear that the identified focus – the need of the Literature and Philosophy students and faculty members on locating e-journals - was too broad and too ambitious for a single researcher. Consequently, it was necessary to narrow down both the topic to investigate – only the users' perceptions and expectations - and the population, which was limited to a group of users in a discipline of the humanities area. Therefore, the first step in the research was to outline a new definition of the problem to investigate, the aims, objectives and research questions. More than once during the investigation it was necessary to come back to this framework, in particular when there was a problem to solve or when too many data were found, with the risk of diverting from the focus of the research.

Literature review

The examination of the literature was conducted at the beginning of the research with the purpose of developing a deep knowledge in the field of e-journal organisation, establishing the initial theoretical framework to guide the investigation, and identifying the preliminary categories. Then, the literature examination continued during the research, in order to deepen the themes that were emerging from the collected data and to help the interpretation of the observed events.

The analysis of the professional literature addressed three questions related to the research:

- What are the technologies that libraries can adopt for organising access to e-journals?
- What studies have been conducted to assess the impact of the discovery systems on the users' attitude towards e-journals?
- What efforts are underway to organise e-journals in order to facilitate identification, localisation and access for all users?

The literature review on e-journal use studies, which was realised as part of the BP100 unit, was the starting point for the new process. However, since the focus of the present research was rather narrow, the work previously done was useful only as a general framework. For instance it provided an overview of the factors that can influence user's behaviour – and therefore the use – in an e-journal service. The organisation of the points of access was one of these factors. However, several other aspects had to be explored in this area. The research began with LISA, which is the most important indexing and abstracting service for LIS researchers, and was then extended to other full-text databases such as Emerald and Science direct. The initial research was conducted using the following terms: electronic journals organisation, electronic journals access, user studies, and electronic resources organisation. The databases retrieved a large number of items. Most of them were journal articles, partly available in electronic format, and were more focused on technology than on users. Other references were found in the footnotes of articles and books. The oldest items were obtained through ILL and DD. A few studies were free Internet resources. This phase of the research was stimulating and informative, but perhaps longer than expected because it was easy to deviate from the core questions and explore issues not relevant for the research.

Focus group

The focus group was the first data collection technique used. It provided the initial information about the group of users under investigation and about the librarians' role in presenting e-journals. The experience was positive for several aspects. First of all, the organisation was successful, no problems were found in persuading librarians to participate to the discussion and in scheduling the meeting. All participants took part in the discussion and it was possible to meet the planned time frames. If at the beginning of the discussion people tended to speak one after the other and seemed to perceive the presence of the tape recorder, after a while the discussion became more spontaneous. The focus group appeared to be balanced, nobody being predominant or influencing the opinions of the other librarians. Tape recording and transcription were not problematic. It was very useful to have an assistant moderator who took care of recording the discussion and took notes. Moreover, the discussion

highlighted a great deal of relevant information, which was the basis for further exploration with interviews, observation, and the questionnaire. Finally, the focus group seemed to be a positive experience for the participating librarians. Their final comment was that they found the experience interesting and that before the meeting they did not realise that they had to talk so much about e-journals.

However, a reflection on the meeting identified also a number of problematic issues that should be differently managed in future experiences. For instance, it was clear that people tended to speak more at the beginning of the discussion, which was the introductory part, while they appeared to be tired in the second part, which was the key section of the focus group. Perhaps the number of introductory questions was too high. One of them appeared to be repetitive. Furthermore, some questions were not immediately clear to librarians and there was need of explanations, especially in the second part of the discussion when participants looked tired. It was necessary to suggest some aspects related to the e-journal service, such as promotion or technical equipment, because they did not spring naturally from the discussion. The general impression was that librarians had never reflected about this topic.

Observations

As it was the researcher's very first experience as observator, there was an initial worry about the possibility of recording unreliable data or distorting the situation under observation. For this reason the test was very carefully designed and two pilot observations were carried out earlier on. Nevertheless, it was a very positive experience and absolutely the most stimulating part of the research. Implementing the test was inexpensive, straightforward and informative. Observation proved to be a very relevant technique for the research, because it allowed discovering things that had not emerged from other techniques. For instance, finding technical difficulties in coping with BibEl was only partially mentioned by the people interviewed, perhaps because they never reflected about this. It was surprising to discover how much information it was possible to collect through observing few people interacting with an interface for only few minutes. The main identified difficulty was the fact that observation requires a lot of concentration and a great ability in observing and taking notes at the same time. The risk is to miss some relevant aspects. Perhaps, with a more complex project and a larger sample to observe, some form of recording would be useful too.

Interviews

The interviews provided a great deal of in-depth information about the users' perceptions of e-journals, their expectations on the service and approaches to discovery of e-titles. As expected, designing the questions, scheduling the meetings, transcribing and analysing were all time consuming phases. The support of librarians as key contacts was crucial for mediating with faculty staff, gaining access to graduate students and facilitating data collection. However, scheduling the meeting with faculty members was sometimes problematic, and in a few cases it was impossible to find a suitable date. The questions were carefully designed and tested, because it was expected that a high number of respondents did not have great familiarity with e-journals and could find it difficult to understand the technical terminology or to speculate about unknown services. The experience was largely positive, because all interviewed people were collaborative and seemed interested in the topic. Conversations were stimulating and highlighted some themes that had not been foreseen. However, asking questions proved to be a challenge. Especially during the first interviews, it was difficult to follow attentively the responses, making sure that the relevant points had been covered, and at the same time to decide the next suitable question to pose. It was also difficult to keep the conversation focused on the theme of the research when some respondents began to talk about irrelevant topics. There was also a problem with the terminology used in the field of library services. Despite the efforts to avoid jargon, the language of librarians was found very different from the one of users. For instance, one respondent during the conversation used frequently the term 'catalogue', but after a while it was clear that she was speaking about the Web site. Similarly, the respondents did not have a clear idea about the distinction between databases and e-journals or between databases and online catalogues. Obviously, the latest interviews went better than the first ones. Recording everything was useful, because the transcription phase allowed discovering some aspects that had not been acknowledged during the conversation. Conversely, a few things that initially appeared clear, once transcribed were found problematic. In two cases it was necessary telephoning to respondents and asking for explanations.

Unfortunately, the tape recorder broke down during the last interview, and therefore the last tape was inaudible. In this case the notes taken during conversation were particularly useful, but the direct words of the respondent got lost. Perhaps further checks of the tape recorder would have been helpful.

Questionnaire

Both the questionnaire planning and analysis were the most problematic areas of the research. First of all, it was difficult to make contact with undergraduate students. As Classics and Medieval studies have large student numbers, it was not possible to send out questionnaires to all students. However, the selection of a representative sample was not easy. The technique adopted for contacting students, with the questionnaire e-mailed to the students registered in a summer session exam, enabled to include a good variety of students, but the low response rate suggested that this was not the best technique to involve students in the research. Perhaps it would be better to contact them through willing faculty members, interested in the topic of the research and pleased to give their support. Secondly, the questionnaire was e-mailed to students as an attachment. Although the pilot tests had not revealed problems in reception and returning of the form, several students of the participant population found difficulties in coping with the attachment. The students' technical skills were somehow over-estimated, and no sufficient attention was paid to the quality of computers available to students. For instance, one student went to the researcher office and asked for a printed copy of the questionnaire, because her computer did not allow opening attachments. The fact that students have an e-mail address does not mean that they are able to cope with the attachments, and the introductory letter was not always sufficient to provide help. Perhaps it would be easier for respondents to receive the e-mail questionnaire as a text message. The technical difficulties may have discouraged students to respond to the questionnaire and therefore decreased the response rate. Finally, processing and analysing the data collected took longer time and proved more compelling than expected. The time planned for this phase in the research timetable was largely underestimated.

Overall comments

The choice of using triangulation of research methods had very positive results in building a coherent picture that included the perceptions of users and their actual experiences. It was often possible to overcome the weaknesses of one technique in a specific issue through the insights obtained through another technique. For instance, no faculty members who responded to the questionnaire indicated that their awareness of e-journals was low. Instead, the interviews and the observations proved that if they were not completely unaware, their knowledge was at least poor.

The research gave unexpected positive outcomes. First of all, it increased the respondents' interest in e-journals, as revealed by the interactions with the library users during and after the research. Secondly, the communication established with respondents was positive, and allowed the exchange of useful information: during the conversation they often discovered issues about electronic resources that they did not know before, while the interviewer obtained insights about the users behaviours towards the library service and staff, which were not obvious. Finally, the research seemed to have a positive reaction also among the librarians participating in the focus group, since at the end the researcher found that information both in the OPAC and in BibEl had been updated with many relevant e-titles in the humanities. Librarians seemed to be encouraged to improve information about the e-journal service.

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APPENDIX 1

INVITATION TO THE FOCUS GROUP MEETING

Parma, April 1st 2003

Dear colleagues,

Following the telephone conversation with each of you, I would like to ask your kind collaboration and to invite you to a focus group meeting centred on the use and interest of faculty and students in Classics and Medieval studies in e-journals.

As I informed you, the discussion with the librarians about this topic is part of the research I am doing for my Master dissertation in Library and Information Science. The purpose of the research is to investigate the organisation of e-journals from the point of view of the users in the above mentioned field: what is the perception of the provided service and what are the expectations on a service which meet their information needs and research behaviours.

During the focus group I will propose you a number of questions and themes of discussion which should help me to define the users to study, to highlight the use of e-journals, and finally to evaluate the effectiveness of the currently adopted organisation of the titles.

I would like to confirm the place and the time of the meeting: **Seminar room (Literature and Philosophy faculty library), Thursday, April 3rd, at 11:15 a.m.**

The focus group should and at 12:45 a.m.

If you have problems with the proposed date, please let me know as soon as possible.

Thank you in advance.

See you next Thursday.

Best wishes

Fabrizia Bevilacqua

APPENDIX 2

FOCUS GROUP QUESTIONING ROUTE

Question 1 (opening question)

All the librarians who are present this morning work in different libraries. I would like everyone describing what kind of people use the library and why they use it.

Question 2 (introductory question)

This question and the next two questions are about the research habits of users. First of all I would like to know what types of information resources are most frequently used (for instance books, journals, dissertations, microfilms, audio and videotapes, the Internet, etc.) and if users prefer printed or electronic resources.

Question 3 (transition question)

What tools to search bibliographical references to publications are most frequently used (for instance the OPAC, databases, printed indexes, reviews, discussions with colleagues, browsing the library shelves, etc.)?

Question 4 (transition question)

What methods do the users follow to identify and locate the journals in the library? Do they use the OPAC or separate lists of journals or else other tools?

Question 5 (key question)

One of the most important issues for my research is the use of e-journals by faculty members and students in Classics and Medieval studies. On the basis of your experience, does this group of users read e-journals or not? If they use them, why? If they do not use full-text journals, what problems or obstacles can be identified?

Question 6 (key question)

What method does this group of users follow to locate and access the e-journals they need (for instance the e-journal locator, the OPAC, asking to librarians, search the Internet, etc.)? How can you explain their behaviour?

Question 7 (key question)

I would like you to reflect about the organisation of e-journals that has been adopted by the UP libraries from the users' point of view. Are the tools for identifying and locating e-journal titles effective or some changes or improvements would be necessary?

Question 8 (key question)

In your opinion, can the method adopted to enable e-journals discovery have an influence on the service use? What other influencing factors can you identify?

Question 9 (ending question)

If you were asked to make suggestions to the Settore Biblioteche about a suitable organisation of the e-journals in order to encourage the Humanities students and faculty staff to make use of the resource, what would you like to suggest?

Question 10 (ending question)

I have asked your support to analyse the use and the non-use of e-journals by faculty and students of Classics and Medieval studies and to understand what approach to the organisation of resources could better meet the research habits and needs of this group of users. Do you think there is any aspect we have forgotten to mention? Is there anyone who would like to add something?

APPENDIX 3

OBSERVER'S COMMENT FORM

Date:

Status: ___ undergraduate student
 ___ graduate student
 ___ faculty member

Department or field of study:

Has the participant ever used e-journals before? ___ yes ___ no

Read this to the user before you begin:

This test is part of a research for a Master dissertation about the e-journal service from the point of view of Humanities students and faculty. The goal of the test is to evaluate how users locate and access e-journals on the University of Parma libraries Web site. I will ask you one question and would like you to think out loud while you look for the answer. I will be timing you and will stop you after 5 minutes have elapsed. Don't worry if you can't find the answer. I am testing the effectiveness of the system provided for accessing e-journals - this is not a test of you! Do you have any questions?

Question: Is the journal Mnemosyne available on-line for the University of Parma users?

Time started: _____

Time stopped: _____

URLs of answer:

<http://bibel.unipr.it/elenco.php>

<http://opac.unipr.it/>

Browsing paths:

home / periodici elettronici / accedi al database

home / OPAC / consulta l'OPAC

Indicate what the user did:

Browsing: (indicate path)

Did the user find the answer? _____ yes _____ no

Describe issues / problems:

User's comments:

Observer's interpretations:

APPENDIX 4

INTERVIEW GUIDE

What methods and tools do you use to know the journal literature of your field?
(E.g.: printed indexes, databases, citations in journal articles, bibliographies in books, citations from

colleagues/professor, browsing journal issues in the library)

Once you have a citation of a journal article what do you do to check if your library hold the journal and retrieve the article?

(explore feelings, problems with the system)

Do you know about e-journals in the field of Classical and Medieval studies that you can access directly from your computer desktop?

Have you any experience of use of e-journals in your research/study?

<i>YES</i>	<i>NO</i>
How many times have you accessed e-journals during the last month?	There are people who do not use e-journals because they never discovered this service, while other people tried it but they did not find the service interesting. How can you describe your experience about this point?
How have you been informed about e-journals?	Some people, if a journal is available both in printed and in electronic format, prefer the electronic one. Other people instead prefer the printed version. How can you describe your opinion about?
What kind of support/training have you received to become familiar with the new resource?	In your opinion, what properties should an e-journal service have to become advantageous for you?
What are in your opinion the advantages of e-journals?	At present, are there any aspects that make not advantageous?
What the disadvantages?	What initiatives should the libraries undertake in order to facilitate the students/academic staff to use the e-journal service?
How do you proceed for finding is a journal is available in electronic format and accessing it? (explore all the methods, ask for examples)	There are many paths for presenting e-journals to users (e.g. OPAC, databases, Web pages description). What method do you think should be useful for you?
How do you feel about using these methods?	Are there any other method that you would like to use?
How do you feel about the 'e-journal site' on the UP Web site?	
What do you think about using the catalogue as system for accessing e-journals?	
What do you think about the possibility to access full-text articles from the references that you find in bibliographic databases?	

Some libraries organise e-journals by subject, so that the user can find all the titles relevant for their studies. What do you think about this option?

If you were provided with a single interface through which searching a number of resources, such as catalogues, databases, e-journals, etc., what would you think about it?

We have seen several different methods to discover and access e-journals. What is the one that you prefer?

Is there anything else that you would like to tell me or any suggestion that should help librarians to better organise the service?

APPENDIX 5

FACULTY MEMBER QUESTIONNAIRE

Dear professor,

I would be very grateful if you could complete the following questionnaire and send it back to the e-mail address fabrizia.bevilacqua@unipr.it by June 26th. The questionnaire is part of an academic work that I am undertaking about the use of electronic journals by students and faculty members of the Humanities faculty. The results will be used to complete a Master dissertation in Library and

Information Studies. All information will be confidential and will be used only for realising the research.

Please, reply to the following questions putting a X into the appropriate spaces.

Area of research

Years of research

1) Do you use electronic journals in your research or teaching activity?

(1) YES

(2) NO

If your answer is NO, please explain the reason replying to the following question:

1.a) This is a list of possible reasons for not using electronic journals. Please, select the items which describe YOUR experience, ticking all relevant points. If you feel that something has been left out, please add it in the appropriate space.

- (1) I don't use journals in my research or teaching activity
- (2) My computer is not adequate
- (3) I find technical difficulties in using e-journals
- (4) I don't know anything about this service
- (5) I don't know where to find the links to electronic journals
- (6) I feel more comfortable with printed journals
- (7) There are not electronic journals available in my field of study
- (8) The number of years in electronic format is too limited
- (9) I don't like reading from screen
- (10) Other (please, specify):
.....
.....
.....
.....

If your answer is YES, please reply to the following questions (from 1.b to 1.g):

1.b) How frequently do you use electronic journals?

- (1) More than once a week
- (2) Once a week
- (3) Once or twice a month
- (4) Once or twice every six months

1.c) How did you find out about electronic journals? *Please, tick all relevant points*

- (1) From a colleague
- (2) From the library staff
- (3) I attended a course on electronic information resources
- (4) From the University of Parma Libraries Web site
- (5) Using the OPAC I found links from records to electronic journals
- (6) From a Web site in my subject (*please specify*):
.....
- (7) Using online databases I found links from bibliographic references to electronic journals
- (8) Other (*please, specify*):
.....
.....
.....

1.d) What support did you receive about electronic journals from your library staff? *Please, tick all relevant points*

- (1) I attended a workshop organised in my library
- (2) I received individual training from the library staff
- (3) I received support from the University Electronic Journal Web site
- (4) I did not receive any kind of training or support
- (5) Other (*please, specify*):
.....
.....
.....

1.e) How do you proceed in order to discover if the journal you are looking for is available in electronic format and to find the link? *Please, tick all relevant points*

- (1) I search a Web guide on electronic resources in my discipline

- (2) When I use online databases I find links from references to electronic journals
 - (3) I look the electronic journal list on my library's Web site
 - (4) I look the electronic journal list on my Department's Web site
 - (5) I look up the site 'Electronic Journals' on the University of Parma Libraries Web site
 - (6) I search the OPAC
 - (7) I go to the publisher Web site and browse the electronic journal titles
 - (8) I use a Web search engine
 - (9) I have saved the electronic journals Web addresses in my 'favourite' Web sites
 - (10) Other (please, specify):
-
-
-

1.f) This is a list of possible reasons for using electronic journals. Please, tick the items which correspond to YOUR motivations. If any important aspect has been left out, please add it in the appropriate space.

- (1) Using electronic journals is more convenient than travel to the library
 - (2) Electronic journals are available 24 hours a day
 - (3) Using electronic journals saves time
 - (4) Electronic journals are more updated than printed journals
 - (5) The use of electronic journals is easy
 - (6) Among electronic journals I find titles which are unavailable in printed form in my library
 - (7) I can search many years at the same time
 - (8) I can access an article directly from the bibliographical reference in online databases
 - (9) Other (please, specify):
-
-
-

1.g) This is a list of problems that one can find when using electronic journals. Please, tick the items which correspond to YOUR experience. If any problem has been left out, please add it in the appropriate space.

- | | | |
|------|---|--------------------------|
| (1) | The number of electronic journals in my discipline is too limited | <input type="checkbox"/> |
| (2) | I don't find the journals I need in electronic format | <input type="checkbox"/> |
| (3) | The number of back issues available is too limited | <input type="checkbox"/> |
| (4) | I feel more comfortable with printed journals | <input type="checkbox"/> |
| (5) | Finding links to electronic journals from the University of Parma libraries Web site is difficult | <input type="checkbox"/> |
| (6) | I don't know how to find electronic journals relevant to my subject | <input type="checkbox"/> |
| (7) | I have problems with printing articles | <input type="checkbox"/> |
| (8) | I find technical problems with using electronic journals | <input type="checkbox"/> |
| (9) | I'm not allowed to access some titles from home | <input type="checkbox"/> |
| (10) | Other (please, specify): | <input type="checkbox"/> |

.....
.....
.....

2. Which of the following aspects do you feel are most important in order to make electronic journals an advantageous resource for students in your discipline? For each item, please tick the appropriate column.

		(a)	(b)	(c)	(d)	(e)
		Unimportant	Not very important	Important	Very important	Don't know
(1)	Number of available titles in my discipline					
(2)	Updating of e-journals					
(3)	Speed of access					
(4)	Ease of use					
(5)	Access to back issues					
(6)	Easy-to-use system for discovering the links to e-journals					
(7)	Off-campus access					
(8)	Provision of information about e-journals					

3) There are different methods that can be used for helping people to discover electronic journals available and find how to access them. Thinking about YOUR experience of library use, what are the most useful? For each item tick the appropriate column

		(a)	(b)	(c)	(d)	(e)
		Useless	Not very useful	Useful	Very useful	Don't know
(1)	Add electronic journals to the OPAC					
(2)	Organise a subject access to electronic journals on the Web site					
(3)	Enable links from bibliographical references in databases to electronic journals					
(4)	Organise an alphabetical list of titles on the Web site					

Thank you very much for your kind cooperation. Please send the questionnaire to the e-mail address fabrizia.bevilacqua@unipr.it by June 26th.

Fabrizia Bevilacqua

APPENDIX 6

STUDENT QUESTIONNAIRE

Dear student,

Please fill in the following questionnaire and send it back to the e-mail address fabrizia.bevilacqua@unipr.it by June 26th. The questionnaire is part of an academic work that I am doing about the use of electronic journals by students and faculty members of the Humanities faculty. The results will be used to complete a Master dissertation in Library and Information Studies. All information will be confidential and will be used only for realising the research.

Please, reply to the following questions putting a X into the appropriate spaces.

What course are you attending?

Year (1st, 2nd, 3rd, etc.)

2) Do you use electronic journals for your study?

(1) YES

(2) NO

If your answer is NO, please explain the reason replying to the following question:

1.a) This is a list of possible reasons for not using electronic journals. Please, select the items which describe YOUR experience, ticking all relevant points. If you feel that something has been left out, please add it in the appropriate space.

(1) There are not enough PCs for students in the library

(2) I don't use journals for my study

(3) I find technical difficulties in using e-journals

(4) The PCs for students in the library work too slowly

(5) I don't know anything about this service

(6) I don't know where to find the links to electronic journals

(7) I feel more comfortable with printed journals

(8) There are no electronic journals available in my field of study

- (9) The number of years in electronic format is too limited
- (10) I don't like reading from screen
- (11) Other (please, specify):
-
-
-
-

If your answer is YES, please reply to the following questions (from 1.b to 1.g):

1.b) How frequently do you use electronic journals?

- (1) More than once a week
- (2) Once a week
- (3) Once or twice a month
- (4) Once or twice every six months

1.c) How did you find out about electronic journals? Please, tick all relevant points

- (1) From a professor
- (2) From friends
- (3) From the library staff
- (4) From the University of Parma Libraries Web site
- (5) Using the OPAC I found links from records to electronic journals
- (6) Using online databases I found links from bibliographic references to electronic journals
- (7) I attended a course on electronic information resources
- (8) Other (please, specify):
-
-
-

1.d) What training or support did you receive about electronic journals from your library staff?

Please, tick all relevant points

- (1) I attended the seminar for students "From the library to the network"
- (2) I attended a training session in my library
- (3) I received individual training from the library staff

- (4) I received support from the University Electronic Journal Web site
- (5) I did not receive any kind of training or support
- (6) Other (please, specify):
.....
.....
.....

1.e) How do you proceed in order to discover if the journal you are looking for is available in electronic format and to find the link? Please, tick all relevant points

- (1) I search a Web guide on electronic resources in my field of study
- (2) When I use online databases I find links from references to electronic journals
- (3) I look the electronic journal list on my library's Web site
- (4) I look the electronic journal list on my Department's Web site
- (5) I look up the site 'Electronic Journals' on the University of Parma Libraries Web site
- (6) I search the OPAC
- (7) I go to the publisher Web site and browse the electronic journal titles
- (8) I use a Web search engine
- (9) I have saved the electronic journals Web addresses in my 'favourite' Web sites
- (10) Other (please, specify):
.....
.....
.....

1.f) This is a list of possible reasons for using electronic journals. Please, tick the items which correspond to YOUR motivations. If any important aspect has been forgotten, please add it in the appropriate space.

- (1) Using electronic journals is more convenient than travel to the library
- (2) Electronic journals are available 24 hours a day
- (3) Using electronic journals saves time
- (4) Electronic journals are more updated than printed journals
- (5) The use of electronic journals is easy

- (6) Among electronic journals I find titles which are unavailable in printed form in my library
 - (7) I can search many years at the same time
 - (8) I can access an article directly from the bibliographical reference in online databases
 - (9) Other (please, specify):
-

1.g) This is a list of problems that one can find when using electronic journals. Please, tick the items which correspond to YOUR experience. If any problem has been left out, please add it in the appropriate space.

- (1) The number of electronic journals in my discipline is too limited
 - (2) I don't find the journals I need in electronic format
 - (3) The number of back issues available is too limited
 - (4) I feel more comfortable with printed journals
 - (5) Finding links to electronic journals from the University of Parma libraries Web site is difficult
 - (6) I don't know how to find electronic journals relevant to my subject
 - (7) The number of PCs available to students in the library is too limited
 - (8) I have problems with printing articles
 - (9) I find technical problems in using electronic journals
 - (10) I'm not allowed to access some titles from home
 - (11) Other (please, specify):
-

2. Which of the following aspects do you feel are most important in order to make electronic journals an advantageous resource for students in your discipline? For each item, please tick the appropriate column.

		(a)	(b)	(c)	(d)	(e)
		Unimportant	Not very important	Important	Very important	Don't know

(1)	Number of available titles in my subject					
(2)	Updating of e-journals					
(3)	Speed of access					
(4)	Ease of use					
(5)	Access to back issues					
(6)	Easy-to-use system for discovering links to e-journals					
(7)	Off-campus access					
(8)	Provision of information about e-journals					
(9)	Number of PCs available to students in the library					

3) There are different methods that can be used for helping people to discover electronic journals available and find how to access them. Thinking about YOUR experience of library use, what are the most useful? For each item tick the appropriate column

		(a)	(b)	(c)	(d)	(e)
		Useless	Not very useful	Useful	Very useful	Don't know
(1)	Add electronic journals to the OPAC					
(2)	Organise a subject access to electronic journals on the Web site					
(3)	Enable links from references in online databases to electronic journals					
(4)	Organise an alphabetical list of titles on the Web site					

Thank you very much for your kind cooperation! Please send the questionnaire to the e-mail address fabrizia.bevilacqua@unipr.it by June 26th.

Fabrizia Bevilacqua

APPENDIX 7

COVER LETTER QUESTIONNAIRE (FACULTY MEMBERS)

Dear professor,

My name is Fabrizia Bevilacqua. I work as librarian at the Classical and Medieval Philology Library and I am attending a Master course in Library and Information Science at the Università di Parma/Northumbria University at Newcastle. I am writing to you because I am carrying out an investigation about the use of electronic journals by faculty members and students of the Literature and Philosophy faculty. I am interested in collecting information from both users and non-users of the service. The research is part of my Master dissertation.

I would be very grateful if you could fill in the questionnaire form that you can find in attachment (it is a Word document). This will require only few minutes. Please, send it back to my email address fabrizia.bevilacqua@unipr.it by **June 26th 2003**. All information will be treated confidentially and will be used only for realising my dissertation.

If you prefer to remain anonymous, you can print the form, fill it in and send it to the following address by the internal post service:

Fabrizia Bevilacqua

Biblioteca di Filologia Classica e Medievale, via D'Azeglio 85.

Thank you in advance.

Yours faithfully

Fabrizia Bevilacqua

APPENDIX 7

COVER LETTER QUESTIONNAIRE (FACULTY MEMBERS)

Dear professor,

My name is Fabrizia Bevilacqua. I work as librarian at the Classical and Medieval Philology Library and I am attending a Master course in Library and Information Science at the Università di Parma/Northumbria University at Newcastle. I am writing to you because I am carrying out an investigation about the use of electronic journals by faculty members and students of the Literature and Philosophy faculty. I am interested in collecting information from both users and non-users of the service. The research is part of my Master dissertation.

I would be very grateful if you could fill in the questionnaire form that you can find in attachment (it is a Word document). This will require only few minutes. Please, send it back to my email address fabrizia.bevilacqua@unipr.it by **June 26th 2003**. All information will be treated confidentially and will be used only for realising my dissertation.

If you prefer to remain anonymous, you can print the form, fill it in and send it to the following address by the internal post service:

Fabrizia Bevilacqua

Biblioteca di Filologia Classica e Medievale, via D'Azeglio 85.

Thank you in advance.

Yours faithfully

Fabrizia Bevilacqua

APPENDIX 9

REMINDER LETTER (FACULTY MEMBER)

Dear professor,

At the beginning of June I sent you an e-mail questionnaire to you about the use of electronic journals in your field of research. The questionnaire is part of a research that I am undertaking for my Master dissertation in Library and Information Science. The information that you should provide is important to understand the opinion of the faculty members of the Literature and Philosophy faculty about the service.

In case you have not had yet the opportunity to complete the questionnaire, I send the form again as attachment. I would be very grateful if you could fill in the questionnaire form and send it back to my email address fabrizia.bevilacqua@unipr.it by **June 26th, 2003**. All information will be treated confidentially and will be used only for realising my dissertation.

If you prefer to remain anonymous, you can print the form, fill it in and send it to the following address by the internal post service:

Fabrizia Bevilacqua

Biblioteca di Filologia Classica e Medievale, via D'Azeglio 85.

Thank you in advance.

Yours faithfully

Fabrizia Bevilacqua

APPENDIX 10

REMINDER LETTER (STUDENT)

Dear student,

At the beginning of June I sent you an e-mail questionnaire to you about the use of electronic journals in your field of research. The questionnaire is part of a research that I am undertaking for my Master dissertation in Information Science. The information that you

should provide is important to understand the opinion of the students following courses of the Literature and Philosophy faculty about the service.

In case you have not had yet the opportunity to complete the questionnaire, I send the form again as attachment. I would be very grateful if you could fill in the questionnaire form and send it back to my email address **by June 26th, 2003**. All information will be treated confidentially and will be used only for realising my dissertation.

Filling in the questionnaire is easy. You have only to open the attachment (it is a Word document), to answer the questions, to save the changes and to send the form back as attachment to my email address: fabrizia.bevilacqua@unipr.it .

If you prefer to remain anonymous, you can print the form, fill it in and give it to the Biblioteca di Filologia Classica e Medievale, via D'Azeglio 85.

Fabrizia Bevilacqua
Biblioteca di Filologia Classica e Medievale, via D'Azeglio 85.

Thank you in advance.

Yours faithfully

Fabrizia Bevilacqua